Comparative growth pattern of multi drug resistance versus susceptible isolates of *Mycobacterium tuberculosis* in mice lungs

**U. Gupta, S. Dave, J. Faujdar, P. Gupta, M. Natrajan, V. Katoch**  
National JALMA Institute for Leprosy & Other Mycobacterial Diseases, 282001, UP, India

**Background:** Rise in prevalence of multi-drug resistance (MDR) in tubercle bacilli is a serious cause of concern. As mutations with two house keeping genes with resistance to two important anti-tubercular drugs rifampicin and isoniazid respectively, there is a need to understand the growth kinetics of organisms with such mutated genes in experimental animals. This study was undertaken to study the growth kinetics of susceptible as well multi-drug resistance *rpoB* and *katG* are associated *Mycobacterium tuberculosis* isolates in mice.

**Methods:** *M. tuberculosis* isolates (n=4) were collected from the National Mycobacterial Repository of National JALMA Institute for Leprosy & Other Mycobacterial Diseases, Agra. The samples were biochemically characterized as belonging to *M. tuberculosis* complex by nitrate and niacin reduction, heat resistant catalase (68oC) production. Drug susceptibility profile was evaluated by the minimum inhibitory concentration (MIC). Two MDR (having mutations in *rpoB* and *catG*) and two drug susceptible isolates of *M. tuberculosis* along with H37Rv were grown in mice after aerogenic infection.

**Results:** The MDR isolates grew slowly up to 3 wks though the growth was significantly different from sensitive strains. However, after 3 wks, the growth in sensitive as well MDR strains was similar, suggesting that even the mutations in the MDR strains did not have any impact on the growth kinetics.

**Conclusion:** The effect of mutations in other parts of these genes need to be studied. Retention of property of MDR strains to establish infection after aerogenic infection has epidemiological significance in terms of the transmission of MDR tuberculosis.
New evidences of the development of the Dengue Hemorrhagic Fever during the dengue 3 epidemic in Cuba 2001-2002

M. Alvarez Vera  
Tropical Medicine Institute Pedro Kouri, Marianao 13. La Lisa, Cuba

Background: In this work defined some of the factors involved for the first time in the development of dengue hemorrhagic fever during the introduction in the country of the dengue 3 in an epidemic way.

Methods: Sera included in this study are collected from DF and DHF cases during the Havana dengue 3 epidemic in 2001-2002. These groups of sera were studied by EIM and a plaque reduction neutralization test.

Results: Here we confirms that the secondary infection was the factor of more important risk in this epidemic, after 24 years of the primary infection for dengue-1, contrary to the infection sequence dengue-2/dengue-3 that didn't associate. The tertiary infection also associated to the development of dengue hemorrhagic fever. The titles of neutralising antibodies were different for strains of dengue-3 of the same genotype in a panel of late convalescent serum of this epidemic of both clinical pictures. The duration of the viremia in the patients with primary infection was bigger than in the secondary, not being detected in the first neutralising antibodies during the acute phase, while in the secondary infection the levels of neutralising antibodies after the fifth day, coinciding with the fall of the viremia. In a general way, the neutralising antibodies induced reached inferior levels in the patients of FD compared with those of FHD.

Conclusion: This studies was the first that demonstrated that the immunity to DEN 1 sensitize the individuals to the development of the DHF during a secondary infection for DEN 3. Also show that exist differences in the neutralising capacity of immune sera to DEN-3 in presence of strains of DEN-3 virus of the same and different genotype. It has implications in the development of a candidate vaccine and in the knowledge of the etiopathogenic of the illness and has a practical application in the particular protection of the individuals that suffered a primary infection ("Personalized Epidemiological Surveillance").
The role of \textit{Mannheimia hemolytica} in the pathology of experimental PPR virus infections in goat

\textbf{B. O. emikpe}\textsuperscript{1}, S. Akpavie\textsuperscript{2}

\textsuperscript{1}University of Ibadan Nigeria, Ibadan, ng, Nigeria, \textsuperscript{2}University of Ibadan, Ibadan, Nigeria

\textbf{Background:} The field association of PPRV and \textit{Mannheimia hemolytica}, in caprine pneumonia in Subsaharan Africa is quite common. This study was carried out to compare the clinical features of MH, PPRV, and concurrent PPRV and MH infections in experimentally infected goats and also to understand the role of MH in the pathology of experimental PPRV infection in West African Dwarf goats.

\textbf{Methods:} Three groups of 15 goats each, aged 6-9 months were intratracheally and intranasally inoculated with 1 ml of pure culture of a 4 hour log phase 1.0 x 10\textsuperscript{9} CFU of MH serotype A2, (group A), 1ml of the pure culture of 106.5 (Tissue Culture Infective Dose) PPRV grown in baby hamster kidney cells (group B), and PPRV followed a week later with MH (group C) and five goats served as controls. Two goats in each group were euthanized at predetermined intervals. The clinical signs were observed, gross examinations and histopathological investigations were carried out using standard techniques.

\textbf{Results:} The highest changes in temperature and respiratory rates were observed in group C when compared to groups A and B. The clinical features in group C were also more severe, appeared earlier and of longer duration than in groups A and B. The weight of the animals decreased remarkably in the first 14dpi in all the groups. There was a moderate weight decrease in group C, 21 - 42dpi and marked weight decrease in group B animals > 28dpi.

The weight loss and the lung consolidation in the MH group had an inverse relationship. The MH group has the highest lung consolidation percentage (10.1\%) while the PPRV infection between 1-28dpi had the lowest consolidation percentage (1.06\%). The mortality rates observed in the groups A, B and C were 20.0\%, 26.7\% and 33.3\% respectively.

\textbf{Conclusion:} The concurrent infection of PPRV and MH in group C may be associated with the intense, prolong duration of the clinical signs, severe lesions and fatality observed in the experimentally infected goats.
Type I hypersensitivity reaction induced in vitro by Triumpheta cordifolia aqueous extract on rat peritoneal macrophages

V. B. owona ayissi
University of Yaounde I, Yaounde, Cameroon

Background: In vitro immunomodulatory activities of the aqueous extract of T. cordifolia on rat immune system were investigated. The appropriate conditions for cell suspension in the laboratory were assayed.

Methods: Studies on chemotactic and phagocytic activities of different concentrations (0.01, 0.1, 1, 10 and 100µg/ml) of the plant extracts were done using the saccharomyces cerevisiae model.

Results: It was observed that macrophages used in these studies can suspend better in DMEM medium for 6h with significant viability (92.48±0.487%). No significant activity was obtained in term of chemotactic and phagocytic induction. Nevertheless, we observed an hyperproduction of H2O2 (more than 2mM) during phagocytosis. The present study revealed the hypersensitivity activity, which could be explained the itching effects of this plant.

Conclusion: Based on the above findings, these plant extracts could be useful in the strengthening of the immune system.
Effect of silver nanoparticles as a new generation of antimicrobials for 4 bacterials: *Staphylococcus aureus*, *S. epidermidis*, *E. coli* and *Pseudomonas aeruginosa*

**M. Doudi, L. Shirani-Bidabadi, H. Hejazi**
Falavarjan Azad University, Falavarjan, Iran, Islamic Republic of

**Background:** Due to the out break of the infectious disease caused by different pathogenic bacteria and the development of antibiotic and the researchers are searching for new antibacterial agents. Nanotechnology for developing biosynthetic and environmental friendly technology for synthesis of nanomaterials. In the present, nanoscale materials have emerged up as novel antimicrobial agents owing to their high surface area to volume ratio and silver nanoparticles have proved to be most effective as it has good antimicrobial efficacy against bacteria, fungi and viruses. The main purposes effect of silver nanoparticles for 4 bacterials.

**Methods:** Bacterial with multiple antibiotic resistance isolated from cutaneous leishmaniasis and study on test for 60 isolated specimens, and selected 20 strains include of methicillin resistance staphylococcus aureus (MRSA), *S. epidermidis*, *Escherichia coli* and *Pseudomonas aeruginosa* because of were resistance to the most of related antibiotics. Also, selected of standard bacteria: staphylococcus aureus (ATCC 25923), staphylococcus epidermidis (ATCC 12228), Escherichia Coli (ATCC 25922) and pseudomonas aeruginosa (ATCC 27853), and evaluated effect of antibacterial activity of antimicrobial silver nanoparticles (with, 5, 10, 20 and 30% antibacterial agent) and determined MIC by broth micro-dilution method.

**Results:** Finally result indicated antibacterial silver nanoparticles are effective on growth of selected bacteria but this inhibitory effect was more significant in gram – negative bacteria than gram-positive kinds. Moreover, comparison MIC of silver nanoparticles with MIC of antibiotics showed that in all strains is completely different (P<0.001) and indicated of more inhibitory effect of pure antibacterial agent of silver nanoparticles than tested antibiotics on bacteria.

**Conclusion:** Therefore overall study of results of this research is confirmed antibacterial effect of investigated silver nanoparticles, their significant influence as speray in prevent control and improved of skin infections especially in cutaneous leishmaniasis patients and their possibility of usage after clinical study. However, with the advent of silver nanoparticles and its major use as an antimicrobial agent, much experimental trials are needed to understand the toxicity.
Antibiotic resistance and molecular epidemiology of Enterococcus isolates causing infections in Cuba

D. Quinones\(^1\), D. Marrero\(^2\), A. Llop\(^1\), R. Llanes\(^1\), N. Kobayashi\(^3\), R. Gomez Lus\(^4\), R. del Campo\(^5\)

\(^1\)Tropical Medicine Institute “Pedro Kouri”, Ciudad de La Habana, Cuba, \(^2\)Octavio de la Concepción y la Pedraja” Hospital, Holguín, Cuba, \(^3\)Sapporo Medical University School of Medicine, Sapporo, Hokkaido, Japan, \(^4\)Zaragoza University, Saragossa, Spain, \(^5\)“Ramon y Cajal” Hospital, Madrid, Spain

**Background:** Enterococcus has emerged as important nosocomial pathogens worldwide. This work presents the first report of national surveillance of enterococci in Cuba during 2000-2006. The study included species prevalent, phenotype and genotype resistance patterns and genetic diversity among selected nosocomial enterococcal populations.

**Methods:** A total of 501 Enterococcus recovered from 26 hospitals of Cuba during a period between 2000 and 2006 were studied. The minimum inhibitory concentration was determined to seventeen antibiotics and resistance genes to aminoglycosides, glicopeptides, macrolides and tetracycline were examined by PCR. Clonal relationships were studied by Pulsed-field gel electrophoresis.

**Results:** Eight enterococci species were detected. Enterococcus faecalis was the most prevalent (83%) species, followed by E. faecium (10%), E. avium (1.8 %), E. gallinarum (1.6 %), E. durans (0.6 %), E. hirae (0.6 %), E. raffinossus (0.8 %), E. casseliflavus (0.8 %). HLR to gentamicin, streptomycin and amikacin was detected in 32%, 27% and 28% of the isolates respectively. Five percent of Enterococcus spp. was resistant to ampicillin. The resistance to glicopeptides was low (vancomycin, 0.4% and teicoplanin, 0.2%) and it was mediated by Van A and Van B genes. Not resistant isolates to linezolid was detected. Resistance to other drugs, including the fluoroquinolones, was present. High level resistance to aminoglycoside was mediated by the genes aac(6\(^\prime\)) Ie-aph(2\(^\prime\)) Ia, aph(3\(^\prime\)) - IIIa, ant(6), ant(3\(^\prime\)) (9). The erm(B) gene was found in 71% of the erythromycin-resistant strains. The resistance to tetracycline (74%) was mediated by tet(L) (7%) and tet(M) (78%) genes. Dissemination intra- and inter-hospital of clones of Enterococcus spp. was evident in Cuba. The resistance to different antimicrobians was influenced by the dissemination of resistant clones and/or the transfer of genetic elements.

**Conclusion:** Vancomycin resistant enterococcus is infrequent in Cuba. In contrast, high-level aminoglycoside resistance is highly prevalent, suggesting a problem of its expansion through antibiotic selective pressure and dissemination in hospital environment. The dissemination of resistant clones within the hospitals indicated the significance of infection control and monitoring of antibiotic susceptibility to prevent selection of resistant enterococci isolates in the hospital.
The effect of some natural product, vegetal extracts and ozone, on *Staphylococcus aureus*, like alternative therapy for hospital-associated infections

L. M. Junie¹, G. Rapunetean², S. Rapuntean², D. Homorodean³, N. Fii², A. Jodal³, F. Pitu¹
¹University of Medicine and Pharmacy, 43200, Romania, ²Faculty of Veterinary Medicine, Cluj Napoca, Romania, ³Leon Daniello Pneumoftiziological Hospital, Cluj Napoca, Romania

**Background:** Hospital associated infections are representing a major worldwide health public inquire. Illness gravity and high mortality, especially in intensive care units asked for finding alternative therapy of these infections, for reduction of severe nosocomial infections. The objective of this work was the evaluation of resistance to antibiotics and to test the effect of some natural products and ozone on MRSA responsible for hospital-associated infections.

**Methods:** There had been identified 359 strains of *Staphylococcus aureus* isolated from humans and animals collected samples, using the API test, the VITEK 2 System ATB (BioMerieux, France). The resistance profiles were by Kirby Bauer method as recommended by CLSI. The effect of some vegetal extracts, bee products (apireven, propoderm, meltonic, royal jelly, propolis tincture, honey), and ozone were tested on isolated strains by the diffusion method. Vegetal extracts used were essential oils obtained from plants found in Romanian flora, as well in other countries with subtropical climate (polioel 3, coconut, eucalyptus, rattle marigold, fir, aloe, thyme and savoury essential oils).

**Results:** *S. aureus* isolated strains were MSSA (74%), MRSA (8%), MLSB (12%) and MRSA&MLSB (6%). From MRSA isolated strains: 56% were Erythromycin resistant, 38% were resistant to MLSB. There were isolated also 95 strains of CoNS involved in urinary and surgical infections, from which 42% were MRSA, 12% were resistant to Vancomycin and 4% to Teichoplanin. We have noticed an increase toward glycopeptides, antibiotics used in severe forms of these infections. The bee products with the highest efficiency on *S. aureus* strains were propolis tincture, followed by royal jelly, meltonic and propoderm. Honey has been also active. The most efficient plant extracts were fir and thyme essential oils, followed by coconut, eucalyptus and Polioel 3 essential oils. From the four ozone solutions tested, solutions 2 and 4 were the most efficient.

**Conclusion:** Our data suggest that infections caused by *S aureus*, especially MRSA continue to be a major challenge in Romania. An important issue in therapy is the occurrence of the resistant strains to antibiotics. Some of the vegetal extracts and bee products can represent alternative therapy of staphylococci infections to antibiotics. The findings emphasize the need for continuous surveillance and further clinical investigational studies.
Escherichia coli and other Enterobacteriaceae. Antimicrobial susceptibility pattern in a four-year established prospective surveillance program of continued Hospital monitoring

R. Manfredi
University of Bologna, Bologna, Italy

Background: The changed rate of drug resistance among Enterobacteriaceae is a relevant issue, especially in the hospitals. A prospective microbiological surveillance based on a continued monitoring of in vitro antimicrobial susceptibility rates, is ongoing at our Hospital.

Methods: The temporal variations of in vitro antimicrobial sensitivity trends were updated quarterly for all suitable Enterobacteriaceae strains, followed from year 2005 to year 2008. The same pathogen cultured more than once from the same patient within one month, has been considered one time only.

Results: Among overall Escherichia coli isolates (4,708 strains tested on the whole), imipenem and colistin maintained a full (100%) in vitro activity, followed by amikacin (96.3-98.5% of tested strains), nitrofurantoin (87.5-94.5%), piperacillin-tazobactam (87.6-91.4%), gentamicin (81.6-86.0%), ceftazidime (69.9-85.7%), cefotaxime (69.8-85.5%), and ciprofloxacin (54.2-70.4%). When considering Enterobacteriaceae other than Escherichia coli (3,276 strains on the whole), colistin remained 100% active, followed by imipenem (97.3-98.7%), amikacin (94.8-96.6%), piperacillin-tazobactam (77.7-85.3%), cotrimoxazole (72.1-78.0%), gentamicin (71.5-77.0%), norfloxacin (61.5-75.8%), ceftazidime (61.5-69.4%), and cefotaxime (61.3-68.9%). The emerging spread of enlarged-spectrum beta-lactamase production was expressed by a rise from 14% to 30% of strains for E. coli (2005 to 2008), associated with an increase from 30% of year 2005 to 38% of year 2008 for other Enterobacteriaceae. This phenomenon greatly contributed to reduce significantly the activity of third-generation cephalosporins over time (from a mean of 85.6% of susceptible Escherichia coli strains in the year 2005, to 69.8% in the year 2008; p<.001; and from a mean of 69.2% of sensitive Enterobacteriaceae strains in the year 2005, to 61.4% in the year 2008; p<.02). Also fluoroquinolones and protected beta-lactams suffered from a drop of their in vitro sensitivity rates (p<.03 to p<.005).

Conclusion: A long-term prospective bacteriological monitoring of antimicrobial susceptibility rates of relevant hospital-related microorganisms like Enterobacteriaceae is of paramount importance, to plan antibiotic treatment and prophylaxis schedules, in local clinical settings. Despite a maintained activity of carbapenems and colistin, a significant trend toward increased resistance rates was found over a four-year observation period, with extended-spectrum beta-lactamase secretion playing a major role.
A four-year trend of in vitro susceptibility profile of *Staphylococcus aureus* strains isolated at a teaching Hospital of Northern Italy

**R. Manfredi**
University of Bologna, Bologna, Italy

**Background:** The increased rate of drug resistance among Gram-positive cocci is of general concern, especially in hospital settings. A prospective bacteriological monitoring including a continued surveillance of antimicrobial susceptibility rates, is ongoing at our General Hospital, since the year 2005.

**Methods:** The temporal variations of the in vitro antimicrobial sensitivity figures were examined quarterly for all suitable *Staphylococcus aureus* strains, and followed from year 2005 to year 2008. The same pathogen cultured more than once from the same patient within one month, has been considered only once.

**Results:** Among overall *Staphylococcus aureus* isolates (1,816 strains tested on the whole), a complete, (100%), steady sensitivity was shown against vancomycin and teicoplanin, while some compounds retained interesting activity (90.1-97.2% for cotrimoxazole, 80.7-88.2% for chloramphenicol, 66.5-75.3% for rifampicin). Oxacillin (methicillin) resistance significantly dropped from a 53.7% rate of the year 2005, to a 44.4% frequency of the last year 2008. As a consequence, beta-lactam derivatives proved an in vitro activity of 46.3-55.6% for co-amoxiclav, 46.2-55.6% for cefotaxime, but only 7.4-11.2% for penicillin G. Among other tested molecules, clindamycin reached a comprehensive 50% susceptibility rate (40.8-55.5% of all tested strains), followed by erythromycin (40.3-56.0%), and gentamicin (42.3-55.7%). No statistically significant temporal variations of antimicrobial susceptibility rates occurred during the four-year study time (2005 to 2008).

**Conclusion:** A long-term bacteriological surveillance of antimicrobial susceptibility rates of relevant hospital-related microorganism like *Staphylococcus aureus* is very important, to found reliable guidelines of antibiotic treatment and prophylaxis, in common clinical settings. Despite a significantly reduced rate of methicillin resistance (mean value around 46% of all *Staphylococcus aureus* isolates), we have to underline that “older” compounds like cotrimoxazole, chloramphenicol, and also rifampicin, may still play some role in selected clinical situations, while the activity of available glycopeptides is maintained in 100% of isolated microbial strains.
Extended-spectrum beta-lactamase production and its effects on the in vitro antibiotic sensitivity figures among Escherichia coli and other Enterobacteriaceae isolated in one year of prospective Hospital surveillance program of microbial isolates

R. Manfredi
University of Bologna, Bologna, Italy

Background: The increased rate of antimicrobial resistance among Gram-negative rods and all Enterobacteriaceae as whole is a major concern, especially in the hospital setting. A prospective microbiological surveillance of antimicrobial susceptibility rates of all relevant pathogens is ongoing at our Hospital, together with an analysis of the relationship with the emergence of extended-spectrum beta-lactamase secretion.

Methods: The temporal variations of in vitro antimicrobial sensitivity rates were assessed at quarterly intervals for all suitable Escherichia coli strains and other Enterobacteriaceae, during the year 2008. The same pathogen cultured more than once from the same patient within one month, has been considered one time only.

Results: Among Escherichia coli isolates (1,351 strains tested on the whole), imipenem tested in vitro effective in 100% of cases, followed by piperacillin-tazobactam (85.6-89.3% of tested strains), nitrofurantoin (81.7-92.1% of strains), ceftazidime (63.9-71.1%), cefotaxime (64.1-71.3%), co-amoxiclav (50.9-57.1%), norfloxacin (54.4-61.7%), and ciprofloxacin (49.8-54.7%). Both cefotaxime and ceftazidime sensitivity (affected by the production of extended-spectrum beta-lactamases), had a drop from a 71.3% mean susceptibility rate of the first quarter of year 2008, to a mean 69.7% of the last quarter of the same year. With regard to Enterobacteriaceae as a whole (other than Escherichia coli), among 851 comprehensive isolates, colistin retained full (100%) in vitro activity, followed by imipenem (96.3-100.0%), piperacillin-tazobactam (77.8-84.8% of tested strains), gentamicin (77.1-81.5%), cotrimoxazole (67.9-77.0%), ciprofloxacin (63.2-68.9%), ceftazidime (59.1-65.0%), norfloxacin (54.5-66.7%), and cefotaxime (58.8-64.8%), with cephalosporins moderately affected by extended-spectrum beta-lactamase production, although in absence of significant temporal modifications.

Conclusion: Prospective surveillance studies of in vitro antimicrobial sensitivity rates of some relevant hospital-associated organisms like Escherichia coli and Enterobacteriaceae are a very useful guidance to plan antibiotic treatment and prophylaxis, on local and regional basis. This last Gram-negative organism group also allows a reliable study of the temporal trend of extended-spectrum beta-lactamase production, which significantly affects the activity of multiple broad-spectrum antimicrobial compounds.
Reduced rate of methicillin resistance among *Staphylococcus aureus* isolates at a major General Hospital located in Bologna, Italy

**R. Manfredi**  
University of Bologna, Bologna, Italy

**Background:** The methicillin resistance rate among Gram-positive cocci is a general concern, especially in the hospital setting. A prospective microbiological monitoring including a continued surveillance of antimicrobial susceptibility rates, is ongoing at our General Hospital, located in Bologna, Italy.

**Methods:** The temporal variations of *in vitro* antimicrobial sensitivity figures were examined quarterly for all suitable *Staphylococcus aureus*, during the year 2008. The same pathogen cultured more than once from the same patient within one month, has been considered one time only.

**Results:** Among *Staphylococcus aureus* isolates (440 strains tested on the whole), both available glycopeptides (vancomycin and teicoplanin), maintained a full 100% sensitivity profile over time, while the rate of methicillin resistance showed a significant drop from January-March 2008 (52.0% of tested strains), to April-June 2008 (46.9%), to July-September 2008 (37.1%), to October-December 2008 (40.0% of tested strains). When considering antibiotics other than beta-lactam ones, cotrimoxazole maintained a consistently elevated activity over time (91.8% to 94.9% of microbial strains tested during the study period), followed by chloramphenicol (82.6% to 87.0% of tested strains), and rifampicin (74.1% to 75.6% of tested strains), while clindamycin showed a worse sensitivity profile (53.0% to 60.4% of tested strains), comparable with that of erythromycin (54.9% to 60.4% of tested strains), followed by that of gentamicin (active on 45.0% to 54.0% of tested strains). Among antimicrobial compounds other than beta-lactam derivatives, no significant modifications of antibiotic susceptibility rates were observed during the study period, against *Staphylococcus aureus* isolates.

**Conclusion:** A prospective bacteriological surveillance of antimicrobial susceptibility rates of a major hospital-associated microorganism like *Staphylococcus aureus* is relevant, to establish reliable guidelines of antibiotic treatment and prophylaxis, on both local and regional basis. Despite a significant increase of methicillin resistance rates, “older” compounds like cotrimoxazole, chloramphenicol, and rifampicin, may still play a role in selected clinical instances, while the activity of vancomycin and teicoplanin remains fully preserved until now.
Antibiotic susceptibility of *Helicobacter pylori* isolated from the dyspepsia patients in Tehran, Iran

**L. Shokrzadeh, F. Jafari, K. Baghaei, H. Dabiri, M. M. aslani, M. R. Zali**
Research Center for Gastroenterology and Liver Diseases, Tehran, Iran, Islamic Republic of.

**Background:** *Helicobacter pylori* as an etiological agent of active chronic gastritis and peptic ulcer disease, is now considered to be an important pathogen for gastroduodenal diseases. Infection with *H. pylori* can be limited by regimens of multiple antimicrobial agents. However, the most important causes of therapy failure are related to increase prevalence of antibiotic resistance in *H. pylori* thus each country must provide local data to guide treatment policies.

**Methods:** *H. pylori* strains from gastric biopsies from patients with gastroenterology diseases were collected from Taleghani Hospital Tehran, Iran. Primary isolation was performed on brain heart infusion (BHI) agar with 10% (v/v) sheep blood containing *Campylobacter*-selective supplement. Agar dilution method was used for minimal inhibitory concentration (MIC). All plates were incubated for 72 h at 37 °C in microaerophilic atmosphere. Susceptibility testing was performed to commonly used antibiotics such as clarithromycin, tetracycline, amoxicillin, metronidazole and ciprofloxacin.

**Results:** Among 92 patients with dyspepsia, *H. pylori* strains were isolated from 42 patients. Seventeen (40.5%) of isolates were resistant to metronidazole (MICs ≥ 8 g/l), whereas 1 isolate (2.4%) was resistance to amoxicillin (MICs ≤ 0.5 g/ml) and ciprofloxacin (MICs ≤ 1 g/ml). The resistance rates to other antibiotics in *H. pylori* isolates recorded as follows: clarithromycin 6 (14.3 %), tetracycline 2 (4.8%). In 5 of 42 resistant cases, combined resistance was found. Among these multiple resistances, the maximum resistance rate observed in the case of metronidazole plus clarithromycin (n=3, 7.1%).

**Conclusion:** Because metronidazole is used to treat diarrheal disease including parasitic and bacterial infections, and also is the first line therapy in gastritis infected with *H. pylori* strains, high resistance to metronidazole can be expected in Iran. On the other hand in Iran unrestricted and unsuitable use of the antibiotics can be cause of developing of antibiotic resistance in *H. pylori*. These data suggest that metronidazole should not be used therapeutically among Iranian patients in first-line therapy, while ciprofloxacin could be recommended in association with amoxicillin and a proton pump inhibitor.
In Vitro antibacterial activity against selected species of glucose non-fermenting gram-negative rods in the United States from 2008-2009 - Tigecycline Evaluation Surveillance Trial (T.E.S.T.)

B. Johnson¹, D. Hoban¹, S. Bouchillon¹, J. Johnson¹, M. Dowzicky²
¹International Health Management Associates, Inc., Schaumburg, IL, USA, ²Pfizer Inc, Collegeville, PA, USA

Background: Glucose non-fermenting gram negative rods are known to be highly resistant in hospital settings and have always been a challenge for clinicians and hospital infection control. Tigecycline has been shown to have potent in vitro activity against most species of Enterobacteriaceae and selected species of non-fermenters. The T.E.S.T. program determined the in vitro activity of tigecycline compared to amikacin, ampicillin, imipenem, meropenem, cefepime, ceftazidime, ceftriaxone, levofloxacin, minocycline and piperacillin/tazobactam against members of Acinetobacter spp. and Pseudomonas aeruginosa collected from hospitals in the United States.

Methods: A total of 851 clinical isolates were collected throughout 2008-2009 and Minimum Inhibitory Concentrations (MICs) were determined utilizing broth microdilution panels with fresh broth and interpreted according to CLSI guidelines.

Results: The MIC50/MIC90 of tigecycline to Acinetobacter spp. (n=330) and P. aeruginosa (n=521) was 0.5/2 mcg/ml and 8/16 mcg/ml, respectively. Ceftazidime and cefepime remained active against a majority of isolates inhibiting 67.7% and 71.2% of isolates, respectively. Tigecycline showed the lowest MIC50/MIC90 of 0.5/2 mcg/ml against A. baumannii (n=295), compared to amikacin MIC50/MIC90 4/>64, meropenem MIC50/MIC90 1/>16 and minocycline MIC50/MIC90 1/8. The in vitro activity of tigecycline was unaffected by multi-resistant isolates of A. baumannii and Acinetobacter spp. Similar findings were observed in other species of Acinetobacter. Tigecycline displayed reduced activity against P. aeruginosa.

Conclusion: The presented data suggest that tigecycline may be a potential therapeutic option against commonly encountered nosocomial Acinetobacter spp. and multi-drug resistant strains regardless of degree or type of resistance.
Analysis of multidrug resistant (MDR) *E. coli* strains from equine faecal samples in NW England

**M. Ahmed**¹, N. J. Williams², P. D. Clegg², K. E. Baptiste³, T. Hart⁴, M. Bennett⁵

¹Alfateh University, Tripoli, Libyan Arab Jamahiriya, Socialist People’s, ²University of Liverpool, Neston, United Kingdom, ³University of Copenhagen, Taastrup, Denmark, ⁴University of Liverpool, Liverpool, United Kingdom, ⁵University of Liverpool, Neston, United Kingdom

**Background:** The emergence of bacteria possessing multiple-antibiotic resistance genes has become a major concern in recent years and reported as serious health treat.

**Methods:** Multidrug resistant (MDR) *E. coli* strains (n=115) from equine faecal samples were analyzed for various antibiotic resistant genes by PCR protocols for the detection of the most common resistant genes to: ampicillin (tem, shv), chloramphenicol (catI, catII, catIII and cml), tetracycline (tetA, tetB, tetC, tetD, tet E and tetG), and trimethoprim (dfrA1, dfrA19, dfrA12, dfrA13, dfrA14, dfr7, and dfr17).

**Results:** Identified resistance genes within each antimicrobial resistance group were as following: dfr, tem, tet and cat, which respectively conferring resistance to trimethoprim, ampicillin, tetracycline and chloramphenicol, at frequencies of 93%, 91%, 90% and 75%.

**Conclusion:** Results suggest that most of the resistant genes observed in equine MDR *E. coli* strains are from well-characterized antibiotic resistant genes common to *E. coli* from man and domestic animals. Our results support the ongoing concern about antimicrobial resistance, antimicrobial use, and the zoonotic risk that equines could pose to therapy and public health.
Prevalence and antimicrobial resistance of *Campylobacter jejuni* and *Campylobacter coli* isolated from retail raw meats in Korea

**J. W. Chon**¹, J. Y. Hyeon¹, J. H. Lee¹, Y. G. Kim¹, I. G. Hwang², H. S. Kawk², J. A. Han², K. H. Seo¹

¹Konkuk Univ., 701, Korea, Republic of, ²National Institute of Food and Drug Safety Evaluation, 704, Korea, Republic of

**Background:** *Campylobacter* is one of the most common causes of human foodborne illness. Recently, *Campylobacter jejuni* (*C. jejuni*) and *Campylobacter coli* (*C. coli*) isolated from raw meat show high level of antibiotics resistance in many countries. In this study, *C. jejuni* and *C. coli* were isolated from retail raw meats and were analyzed the pattern of antibiotic resistance by agar dilution method.

**Methods:** Ninety meat samples purchased from retail market in Seoul were used. Samples were incubated in Hunt broth at 37° (pre-enrichment for 4h) and 42° (enrichment for 44h) for 48h and then streaked onto the Preston agar followed by incubating under microaerobic conditions at 42° for 48h. Suspected colonies were screened by oxidase test and finally confirmed by real-time PCR. Susceptibility test were performed with agar dilution method following in accordance with NCCLS. The concentrations of the seven antibiotics tested were 0.5–256 g/mL.

**Results:** Twenty-two *C. jejuni* and *C. coli* strains (24.4%) were isolated from 90 raw meat samples. Chicken samples were show the highest rates of contamination (77.8%), followed by pork (8.3%) and beef (5.5%). All isolates were resistant to at least one of the six antimicrobial agents and rate of multidrug resistance (four or more antibiotics) was very high (86.4%).

**Conclusion:** *C. jejuni* and *C. coli* were widespread in retail meats and most of them had multidrug resistance. High level of antimicrobial resistance is a major emerging public health concern in Korea.
Antibiotic resistance in *Pseudomonas aeruginosa*: Mechanisms and phenotypic detection methods

**K. Kosaraju**
Kasturba medical College, Manipal University, MANIPAL, KARNATAKA, India

**Background:** *P. aeruginosa* is one of the leading pathogens worldwide. Nosocomial infections caused by this organism are difficult to treat because of the intrinsic resistance of the species as well as its ability to acquire resistance to multiple classes of antimicrobials. *P. aeruginosa* represents a phenomenon of antibiotic resistance and practically demonstrates all known enzymic and mutational mechanisms of bacterial resistance. The increasing prevalence of nosocomial infections caused by multi-drug resistant *Pseudomonas aeruginosa* severely compromises the selection of appropriate treatments and is, therefore, associated with significant mortality and morbidity.

**Methods:** A total of 83 non-repetitive isolates of *Pseudomonas spp* from various clinical samples were collected and identified using standard microbiological procedures. Antibiotic susceptibility testing was done by Modified Kirby-Bauer method. *Pseudomonas aeruginosa* ATCC 27853 was used as the control. MIC for imipenem was done by Agar dilution method. Imipenem resistant isolates were further tested for MBL production by Modified Hodge test and Imipenem-EDTA double disk synergy test. Isolates were also evaluated for Amp-C production by cefoxitin disk method.

**Results:** Sixty three (75.9%) out of 83 isolates were susceptible to Imipenem by disk diffusion method but only 72.28% (60/83) were sensitive to Imipenem by agar dilution. *Pseudomonas spp.* showing imipenem resistance was predominantly isolated from urine samples (43.47%). Three (3.6%) out of 83 isolates were found to produce Amp C enzyme. Out of which two isolates were from urine sample and one isolate from wound swab. None of the isolate were found to produce metallo _-lactamase enzyme by modified Hodge test but 17(73%) isolates out of 23 were found to produce metallo _-lactamase by imipenem + EDTA double disk synergy test.

**Conclusion:** *P. aeruginosa* seriously contributes to hospital infections, particularly in burn wound unit and catherized patients. Imipenem, Meropenem,Amikacin were found to be most effective while Ceftazidime, Ciprofloxacin and Gentamicin showed maximum resistance in our setting. Our study proves the increasing prevalence of multi-drug resistant *Pseudomonas* and therefore, methods to detect various types of resistance should be performed routinely. This helps in early identification of these 'superbugs' and demands effective infection control measures to control their spread.
Sulbactam effect against biofilm developed of multidrug resistant isolates of *Acinetobacter baumannii*

**A. Farinati**¹, A. Miquelarena¹, J. Toran¹, J. M. Casellas², G. Vazquez¹
¹Facultad de Medicina, Universidad del Salvador, Buenos Aires, Argentina, ²Laboratorio CIBIC, Rosario, Santa Fe, Argentina

**Background:** Multidrug resistant (MDR) *Acinetobacter baumannii* (*Ab*) is a concern in health care because its multiple capacity of pathogenicity. The ß-lactamase inhibitor sulbactam (*Sb*) have intrinsic activity against *Acinetobacter* strains. Since *Ab* could develop either in biotic or abiotic surfaces we decide to study the effect *Sb* in *in vitro* biofilms (*Bf*) of MDR *Ab* and to establish its potential usefulness against this microbial lyfestyle.

**Methods:** We use 6 MDR nosocomial *Ab* for *Bf* formation which were grown for 48 hs in Muller Hinton broth (MHB) on glass coupons and 96 multiwell plates. We challenge *Bf* growth with 2 concentrations of *Sb* 32 mg/L (C1) and 2048 mg/L (C2). *Sb* MIC were established at 64-128 mg/L. *Sb* was added before bacteria inoculation (BI) or 24 hs after inoculation (AI). We stained multiwell plates and glass coupons with 0.25% cristal violet. Finally we select one MDR *Ab* and developed mixed biofilms with a clinical isolate *Candida albicans* (*Ca*) as biotic surface. This *Bf* was grown using MHB supplemented with 0.4 % glucose, with and without 32 mg/L of *Sb*.

**Results:** All strains in multiwell plates developed biofilm with C1 and only 2 MDR with C2 in BI experiments. Four MDR showed *Bf* formation when challenge AI for C1 and C2. Four MDR developed good *Bf* on glass coupons with C1 and 1 with C2 (BI condition). Their morphology showed microcolonies formed by filamentous bacteria. The controls grown without antibiotic, were formed by small rods. However, if *Sb* was added AI, with C1 and C2 all strains showed an altered *Bf* morphology. Using *Ca* as biotic surface, mixed biofilms were formed without antibiotic, while challenging with *Sb*, *Ca* and *Ab* developed separated *Bf* and *Ab* *Bf* showed only rods.

**Conclusion:** Despite *Ab* *Bf* is resistant to antibiotic treatment, when *Sb* is added after *Bf* formation, it suffered a morphology alteration that might make this structure accesible to natural mechanism of defence.

Trying to grow mixed biofilms in the presence of *Sb*, *Ca* and *Ab* formed separated *Bf*, but the bacterial *Bf* resembled the control growth, indicating that *Ca* may be protecting *Ab* from the effect of *Sb*.
Daptomycin activity against enterococci from Latin American medical centers, including Vancomycin-resistant strains (2005-2009)

H. Sader, G. J. Moet, R. N. Jones
JMI Laboratories, North Liberty, IA, USA

Background: VRE have emerged and consistently increased in prevalence in some Latin American (LA) medical centers in recent years, but with a wide geographic variation. Daptomycin is a cyclic lipopeptide approved for use in Europe, United States and various LA countries. We evaluated the activity of daptomycin and comparator agents tested against recent clinical enterococcal isolates from patient infections in LA.

Methods: A total of 2,133 enterococci (1,649 E. faecalis [EF], 371 E. faecium [EFM] and 113 non-faecalis-non-faecium [ESP]) were submitted from LA medical centers (10) located in (no. of centers/no. of strains): Argentina (2/304), Brazil (4/938), Chile (2/423) and Mexico (2/468) during 2005-2009. Strains were susceptibility (S) tested against daptomycin and various comparator agents by CLSI broth microdilution methods and the Mueller-Hinton broth was supplemented to 50 μg/ml of calcium for daptomycin tests.

Results: The majority of isolates were from bloodstream (31%) and skin and skin structure infections (22%). Overall, 3.7% of EF and 39.6% of EFM were vancomycin-resistant (VR). The majority of VR enterococcal (VRE) strains were teicoplanin-resistant (VanA phenotype). VR-EF/VR-EFM rates were (%): 0.8/34.0, 7.8/71.9, 0.3/30.3 and 0.0/0.0 in Argentina, Brazil, Chile and Mexico, respectively. Overall VR-EF rates remained relatively stable overtime, but VR-EFM increased from 16.2 in 2005 to 43.8% in 2009. Daptomycin was very active against EF (MIC50/90, 1/1 mg/ml), EFM (MIC50/90, 2/2-4 mg/ml) and ESP (MIC50/90, 1/2 mg/ml), independent of VR or phenotype (100.0% S; see Table). Linezolid was active against 99.9% of strains (2 non-S strains; 1 EF and 1 EFM, both from Brazil). Only 73.4% of EFM were quinupristin/dalfopristin-S.

Conclusion: VRE, especially VR-EFM, are rapidly increasing in some nations in LA. Daptomycin was very active against enterococci isolated in LA medical centers and resistance to vancomycin and other antimicrobial agents did not adversely influence its potency.
Antibiotic resistance of *Streptococcus pneumoniae* in children with acute otitis media treatment failure

**B. Zielnik-Jurkiewicz, A. Bielicka**  
Children's Hospital, Warsaw, Poland

**Background:** Acute otitis media (AOM) is an acute inflammation of the middle ear caused in about 70% of cases by bacteria. An increasing antibiotic resistance of bacteria is the main cause of failures during treatment of acute otitis media. This problem has been described with increasing frequency over the past two decades.

**Methods:** A prospective study performed in the ENT Department in Warsaw between October 2006 and October 2009. An examined group consisted of 157 children aged from 6 months to 17 years, admitted to the ENT Department because of unsuccessful oral antibiotic therapy of AOM. In all the children the myringotomy and/or tympanostomy tube insertion and/or mastoidectomy were performed and the middle ear fluid samples were collected to bacteriological examinations

1) Bacteriological analysis of material isolated from the middle ear in children with AOM treatment failure.

2) Determination of antibiotic susceptibility of *Streptococcus pneumoniae*.

**Results:** The positive cultures were obtained in 104 patients (66.2%). *Streptococcus pneumoniae* (39.69%), *Staphylococcus aureus* (16.03%), *Haemophilus influenzae* (8.4%) and *Pseudomonas aeruginosa* (8.4%) were the most frequently found bacteria in the culture of the middle ear fluid. 65.4% of *Streptococcus pneumoniae* strains were penicillin-intermediate-resistant or penicillin-resistant.

**Conclusion:** *Streptococcus pneumoniae* is the most frequently isolated pathogen from the middle ear in children with AOM not responding to empirical antibiotic treatment. In these cases antibiotic resistance of *Streptococcus pneumoniae* is higher than in children without earlier antibiotic treatment. Microbiological identifications and antibiotic resistance determination gives possibility of an effective antibiotic treatment in children with AOM oral treatment failure.
Background: Post-transplant infections by antibiotic-resistant bacteria (ARB) are increasing in prevalence because of the wide use of broad-spectrum antibiotics. At our center, the perioperative prophylaxis for liver transplant recipients consists of cefoperazone/sulbactam and ampicillin. When the recipient develops signs of infection, the initial antibiotics are empirically replaced with meropenem and vancomycin. We analyzed the epidemiology of ARB to assess the appropriateness of replacing empirical antibiotics during the first month after liver transplantation.

Methods: We reviewed 88 patients who had undergone living donor liver transplant between January 2006 and September 2007.

Results: Two hundred and seventy-six strains of bacteria were microbiologically documented in 75 liver transplant recipients. The most common bacteria was *Staphylococcus aureus* (27%), followed by coagulase-negative staphylococci (CNS, 20%), *Enterococci* species (18%) and *Klebsiella* species (7%). Our data on the resistance pattern showed that 87.8% and 71.4% of the *S. aureus* and CNS were resistant to methicillin, respectively; 88% of the *Enterococcus* species were resistant to ampicillin and 24% to vancomycin; and 62% of all enteric gram-negative bacilli (GNB) were resistant to 3rd generation cephalosporins. No strains of meropenem-resistant GNB were detected. Only one glucose non-fermentative GNB was resistant to all antibiotics except aminoglycosides and colistin.

Conclusion: Mainly methicillin-resistant gram-positive bacterial strains, including *S. aureus* and CNS, can colonize in early period after transplantation. According to the epidemiologic data on the high prevalence of antibiotic-resistant organisms, the empirical treatment regimen at our center is considered as appropriate. However, shifting down to less-broad-spectrum antibiotics after the pathogens are confirmed is essential to lowering the rate of ARB.
Methicillin-resistant strains of *Staphylococcus aureus* and coagulase-negative *Staphylococcus* from clinical isolates at Felege Hiwot referral hospital, North Western Ethiopia

**B. Beyene**
Addis Ababa university, School of public health, Bahir Dar, Ethiopia

**Background:** Methicillin-resistant staphylococci are one of the major causes of nosocomial infection. The aim of this study was to determine Methicillin-resistant strain of staphylococci and its antibiotic resistance.

**Methods:** Across-sectional study was done on 162 S.aureus and 59 cogulase-negative staphylococci from 151 inpatients and 70 outpatients at Felege Hiwot Referral Hospital from 1st April to June 31, 2006. Methicillin resistance was identified by detecting penicillin binding protein 2’ (PBP2’) using PBP2’ Latex (oxoid Ltd, Basingstoke, UK) and cefoxitin (30ug) disc-diffusion method.

**Results:** The isolation rate of methicillin-resistant staphylococci (MRSA and MRCoNS) was found to be 55% and 78% respectively. MRSA and MRCoNs showed higher rates of multi-drug resistance against other commonly prescribed antibiotics such as penicillin G 89 (100%), ceftriaxon 85 (99.5%) tetracycline 80(89.88%), erythromycin 69 (77.5%), ciprofloxacin 67(75.3%) and gentamicin 63 (70.78%) compared to methicillin-susceptible staphylococci (MSSA & MSCoNS). The overall prevalence of MRSA and MRCoNS was 59.7% of which 72.8% was from inpatients and 31.4% outpatients.

**Conclusion:** High rates of MRSA and MRCON with its multi-drug resistance will pose a big challenge in therapy of MRSA and MRCON infection, thus, empirical therapy of this infection should include glycopeptid drugs and further studies on prevention and control of MRSA and MRCoNS infection in hospital need to be conducted.
Traditional dairy products of Iran effective against antibiotic resistance bacteria
M. tajabady ebrahimi¹, P. Jafary²
¹ Islamic Azad University, Tehran, Iran, Islamic Republic of, ² Islamic Azad University, Arak, Iran, Islamic Republic of

Background: The relationship between dairy foods and health effects has been investigated for many years. During recent years, numerous studies have been undertaken to obtain scientific evidence for beneficial effects of fermented dairy products containing specific probiotic strains. Unlike antibiotics, which means “to destroy life,” probiotics literally means “life giving.” The varied climate in Iran makes the production of a wide range of dairy products possible. The aim of this study was the isolation and identification of new potential probiotic lactobacilli from traditional Iran dairy products.

Methods: The isolates were screened for their potential to serve as a probiotic, including acid and bile resistance, intestinal colonization, assessment colonization on Caco-2 cell line antagonistic activity by production of antimicrobial compounds or pathogen exclusion.

Results: Screening of acid and bile tolerant strains from 14 different samples led identification of 20 isolates of Lactobacillus spp. Adhesion assay on Caco-2 cells line lead to the selection of 8 strains with high adhesion. These isolates were further evaluated for antagonistic activities against antibiotic resistance E. coli, S. aureus and L. monocytogenes, and also competition and competitive exclusion of pathogen bacteria to Caco-2 cells. All isolates show antagonist activity against at least one of indicator bacterium. The degree of competition and competitive exclusion of pathogen adhesion was, strain-dependent. Most promising strains identified based on 16S rDNA sequence. L. plantarum, L. brevis, L. casei isolated from traditional Iran yogurt and cheese exhibited both high antagonist activity and competitive exclusion of pathogen bacteria together.

Conclusion: Lactobacillus originally isolated from traditional fermented dairy products are probably the most suitable candidates for inclusion as probiotics into these foods, because they are well adapted to the conditions and may therefore be more competitive than probiotics from other sources. These results suggested that traditional dairy products of Iran have potential as functional foods and might also be good candidates to use effective in prevention of infection with antibiotic resistance bacteria.
Antimicrobial susceptibility results of *Staphylococcus aureus* bacteremic isolates from the Tigecycline Evaluation and Surveillance Trial (T.E.S.T.) 2004-2008

D. Amsterdam¹, G. Coombs²

¹School of Medicine, University at Buffalo/ECMC, Buffalo, NY, USA, ²Royal Perth Hospital, Perth, WA, Australia

**Background:** Antimicrobial susceptibility surveillance is an important strategy in understanding the evolution of antimicrobial resistance and providing data to assist optimizing empirical therapy. The Tigecycline Evaluation and Surveillance Trials (T.E.S.T.) established in 2004 is a global surveillance study designed to compare the in vitro activity of tigecycline to a panel of 9 antimicrobials.

**Methods:** During the period 2004-2008, 3,927 *S. aureus* bloodstream isolates (BSI) were collected from T.E.S.T. participating centers throughout the world. Of the total, 3,629 (92.4%) were from patients in non-ICU, or ICUs and 3,544 (90.2%) were aged 18-64 or ≥65 years old. Minimum inhibitory concentrations (MICs) of the antimicrobials were determined locally by participating centers using the Clinical Laboratory Standards Institute broth microdilution method with either Microscan panels (Dade Behring) or Sensititre plates (TREK Diagnostic Systems). BSIs were tested against the following antimicrobials: penicillin; amoxicillin/clavulanic acid; piperacillin/tazobactam; ceftriaxone; imipenem; meropenem; levofloxacin, linezolid; vancomycin; minocycline; and tigecycline.

**Results:** Overall methicillin resistance (MRSA) rates are somewhat higher in patients treated in ICUs compared with the non-ICU setting (45.5% vs 38.2%, respectively) and in patients ≥65 years of age compared with those aged 18-64 (44.8% vs 37.0%, respectively). Of the 3,927 *S. aureus* bloodstream isolates submitted to T.E.S.T. (61.0%) are methicillin susceptible (MSSA) and 1,530 are MRSA. All MSSA and MSRA isolates are susceptible to tigecycline (MIC90 0.25 mg/L; MIC100 0.5 mg/L) and linezolid (MIC 4 mg/L; MIC100 4 mg/L). Most (99.9%) MSSA and MRSA isolates are susceptible to vancomycin with only three isolates of MSSA and one of MRSA requiring an MIC of 4 mg/L. While only 17.6% of isolates of MSSA are susceptible to penicillin, the staphylococcal beta-lactamase-stable compounds studied are generally highly active (98.8%-100%) against these strains. The most obvious difference in susceptibility between MSSA and MRSA is with the fluoroquinolone, levofloxacin. Most (95.3%) MSSA isolates are susceptible to this compound, compared with only 14.4% of MRSA.

**Conclusion:** With the exception of methicillin resistance, no major differences are evident when comparing susceptibility of MSSA and MRSA BSIs from non-ICU and ICU settings or isolates recovered from younger (18-64 yo) and older (>65 yo) patients with the exception of levofloxacin against MRSA.
Survey of antibiogram pattern and prevalence of _lactamase in isolated Staphylococcus epidermidis strains staff hands and hospital surfaces

S. jalalpoor
esfahan university, esfahan, esfahan, Iran, Islamic Republic of

**Background:** Skin surface can contribute as a reservoirs of potential pathogen and is important in chain of infection. Skin Surfaces bacteria have low potential to spread. Staff hands have more contact with hospital surfaces, especially with surface and are more eligible source for transmission bacteria from surfaces. Nosocomial infections are important problem in all hospitals. Coagulase negative Staphylococcus is one of the most popular cause of nosocomial infections and _lactam antibiotics, Vancomycin and Erythromycin are selective antibiotic for treatment of these infections

**Methods:** In this experimental study which was performed during 2007-2008 years, we studied 274 bacteria (194 sample from hospital surface and 80 sample from staff hand). Staff hands, samples collected whit Finger Print method and Environmental samples were collected, with swab in TSB from high and low contact surfaces. Identification of Bacteria, were performed with microbiological methods: staining, chemical test, use of differential and selective media, and _lactamase product was performed according to acidometric method and Antibiogram pattern was performed with Kirby Bauer method

**Results:** According to the acidometric Results 73.9% of strains produced _lactamase and according to antibigram pattern our results also showed that 67.3%, 19.1%, 24.7%, 13.3%, 44.6%, 19.4%, 3.4%, 42.9% and 17.7% of Staphylococcus epidermidis strains were resistant to Penicillin G, Ampicillin, Cephotaxime, Gentamicin, Erythromycin, Clindamycin, Vancomycin, Co-trimoxazol and Tetracycline

**Conclusion:** According to high prevalence of _lactamase and resistance of Staphylococcus epidermidis strains to _lactam antibiotics and Erythromycin, and also sensitivity of this bacteria to into Vancomycin, we suggest Vancomycin instead of Penicillin G.
Antimicrobial resistance in patients with nosocomial pneumonia in Yaroslavl (Russia)

S. Palyutin¹, S. I. Monakhova², S. N. Angelova³, E. G. Ershova³, I. E. Zilber⁴, A. S. Petrochenko⁴

¹Yaroslavl State Medical Academy, Yaroslavl, Russian Federation, ²Clinical Infection Hospital #1, Yaroslavl, Russian Federation, ³Clinical Infection Hospital #1, Yaroslavl, Russian Federation, ⁴Clinical Hospital #2, Yaroslavl, Russian Federation

Background: Patients with nosocomial pneumonia are a major medical and social problem for hospitals due to high lethality, complexity of choice of antimicrobial therapy, and large cost of treatment. The aim of the study was to determine resistance (R) level to major pathogens of nosocomial pneumonia.

Methods: Pathogen isolates were collected from patients hospitalized in various departments of Yaroslavl hospitals in 2007, including ICUs. Susceptibility (S) was interpreted to principal antimicrobial drugs according to current CLSI standard by disk-diffusion. Data were analysed according to beta-lactamase status [positive (+) and negative (-)] for E.coli, Klebsiella spp., and Enterobacter spp.

Results: 105 isolates were gathered from 92 patients with nosocomial pneumonia. In there samples were found: Ps. aeruginosae – 50 (47,6%) with medium resistance – 84%, resistance to imipenem was found in only 12% of isolates; Acinetobacter spp. – 31 (29,5%) with medium R – 84%, S (imipenem, cefoperasone/sulbactam) – 81%, S (imipenem, meropenem) -19%; E.coli – 9 (8,6%), R – 78%. Resistance to E.coli was due to extended spectrum beta-lactamases production (ESBL+) in 57% of isolates, all of which were susceptible to imipenem and cefoperasone/sulbactam; isolates with AmpC+ production constituted 43%, S (imipenem, meropenem) – 100%. Also were found: Klebsiella spp. – 8 isolates (7,6%) with medium R – 63%, due to ESBL, S - (imipenem, meropenem, cefoperasone/sulbactam) – 100%; Enterobacter spp. – 3 (2,8%), R – 33% (AmpC+), S (imipenem, meropenem) – 100%; St. maltophilia – 1 (0,9%). Overall rates of medium resistance level to major antimicrobial agents in respiratory isolates was 68,4%. It is worth noting that over 80% of Ps. aeruginosae isolates were panresistant.

Conclusion: Ps. aeruginosae and Acinetobacter spp. were predominant species isolated from patients with nosocomial pneumonia. There was found a rather high level of resistance to major pathogens, so antibiotics use city hospital needs to be optimized. Carbapenems and cefoperasone/sulbactam maintain reasonable activity against nosocomial pneumonia pathogens.
Antibiotic resistance in patients with cystic fibrosis in Yaroslavl (Russia)

S. Palyutin¹, E. G. Ershova², I. E. Zilber³, S. I. Monakhova², S. N. Angelova², A. S. Petrochenko¹
¹Yaroslavl State Medical Academy, Yaroslavl, Russian Federation, ²Clinical Infection Hospital #1, Yaroslavl, Russian Federation, ³Clinical Hospital #2, Yaroslavl, Russian Federation

**Background:** Infectious complications of respiratory system are risk factor of poor prognosis in patients with cystic fibrosis. The aim of the study was to determine resistance (R) level to major pathogens of cystic fibrosis.

**Methods:** Pathogen isolates were collected from biological material (sputum, bronchoalveolar lavage) of patients in 2 pulmonary department of Yaroslavl city hospital in 2007 who were hospitalized for exacerbations of for planned treatment. Susceptibility (S) was interpreted to principal antimicrobial drugs according current CLSI standard by disk-diffusion.

**Results:** 62 isolates were taken from 58 patients with nosocomial pneumonia. In there samples were found: *Ps. aeruginosae* – 51 (82,3%) with medium level of resistance – 49%. 52% of these isolates were panresistant (multiresistant), 8% were susceptible to imipenem only, 14% - to imipenem and meronem. Other isolates found were: *E.coli* – 3 (4,9%), *St. maltophilia* – 2 (3,2%), *B. sepacia* - 2 (3,2%), *Klebsiella pneumonia* – 1 (1,6%). These microorganisms were highly susceptible to antimicrobial drugs.

**Conclusion:** *Ps. aeruginosae* was predominant specie isolated from patients with cystic fibrosis. The found isolates were highly resistant which creates major problems for physicians concerning the choice of adequate empiric therapy for such patients.
Comparison between the anti-microbial effects of therapeutic pattern of ‘Ciprofloxacin, Ceftazidim’ with ‘Ceftazidim, Aminoglycosid’ in treatment of burns infection caused by \textit{Pseudomonas aeruginosa} in vitro

\textbf{M. M. Attarpour Yazdi}

Faculty of Medicine, Shahed University, Tehran, Iran, Islamic Republic of

\textbf{Background:} The most prevalent infection factor in burns wounds is \textit{pseudomonas aeruginosa}, which is better to use two kind drugs in remedying for prevention from drug resistance. Choosing a suitable pairing therapeutic pattern is necessary. This pattern is different based on the geographical areas and the new drugs being found in Iran, and susceptibility tests should be done as an adjunct to selection of suitable therapeutic pattern.

\textbf{Methods:} This research is a descriptive – analytical and prospective one which was conducted to determin antibiotic sensitivity against \textit{P. aeruginosa} of 195 specimens isolated from patients with burns wounds and hospitalized in Tehran city Motahari hospitals (after isolation and identification them) to ceftazidim, ceftriaxone, amikacin, gentamicin, ciprofloxacin and tobramycin.by using kirby – bauer disk diffusion and agar macro dilution methods according to CLSI advise in the year 2009

\textbf{Results:} The frequency distribution tables, diagrams, square and fisher exact tests (by applying EPI-Info version 6 computer programs) were used to describe and analyze the data. In the research, no significant statistical relationship was observed between the therapeutic pattern of “Ciprofloxacin; ceftazidim” with “ceftazidim; aminoglycosid” (P>0.05). Although in first group a more sensitivity was observed with the second group (%54.5 to %48.5). The most rate of antibiotic sensitivity was observed to ceftazidim and then ciprofloxacin.

\textbf{Conclusion:} With respect to the above-mentioned results and also drugs resistance, etc, use the therapeutic pattern of “ciprofloxacin; ceftazidim” for treatment of burns infection caused by \textit{P.aeruginosa} (Especially for the people with high percentage scalding) is recommended.
Isolation and characterization of a probiotic bacillus with antibacterial effects against human and poultry common diseases

P. Jafari¹, M. Tajabady Ebrahimi²
¹Islamic Azad University, Arak, Iran, Islamic Republic of, ²Islamic Azad University, Tehran, Iran, Islamic Republic of

Background: Cost effective control of human and poultry common diseases remains a high priority for all sectors of the medicine. Spores from a number of different Bacillus spp. are currently being used as probiotics in maintaining human and animal health. Bacillus strains in the form of spores have been shown to reach the target intestine successfully.

Methods: The isolation of 237 Bacillus spp. isolates from the gastrointestinal tract of poultry carried out by heat treatment of fecal material from broiler chickens followed by aerobic plating. All of the isolates were characterized according to their morphological, physiological, and biochemical properties. Bacterial spores were characterized and selected for potential attributes (acid and bile tolerance, colonization and antimicrobial activity) that could account for their claimed probiotic properties. Importantly, selected isolates were susceptible to most of the antibiotics tested, arguing that it would not act as donors for resistance determinants if introduced in the form of probiotic preparations.

The experiments showed that 5 isolates could adhere to Caco-2 cell line and have high affinity for adhesion. These selected strains were an effective competitive exclusion agent to control infectious causes such as Escherichia coli spp and salmonella spp.

Results: One of the isolates had a very good probiotic properties and exhibit antimicrobial activity against a broad spectrum of bacteria, including E. coli, L. monocytogenes, S. aureus, S. pyogenes, S. typhi, S. paratyphi A and B, and V. cholerae. The produced bacteriocin was detected in the culture supernatants of stationary-phase cells. Bacteriocin was stable at 80°C, but the activity was lost when the temperature reached 88°C. It was resistant to the proteolytic action of trypsin and papain, but sensitive to proteinase K and pronase E. Bacteriocin activity was observed in the pH range of 4 to 9. Bactericidal activity was insensitive to organic solvents and nonproteolytic enzymes.

Conclusion: Our results demonstrated that this strain have a good probiotic potential and could inhibit most of the important human and poultry common diseases such as salmonella. So after safety assessment it can be used as probiotic for human or poultry industries.
Prevalence of penicillin resistance and alterations in \textit{pbp2b} gene in clinical isolates of \textit{Streptococcus pneumoniae} in Iran

\textbf{M. oskoui}, S. nobari, F. rahmati ghezelgeh, B. shaghaghi

pasteur institute of Iran, Tehran, Tehran, Iran, Islamic Republic of

\textbf{Background}: \textit{Streptococcus pneumoniae} remains one of the most important bacterial pathogens associated with pneumonia, meningitis, sinusitis, and otitis media. \textit{\beta}-Lactam resistance in clinical pneumococci is mediated by altered PBPs, specifically PBP2b. The purpose of this study was to determine the rates of penicillin and other antibiotics resistance in clinical strains of \textit{Streptococcus pneumoniae} and analyse occurred mutations in \textit{pbp2b}.

\textbf{Methods}: After biochemical testing of all 54 \textit{S. pneumoniae} isolates, Susceptibility testing was done by disc diffusion method for oxacillin, erythromycin, cefotaxime, cotrimoxazole, Ampicillin, Vancomycin and tetracycline. MIC was determined by broth micro dilution method for penicillin. \textit{Pbp2b} gene was amplified by PCR and sequenced.

\textbf{Results}: From all 54 isolates, 44.4\% (24 isolates) were penicillin intermediate, 25.9\% (14 isolates) were penicillin resistant, 51.9\% (28 isolates) were \textit{cotrimoxazol} resistant, 16.6\% (9 isolates) were erythromycin resistant, 3.7\% (2 isolates) were \textit{Cefotaxime} resistant, and 18.51\% (10 isolates) were tetracycline resistant. all of the penicillin resistant and most of the penicillin intermediate isolates had mutations in catalytic regions of PBP2b.

\textbf{Conclusion}: Our results showed the increase of penicillin resistance in strains of \textit{Streptococcus pneumoniae}, However prevalence of multiple resistant strains revealed a crisis in treatment of pneumococcal infections. Our investigation demonstrates that alterations in PBP2b tended to parallel with reduced susceptibility to penicillin. We have shown that susceptibility of \textit{Streptococcus pneumoniae} to \textit{\beta}-Lactams can generally estimated by determining alterations in PBP2b gene.
The changing epidemiology and antibiotic resistance profiles of organisms causing bacteraemia in a central London teaching hospital

S. Datta\textsuperscript{1}, S. Lee\textsuperscript{2}
\textsuperscript{1}UCL, London, United Kingdom, \textsuperscript{2}University College London Hospital, London, United Kingdom

Background: Empirical antibiotic therapy in critically unwell patients must be guided by a knowledge and thorough understanding of the epidemiology and antibiotic resistance profiles of the common causative organisms encountered. It is essential to stay aware of changes in the pattern of bacterial pathogens detected, and tailor guidelines to account for changes in antibiotic resistance, across a hospital site and within specialist units.

Methods: We reviewed the causative organisms and resistance profiles for all positive blood cultures at a Central London Teaching Hospital from 2000-2009. Samples for a single organism within a 14 day period were considered a single episode of bacteraemia. Positive cultures for organisms such as coagulase negative \textit{Staphylococci} were excluded as likely contaminants, and the ward source of such pathogens was noted. Episodes of bacteraemia that were considered likely to be significant were also reviewed by origin (e.g. Intensive care, Emergency Department, Oncology).

Results: The most common causes of bacteraemia including \textit{Escherichia coli}, \textit{Staphylococci} spp. and \textit{Klebsiella} spp. were relatively stable over time. There were significant differences between the most common pathogens isolated from patients in specific specialities such as Oncology and Intensive care.

Over time, significant changes in microbial resistance profiles were observed that reflect those documented in the medical literature.

Conclusion: These results show the importance of continuing to monitor the local epidemiology of microbial infection and the resistance profiles of locally prevalent bacterial strains.
Comparison of antibiotic resistance patterns in clinical isolates of *Streptococcus pneumoniae* between 1998 to 2009 in Iran

S. nobari¹, **M. oskoui**², F. rahmati ghezelgeh², N. amirmozaffari¹

¹science and research branch, Islamic Azad university, Tehran, Iran, Islamic Republic of,
²pasteur institute of Iran, Tehran, Tehran, Iran, Islamic Republic of

**Background:** *Streptococcus pneumoniae* is a common etiologic agent of serious invasive infections, with high morbidity and mortality in children and adults, such as meningitis, septicemia, and pneumonia. The evolution of strains of *S. pneumoniae* resistant to penicillin and other antimicrobial agents has created difficulties worldwide in selecting an appropriate chemotherapeutic agent.

**Methods:** After biochemical testing of all 44 *S. pneumoniae* isolates such as _hemolysis on chocolate agar, negative catalase test, bile solubility, optochin susceptibility_. Susceptibility testing was done by disc diffusion method for antibiotics included oxacillin, erythromycin, cefotaxime, cotrimoxazole, vancomycin and tetracycline discs and MIC were determined by broth micro dilution method for penicillin. PFGE was done for all isolates.

**Results:** From all 44 isolates, 77.2% (34 isolates) were oxacillin resistant, 54.5% (24 isolates) were cotrimoxazol resistant, 16% (7 isolates) were erythromycin resistant, 4.5% (2 isolates) were Cefotaxime resistant, 9.1% (10 isolates) were tetracycline resistant and 0% (0 isolate) was vancomycin resistant. Eleven percent (5 samples) of *S. pneumoniae* isolates was penicillin resistant with MIC≥2µg/ml and 70.4% (31samples) were penicillin intermediate with 0.1≤ MIC≤ 1µg/ml. We have seen an increasing level of penicillin resistance (MIC≥3.2µg/ml) in the newest isolates. Resistant isolates showed different patterns.

**Conclusion:** The results showed that the antibiotic resistances in *S. pneumoniae* profiles have been changing in recent years in Iran and antibiotic resistance has become a major concern. Furthermore, we predict that emergence of resistance will prove to be a major drawback with increased use, as has been seen for other antibacterial agents.
Anti-fungal activity of thymoquinone and amphotericine B against *Aspergillus niger*

**A. alqurashi**
King Faisal university, Dammam, Saudi Arabia

**Background:** Activity of *Nigella sativa* oil, ether extract and some of its active principles have been reported in the literature against a number of bacteria and *Candida albicans*. In the present study the effect of thymoquinone, an active principle of *N. sativa* was determined against *Aspergillus niger* ATCC 16404. The organism was grown on dermasel agar containing 0.062, 0.125, 0.25, 0.5, 1.0 & 2.0 mg/ml of thymoquinone and dermasel agar alone as a control. There was 16.7, 36.2, 47.3, 67.8, 90.6 & 100% inhibition of growth of *Aspergillus niger* with these concentrations after 96 hours of incubation. Growth on the control plate after 96 hours was considered as 100%. Similarly there was 52.3, 65.1, 76.7, 81.6, 84.7, 85.6, 90.7 & 92% inhibition of growth with 0.007, 0.015, 0.031, 0.062, 0.125, 0.25, 0.5, & 1.0 mg/ml of amphotericin B.

**Methods:** Growth and identification of *Aspergillus niger*: A standard strain of *Aspergillus niger*, ATCC 16404, was cultured on dermasel agar (Oxoid). The plates were incubated at 30°C for 96 hours. The growth was identified as *Aspergillus niger* by colonial morphology and by microscopy after staining with lactophenol cotton blue.

1- Preparation of Reagents & Media
2-Susceptibility Testing

**Results:** Percentage inhibition of growth of *Aspergillus niger* ATCC 16404 with different concentrations of thymoquinone and amphotericin B after 96 hours

**Conclusion:** *Aspergillus* species are the most common mold causing severe invasive infections in immunocompromized individuals 10-12. Fluconazole and ketoconazole are inactive against *Aspergillus* 20-22. Currently amphotericin B is most widely used against aspergillus infection, but failure of amphotericin B treatment against invasive aspergillosis has also been reported. Overall, the response to amphotericin B remains poor, with a favourable outcome in only 30–40% of treated patients 23, 24. So a newer effective drug is required for invasive aspergillosis.
Background: *Staphylococcus aureus* is an important pathogen in humans and is implicated in a wide variety of infections. The introduction of benzylpenicillin into clinical use in the 1940s had a dramatic effect on mortality rates due to this organism, but shortly thereafter, resistant strains began to emerge; methicillin was introduced to address this problem. Since early 1960s, methicillin-resistant *Staph. aureus* (MRSA) has evolved as one of the most important public health problems worldwide. Although Vancomycin, Teicoplanin, and Linezolid have proved effective in the treatment of MRSA infections, it is necessary that susceptibility to these drugs be constantly monitored. Information on drug susceptibility profile of MRSA in Eastern Nigeria is sketchy, and raised the need for this report.

**Methods:** Twelve properly identified isolates of MRSA (4 dog-associated, 6 human-associated, 2 currency-associated) and 4 human-associated methicillin susceptible *Staphylococcus aureus* (MSSA) were investigated for possible Vancomycin, Teicoplanin and Linezolid resistance, by agar diffusion technique, using "MIC evaluator" strips of Oxacillin, Vancomycin, Linezolid, and paper disc of Teicoplanin (OXOID, England) in Mueller–Hinton agar. The tests were performed by standard methods, which included appropriate controls. Minimal inhibitory concentrations (MICs) and zone sizes were interpreted according to standard criteria.

**Results:** Results showed that Oxacillin MIC ranged from 0.25 to 32 µg/ml, with MIC90 of 16 µg/ml. On the contrary, Vancomycin MIC ranged from 1 to 4 µg/ml, with MIC90 of 4 µg/ml. Linezolid recorded an MIC range of 2–4 µg/ml and MIC90 of 4 µg/ml. Two dog-associated isolates showed the highest oxacillin resistance (MIC =32 and 16 µg/ml, respectively). Minimal inhibitory concentration of Vancomycin or Linezolid did not depend on the source of isolation, nor on Oxacillin MIC for the organism. All the isolates were susceptible to Teicoplanin.

**Conclusion:** Results showed that there is decreasing vancomycin susceptibility among isolates of *Staph. aureus* in Nigeria. It is, therefore, suggested that active microbiological surveillance and careful monitoring of anti-MRSA therapy be undertaken regularly in this region. Results also tend to suggest that indiscriminate and uncontrolled use of antibiotics in animals could be of dire public health consequences.
Ceftriaxone versus chloramphenicol for treatment of acute typhoid fever. Pattern of Salmonella typhi drugs

T. Hifnawy¹, O. M. Hammad², S. Zaki³, A. M. Abdel Baky⁴, A. Afifi⁵, M. A. El Tantawi⁶, N. I. Girgis⁷

¹Faculty of Medicine- Beni Suif University, Cairo, Egypt, ²Faculty of Medicine Beni Suif University, 11362, Egypt, ³Faculty of Medicine, Al Azhar University,, Damietta, Egypt, ⁴S-National Hepatology and Tropical Medicine Research Institute,, Cairo, Egypt, ⁵Abbasia Fever Hospital , Cairo, Egypt, ⁶Abassia Fever Hospital., Cairo, Egypt, ⁷NAMRU3, Cairo, Egypt

**Background:** Typhoid fever is a global health problem, with an estimated 20 million cases and 700,000 deaths annually. In Egypt, since the beginning of the 1980s, there has been an increase in the prevalence of multidrug resistance to the first line antimicrobials used in the treatment of the disease such as chloramphenicol, ampicillin and trimethoprim-sulfamethoxazole (TMP-SMX), and thus other drugs, the fluoroquinolones and third generation cephalosporins, had to be evaluated for their efficacy in the treatment and their side effects.

**Methods:** A phase IV open label, prospective, randomized clinical trial study was implemented in the period between March 2007 and June 2008. Fifty two patients with positive blood culture for S. typhi were included in this study.

**Results:** They were 32 (62%) males and 20 (38%) females ranging in age from 3 to 47 years (mean±SD 22±8.5 years). Drug sensitivity tests showed that 4 (8%) of Salmonella typhi isolates were resistant to chloramphenicol and 18 (35%) and 21 (40%) isolates were resistant to ampicillin and TMP-SMX respectively. Two (4%) isolates were resistant to chloramphenicol, ampicillin and TMP-SMX. No isolates were resistant to ciprofloxacin or ceftriaxone. Twenty seven (52%) patients were treated with chloramphenicol and twenty five (48%) patients were treated with ceftriaxone. All patients were cured. The mean time (mean±SD) for patients to become afebrile was 3.3±1.2 days for ceftriaxone and 5.8±1.2 days for chloramphenicol. In patients treated with ceftriaxone the time taken to become afebrile was shorter as compared to those treated with chloramphenicol (P value= 0.0001 95% CI= 1.831-3.169).

**Conclusion:** From this study, it can be concluded that ceftriaxone was associated with a significantly shorter time of defervescence making it the drug of choice for treatment of severe and complicated cases of typhoid fever.

There appears to be a marked reduction of the prevalence of MDR Salmonella typhi isolates and marked increase in the susceptibility of these isolates to chloramphenicol, returning it to be one of the drugs that could be used in the treatment of acute typhoid fever in most of the underdeveloped parts of the world where the disease is endemic and medical resources are limited.

No drug resistance to ceftriaxone and ciprofloxacin was reported after many years of using them for treatment of acute typhoid fever.
Final Abstract Number: ISE.035
Session: International Scientific Exchange

Efficacy of seventeen essential oils as antibacterial agents against three strains of methicillin-resistant *Staphylococcus aureus* (MRSA) and methicillin-resistant *Staphylococcus epidermidis*

**P. Sharma, J. P. Mack, A. M. Lavin**
Monmouth University, West Long Branch, NJ, USA

**Background:** Methicillin-resistant *Staphylococcus aureus* (MRSA) is a type of bacteria that concerns hospitals and healthcare facilities because of its resistance to beta-lactam antibiotics and lethal effects on those with compromised immunities. Community-associated MRSA (CA-MRSA) is a type of MRSA which endangers the general public. The CA-MRSA strain (USA 300-ATCC-BAA1556) causes many skin and soft tissue infections and a very serious form of pneumonia that often follows a bout of the flu. MRSA (A252-ATCC-BAA-1720) is a hospital acquired (HA-MRSA) strain; MSSA (476 ATCC-BAA-1721) is a virulent community-acquired strain; and *Staphylococcus epidermidis* (RP62A-ATCC-359840-S) is the infectious bacteria associated with intravascular devices such as shunts and heart valves, as well as prosthetic joints, catheters and large wounds.

**Methods:** Previous research with 54 essential oils (Mack *et al.*, NJ Academy of Science, Vol. 44, p. 21, 1999 and Vol. 45, p. 17, 2000) clearly demonstrated excellent antimicrobial activity. Seventeen of those oils were selected to be tested against MRSA and *Staphylococcus epidermidis* to determine their antibacterial activity. Plates with Mueller-Hinton II medium were overlaid with the four strains of methicillin resistant bacteria [A252 -ATCC-BAA-1720, 476 ATCC-BAA-1721, USA 300-ATCC-BAA1556, RP62A-ATCC-359840-S]. Sterile paper discs (6mm) saturated with 0.05 mL of each of the seventeen essential oils and discs containing the antibiotic standard vancomycin (30 _g) were positioned on the plates. Diameters of zones of inhibition were measured after 24 hours of incubation at 37°C.

**Results:** Results were compared to the antibiotic standard vancomycin; nine of the seventeen oils were equally effective or more effective for MRSA A252; thirteen showed greater antibacterial activity for MRSA 476; nine were more effective in inhibiting the growth of MRSA RP62A; and thirteen were as effective or more effective for USA 300.

**Conclusion:** This study shows that certain essential oils can be useful as effective agents in helping to prevent the spread of both community and hospital acquired MRSA, as well as *Staphylococcus epidermidis*. 
Probiotic lectins of human probiotic bacteria: one more protective system in human

V. LAKHTIN, V. ALYOSHKIN, M. LAKHTIN, S. AFANASYEV, L. POZHALOSTINA, V. POSPELOVA
G.N. Gabrichevsky Research Institute for Epidemiology and microbiology, Moscow, Russian Federation

**Background:** Probiotic acidic and basic systems of lectins (aSL and bSL) of lactobacilli and bifidobacteria (aSLL, bSLL, aSLB, bSLB) originally isolated from human were identified, isolated, standardized and biological activities were investigated by us earlier. The aim was to study useful for human potential of probiotic SL including their action against pathogenic fungi (*Candida* and *Aspergillus*) isolated from patients.

**Methods:** Isolation from patients and growth of fungi on agar media were performed in dishes using standard procedures and conditions. Antagonistic activities were studied using disc method. Discs contained effective doses of SL or standard doses of antibiotic. Effects were registered using camera Samsung760.

**Results:**
1. Probiotic molecular soluble SL can be used in some cases instead of cell probiotic forms.
2. aSLB and aSLL were able to inhibit the growth of antibiotic-resistant *C. albicans* clinical strains.
3. In addition, these aSL were able to initiate late lysis of some *Candida* clinical strain films.
4. The level and the character of film degradation depended on clinical strain origin and type of SL.
5. *A. niger* colonies were grown later in the presence of *Candida*, and *Aspergillus* growth was limited by the regions of preliminary grown *Candida* films.
6. SL inhibition regions in dishes for *Aspergillus* were the same as for *Candida*. Within these regions SL prevented *Candida*-based *Aspergillus* growth.
7. Synergism between SL types or between SL and antibiotic were observed.
8. During dishes storing, cold stress improved antifungal effects.
9. Complex distinct types of symmetry for the final antifungal effects were established.
10. New approaches and algorithms for qualitative and quantitative values of SL fungistatic and fungicidic actions were developed.
11. The data can be used for development of *in vitro* model for screening of drugs preventing of coupled fungi parasitism. The drugs against *Candida* are of potential value against *Aspergillus*.

**Conclusion:** The data point out the potential usefulness of probiotic molecular soluble SL types in human organism, in addition to human probiotic bacteria as well as other human molecular soluble and receptor-based protective SL including cytokines, defensins, complement components, lymphocyte and dendrocyte receptors, protein hormones together with their receptors, etc. The ways of possible cofunctioning of protective systems in human are discussed.
Detection of extended spectrum \(-\)lactamases SHV & TEM in *Klebsiella pneumoniae* isolates from urinary tract infection by PCR.

**N. mansour samaei¹, M. rastegar², F. eftekhar², M. golalipoor³**

¹Golestan University of Medical Sciences, Gorgan, Iran, Islamic Republic of, ²Shahid Beheshti University, Tehran, Iran, Islamic Republic of, ³Golestan University, Gorgan, Iran, Islamic Republic of

**Background:** *Klebsiella* sp. is the second cause of urinary tract infections (UTI) after *E.coli*. Extended spectrum beta-lactam antibiotics are often used to treat these infections. Increasing resistance to beta-lactam drugs due to production of extended spectrum beta-lactamases (ESBL) has complicated the treatment of these infections. In this report, we examined the antibiotic resistance pattern of 50 clinical isolates of *k. pneumoniae* collected from two hospitals in Tehran. ESBL production was tested by the double disc synergy test (DDST) and presence of blaSHV & blaTEM genes were shown using specific primers and PCR.

**Methods:** Susceptibility to 10 antibiotics was determined by disk diffusion. Minimum inhibitory concentration (MIC) were determined to ceftriaxone, ceftazidime, cefotaxime, ceftizoxime and ciprofloxacin. ESBL production was also tested by the double disc synergy test (DDST) using Cefotaxime, Ceftriaxone, Ceftizoxime & Clavolanic acid. Presence of blaSHV and blaTEM genes were shown using specific primers and PCR.

**Results:** The antibiogram results showed 96% resistance to amoxicillin, 80% to nitrofurantoin, 52% to amikacin, 46% to ceftazidime, 40% to ceftriaxone, 38% to cefotaxime, 36% to ceftizoxime, 32% to ciprofloxacin, 30% to imipenem and 28% to gentamicin. MIC results mostly confirmed the antibiogram findings for beta-lactam antibiotics. Of the 50 *Klebsiella* isolates, 15 (30%) produced ESBL, 21 (42%) carried the blaSHV gene and 18 isolates (36%) carried the blaTEM by PCR analysis. Five of the 21 isolates which carried the blaSHV gene and 5 of the 18 isolates which carried the blaTEM gene had the ESBL phenotype.

**Conclusion:** These results suggest that other ESBL producing genes may be responsible for the ESBL phenotype and this matter requires further investigation.
Bacterial isolates from blood cultures of children with suspected septicaemia and antimicrobial patterns in Korle-Bu Teaching Hospital, Accra-Ghana

R. OWUSU
Noguchi Memorial Institute For Medical Research, Accra, Ghana

**Background:** Septicaemia is the presence of disease-causing bacteria in the blood. The human body is host to a range of different bacteria that live harmlessly in various places such as the mouth, skin, bowel and genital tract. However, these bacteria can cause disease if they get into the bloodstream, particularly if a person is unwell or if their immune system isn’t strong enough to keep the invading organisms under control. Definitive diagnosis is by bacteriologic culture of blood samples to identify organisms and establish antibiotic susceptibility. These results are usually not available promptly. Therefore knowledge of epidemiologic and antimicrobial susceptibility pattern of common pathogens is useful for prompt treatment of patients.

**Methods:** Two hundred and twenty blood samples were analyzed from children aged 0–10 years, admitted into the children’s wards of Korle-bu Teaching Hospital, Accra, Ghana with features suggesting septicaemia. Samples were collected under aseptic conditions and cultured for aerobic and anaerobic organisms. Isolates were identified using bacteriologic and biochemical methods and antibiotic sensitivity determined by agar diffusion method using standard antibiotic discs.

**Results:** Bacteria was isolated in 31 (15%) of samples received. Of the 31 bacteria isolated, the most frequent isolates were *Salmonella typhi* 6 (19.35%), Salmonella spp, *Staphylococcus aureus*, *Streptococcus spp* and *Enterobacter sakazakii* was isolated in the following order (2:2:1:1) representing (6.06%, 6.06%, 3.03%, 3.03%). 21 (63.63%) were contaminants which were gram positive rods (10) and coagulase negative *Staphylococcus aureus* (11). Results showed high susceptibilities to Gentamycin (50%), Amikacin (25%), Ceftaxime (20%), Cefuroxime (3%), Chloramphenicol (2%). This study underscores the importance of septicaemia as a common cause of febrile illness in children and provides information on common prevalent aetiologic agents and drug susceptibilities of the commonest pathogens.

**Conclusion:** *Salmonella typhi*, *Salmonella spp* and *Staphylococcus aureus* were the leading causes of septicaemia in children admitted at korle-bu teaching hospital between June to September 2006. Gentamycin, Amikacin and Ceftaxime were shown to be effective against these pathogens.
Profile of resistance of Escherichia coli in the outpatients and patients hospitalized in the Clinic “Cira Garcia” from 2005 to 2008

C. Almanza¹, A. Izaguirre²
¹Clinica Central Cira Garcia, Havana, Cuba, ²Clinica Central Cira Garcia, Havana, Cuba

Background: Enterobacteriaceae, particularly Escherichia coli, are important pathogens responsible for urinary tract infections, the behavior of this family to antibiotics in recent years has changed with the increase of resistant strains. The aims of the study were to compare the changes in antibiotic susceptibility patterns of Escherichia coli strains isolated from outpatients and hospitalized patients that acquired urinary tract infections (UTIs), since 2005 to 2008.

Methods: In the Clinic “Cira Garcia”, health care is provided to travelers. There was carried out a study of Escherichia coli, strains that caused urinary tract infections in outpatients and hospitalized patients during the years 2005 to 2008. The susceptibility of each isolated pathogen to antibiotics was determined by the Kirby-Bauer disc diffusion method and by an automatic system (Diramic). Samples were processed in the Microbiology Laboratory according to standard procedures defined by the Clinical and National Laboratory Standards.

Results: 1046 tested samples showed growth of pathogens among which the most prevalent were E. coli (75.4%). High prevalence of resistance was observed against ampicillin and co-trimoxazole. Most of the isolates were resistant to 4 or more number of antibiotics in all the years. Imipenem was the antibiotic with the highest sensitivity, 94.1%. Imipenem susceptibility did not fluctuate during the analyzed period, while susceptibility to chloramphenicol, amikacin, norfloxacin, nitrofurantoin, ceftriaxone, and ciprofloxacin decreased. The most pronounced decline in susceptibility was Escherichia coli to gentamicin in 2005: 70.7% and 46.2% in 2008. Extended spectrum B lactamase production, was observed in 10.5% of the outpatients and 30.2% of the hospitalized patients in 2008.

Conclusion: This study revealed that E. coli was the predominant bacterial pathogen of UTIs in the Clinic “Cira Garcia”. Resistance to agents commonly used in UTIs oral treatments was extremely high. Imipenem was the most active drug. It also proved an increasing resistance to gentamicin and production of extended spectrum _β_-lactamase among the Escherichia coli strains, in the outpatients and the hospitalized patients.
Phage therapy: A potential option in the combat against bacterial infections

D. De Vos¹, T. Rose¹, S. Jennes¹, M. Vaneechoutte², M. Merabishvili¹, M. Zizi³, G. Verbeken¹, J.-P. Pirnay¹
¹Queen Astrid Military Hospital, Brussels, Belgium, ²UZGent, Ghent, Belgium, ³Vrije Universiteit Brussel, Brussels, Belgium

Background: Felix d'Herelle, one of the discoverers of bacteriophages was the first to propose “Phagetherapy”. It was further developed at the Eliava Institute in Tbilisi, Georgia and used in medical practice in all the previous Soviet Republics till now. In the Western world however antibiotics were developed and Phagetherapy was almost forgotten. Seen the antibiotic resistances worldwide, Phagetherapy is back as a potential complementary or alternative approach in the fight against infectious bacteria. The main problem is a lack of evidence based studies in accordance to modern standards as well as the lack of an adapted regulatory frame. Initiating studies in humans in accordance to actual ethical regulatory and scientific standards is difficult.

Methods: Nine acute burn wound patients with MDR *P. aeruginosa* and/or *S. aureus* burn wound colonization/infection as determined by bacterial routine culture were enrolled. Informed consent was available as well as a no-fault insurance. The antibacterial phagecocktail was applied by spraying the phage containing solution on the wound. The general trial setup was a comparison of the standard treatment for *P. aeruginosa* and *S. aureus* burn wound colonization with a phage treatment on one and the same colonized burn wound divided in two parts and monitored with tissue biopsies before application and after application (between 2 and 5 h after treatment start) by bacterial quantitative culture.

Results: No adverse events, clinical abnormalities or changes in laboratory test results that could be related to the application of phages were observed. This not optimal clinical trial protocol, realized in a clinically difficult setting, however, did not allow for an adequate evaluation of the efficacy of the phages.

Conclusion: We initiated and conducted a clinical safety study in burn patients approved by a leading medical ethical committee (VUB EC) and published the method for preparing the Phagetherapy cocktail in use as well as the ways to approach it in the regulatory context. Nevertheless, this study represents an essential and necessary step towards the eventual acceptance of phage therapy in our burn unit, and eventually worldwide.
Sensitivity and resistance of leg ulcers flora

M. Soloviy¹, B. Soloviy², V. Pidufali², O. Miklovshi², G. Kravets², T. Bedrylo²
¹Lviv National University of Medicine, Lviv Regional Veterans Hospital, Lviv, Ukraine, ²Lviv Regional Veterans Hospital, Lviv, Ukraine

Background: Diverse diseases can cause leg ulcers. Objectives of the study were to investigate the leg ulcers flora of different etiology, its sensitivity and resistance to antimicrobial agents.

Methods: 100 patients with leg ulcers of different etiology were prospectively divided into two groups. 1st group were 52 patients with leg ulcers due to the chronic venous insufficiency, mean age 67 years. Control 2nd group were 48 patients with leg ulcers of other etiology (atherosclerosis, diabetes, osteomyelitis), mean age 64 years.

Results: Gram-negative flora dominated over Gram positive in 1st group (57% to 43%). The most often pathogens were Protei spp. (vulgaris, mirabilis), Pseudomonas aeruginosa and Staph.spp. (aureus, epidermidis). These pathogens also dominated in 2nd group, but most often were Staph.spp. (aureus, epidermidis), Protei spp. (vulgaris, mirabilis) and Pseudomonas aeruginosa. Gram positive flora dominated over Gram negative (53% to 47%). These pathogens were most sensitive to fluoroquinolones: 88% in 1st group and 82% in 2nd. Then 75% and 73% were sensitive to cefataxim and 74% and 61% to gentamicin, accordingly.

Flora of the 1st group was most resistant to erythromycin (100%), ampicilin (78%) and penicillin. In the 2nd group 71%, 75% and 67% were noted accordingly.

Conclusion: Conclusion. Gram negative flora dominates over Gram positive in patients with leg venous ulcers and is present in nearly half of the ulcers of other different etiology. Thus, agents covering Gram negative flora should be used in these patients when indicated.
Is extended-spectrum β-lactamases producing *Escherichia coli* related to antibiotics resistance in Macao?

**Y. Lau**¹, Y. QianHong²

¹Macao Polytechnic Institute, China, China, ²Macao Polytechnic Institute, Macao, China

**Background:** Micoorganism resistance to multiple anti-infective agents has increased worldwide. These organisms threaten both optimal care of patients with infection as well as the viability of current healthcare systems. Macao is one of the most developed regions in Asia where is located on the southeast coast of China on the western bank of the Pearl River Delta. Macao was a Portuguese colony from the sixteenth century until 1999, and a crossroads between East and West. Macao's economy is based largely on tourism that received over 30 million from international countries. Overuse or misuse of third-generation cephalosporin is still a problem because of free medical service among majority residence in Macao. However, there is neither documented report as yet on antibiotic resistance nor multidrug resistance of Extended-spectrum β-lactamases (ESBLs) producing *Escherichia coli* (*E.coli*) for this special tourist site. Objectives: The objective of the present study was (1) to determine the antibiotic resistance of *Escherichia coli* in Macao, and (2) to compare the difference of antibiotic resistance rate between positive and negative ESBLs-producing *E.coli*.

**Methods:** A total of 209 nonrepetitive strains of *E. coli* was isolated from patients hospitalized at all hospitals in Macao. The standard disk diffusion method was used to assess for ESBL production in all the strains according to the recommendations of the Clinical and Laboratory Standards Institute (CLSI). Testing for antibiotic sensitivity was used by the Kirby-Bauer method with 17 types of antibiotics. Agar and Broth dilution methods were used for Minimum Inhibitory Concentration determination and the results were interpreted by using criteria of CLSI.

**Results:** Of 209 *Escherichia coli* strains, antibiotic resistance rate were 82.3%, 68.3%, 67.3%, 52.9%, 51.2% and 51.0% in Ampicillin, Amikacin, Tetracycline, Ciprofloxacin, Trimethoprim+Sulfamethoxazole and Gentamicin, respectively. There were statistically higher antibiotics resistance rate among ESBLs-producing *E. coli* in 14 of 17 antibiotics (0.01).

**Conclusion:** ESBLs may be an important reason of multidrug resistant in Macao. This first study was providing an initial picture of the problem in the hope of stimulating further research in the area.
Resistance pattern to antibiotics of Enterococcus and Staphylococcus species responsible for hospital acquired infections

L. M. Junie¹, M. Petrescu¹, A. Jodăi², D. Homorodean², S. KASTANAKIS², P. Karagianni⁴, E. Papadomanolaki³, P. Chatziliyas³, M. Gatzima³, A. Tsataraki³, G. Aleuraki³, A. Tsouri³, C. Bobo_³

¹University of Medicine and Pharmacy, 43200, Romania, ²Leon Daniello Pneumoftiziological Hospital, Cluj Napoca, Romania, ³St. George General Hospital, Chania, Greece, ⁴St. George General Hospital, Chania, Greece

Background: Nosocomial infections represent a major problem of public health worldwide. With a high frequency in the etiology of these infections are S.aureus, CNS and Enterococcus species. The aim of our study was to register enterococcal and staphylococcal infections in hospitals, to establish the resistance pattern of Enterococcus and of S. aureus strains.

Methods: Patients with bloodstream infections were monitored and blood samples were collected (Bact-Alert system) in General Hospital of Chania. S. aureus strains were isolated in Cluj Napoca hospitals. Identification of strains was made with Vitek2 and API system (bioMérieux). Esculine hydrolysis method, catalase and coagulase test were performed. Antibiotic sensitivity test was performed according to CLSI by Kirby-Bauer method and Vitek2 system. Vancomycin resistant strains were confirmed with E-test.

Results: There were isolated strains of E. Faecalis and of E. Faecium from patients with enterococcal bloodstream infections in General Hospital of Chania. Primary site of enterococcal bloodstream infections were: biliary tract and intestine, urinary tract, surgery (patients from intensive care unit) and lower extremity. E. Faecium strains are found to have increased resistance to Pen, Amp, Amc, Imp. 17% of isolated strains were resistant to Vancomycin and to Teichoplanin but were susceptible to Lin. 99% of E. Faecalis strains were resistant to Quinupristin-dalfopristin, but were all sensitive to Linezolid, teicoplanin, vancomycin. In Cluj hospitals 104 MRSA were isolated; 6% of strains were Erythromycin and Lyncomycin susceptible; 56% of strains were resistant to Erythromycin, 38% MLSB (14% inducible and 24% constitutive). If all the strains of S. aureus were sensitive to vancomycin and teicoplanin, those of CNS were resistant in 12% to vancomycin and in 4% to teicoplanin.

Conclusion: ICU patients had a significantly higher mortality rate, which are due to concurrent enterococcal infection and severe morbidity factors. Multiple resistant enterococci to AB seem to be fueled from the use of broad-spectrum antibiotics (mainly cephalosporins and anaerobe active antimicrobials) according to data. We noted that the majority of patients received, at least initially, empirical treatment with broad- spectrum antibiotics. In order to prevent serious and often fatal infection, especially in immunocompromised patients, commitment to infection control practices and limitation of broad-spectrum antibiotics remain the rules for any successful strategy.
Clinical observation and microbiological analysis of outpatients with incision and drainage of skin and soft tissue infection

C. Wu, Q. Wang, H. Wang, Y. Yilu, H. Shen
Nanjing Drum Tower Hospital of Nanjing University Medical School, Nanjing, China

Background: Skin and soft-tissue infection (SSTI) with community-associated methicillin resistant staphylococcus aureus (CA-MRSA) is common in American and European countries, but the prevalence in China is less evaluated and hence a unified therapeutic guideline in SSTI is unavailable.

Methods: Total 146 of outpatients from community with incision and drainage SSTIs were enrolled. The pathogens were cultured after separation and preliminary evaluation. The susceptibility to antimicrobial agents was tested by disk diffusion, while presence of mecA gene, a marker for MRSA of Staphylococcus aureus and coagulase-negative staphylococci (CNS) was examined by PCR analysis. The patient's prognostic situation including antibiotic use before and after incision and drainage were carried out by statistical analysis; the preoperative course of disease and the kind of identified isolates in followed-up patients was also analyzed.

Results: Among 100 isolates, 33 isolates were identified as staphylococcus aureus (33%), of which 97.0%(32/33) were penicillin resistant and 54.5% (18/33) were erythromycin resistant, but we found no methicillin resistant staphylococcus aureus (MRSA) by mecA gene test of PCR. We also found coagulase-negative staphylococci accounted for 44% (44/100), of which methicillin resistant coagulase-negative staphylococci (MRCNS) accounted for 15.9% (7/44) as determined by PCR analysis. Ninety five cases successful followed-up after incision and drainage, 56 preoperative use antibiotics and 39 not use, the average healing time were 22.88±7.99 and 20.49±8.35 days (p=0.801), respectively, postoperative use and no use antibiotics were 71 and 24, the average healing time were 21.61±8.04 and 22.75±8.71 days(p=0.706), respectively. Statistical analysis showed no statistic difference was observed in average healing time, no matter the species of the isolates or duration of time before incision and drainage.

Conclusion: The main pathogens that skin and soft tissue infection of community in outpatients of Nanjing area are gram positive coccus, but not CA-MRSA strains. A bacteriological test may be necessary in severe SSTIs. But for simple SSTI, an incision and drainage is the first choice. There is no need to use antibiotics since the outcome was independent of the use of antibiotics.
Assessing the rising cases of Methicillin-Resistant Staphylococcus aureus: Hospital and community-associated cases

C. Oraka
Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria

Background: Methicillin-resistant Staphylococcus aureus (MRSA) has since become a major cause of illness and death in our healthcare setting. Risk factors for HA-MRSA include hospitalization, older age, invasive devices, residence in long-term care facility, and exposure to antimicrobial agents. HA-MRSA isolates are often resistant to several antimicrobial drug classes in addition to beta-lactams. The CA-MRSA infections usually affects young, healthy persons and associated with sharing towels or athletic equipment, participating in contact sports, living in unsanitary and crowded areas, using illegal intravenous drugs.

Methods: Directions were given out for clinical microbiology laboratories to submit invasive isolates of MRSA to our unit, where we perform antimicrobial drug susceptibility tests on all isolates and characterize all isolates that were resistant to <3 non-beta-lactam antimicrobial drug classes. Most isolates were obtained from blood cultures.

Results: The full model for predicting invasive infection with CA-MRSA compared with HA-MRSA included age, seasonality, hospital exposure and specimen type. The only significant predictors of CA-MRSA infection compared with HA-MRSA were age <69 years, which was associated with increased risk ([OR] 5.1, 95% [CI] 2.06-12.64), and hospital exposure (OR 0.07, 95% CI 0.01-0.51), which was associated with decreased risk. Most patients were hospitalized for their infections and the proportion of patients admitted to intensive care units did not vary by strain. Patients infected by MRSA were younger than those infected by other strains.

Conclusion: The number of invasive MRSA infections reported and the number of invasive infections caused by CA-MRSA is on the increase. The increase of CA-MRSA poses a unique public health threat. It is now clear that CA-MRSA no longer causes only SSTIs but now causes an increased proportion of invasive infections in a rural state.
Characterization of CTX-M-producing *Escherichia coli* and *Klebsiella pneumoniae* isolated in the university teaching hospital of Yaoundé – Cameroon

J. GANGOUE-PIEBOJI, H. Gonsu Kamga, J. R. Njehawobe Bitjick, F. D. Messu Mandeng, P. Ngassam, J.-M. FRERE, M. Galleni

1University of Liege, Liege, Belgium, 2University of Yaoundé I, Faculty of Medicine and Biomedical Science, Yaounde, Cameroon, 3University of Yaoundé I, Faculty of Science, Yaounde, Cameroon

**Background:** Extended spectrum β-lactamase (ESBL) – producing *E. coli* and *Klebsiella pneumoniae* have rapidly spread worldwide and constitute an increasing problem in healthcare. The CTX-M-family is known to be the most dominant non-TEM/non-SHV ESBL among enterobacteriaceae and their rate of dissemination in most part of the world has increased dramatically since their description. In Cameroon, CTX-M-type β-lactamase was first reported in 2005 and up to now there is no other report. This work was designated to characterize CTX-M-producing *E. coli* and *K. pneumonia* isolated in the university teaching hospital of Yaoundé (UTHY).

**Methods:** twenty ESBL strains (7 *E. coli* and 13 *K. pneumoniae*) were collected from patients at UTHY from November 2007 to June 2008. ESBL phenotype were detected by double disk synergy test confirmed by E-test ESBL strips. The minimum inhibitory concentrations of various β-lactams were determined by E-test. Molecular methods used for characterization included, polymerase chain reaction, sequencing, plasmid transfer, cloning, and plasmid replicon typing.

**Results:** Of the 20 strains, 90% (6 *E. coli*, 12 *K. pneumoniae*) were CTX-M-15 producers, 5% CTX-M-3 (1 *K. pneumoniae*) and 5% (CTX-M-14 (1 *E. coli*). **ISEcp1** was found in the upstream region of **blaCTX-M** in most isolates (16/20). Sequencing of downstream regions of the **bla** genes showed the presence of orf477 in all **blaCTX-M-15**, an insertion sequence **IS903** in **blaCTX-M-14** and **mucA** in **blaCTX-M-3**. TEM-1 was associated with most of CTX-M-type enzymes whereas OXA-1 was found in 13 isolates and DHA-1 in two isolates. **BlaCTXM** was found on plasmid with different sizes and 7 replicons. **FIA** (n=19, 95%), **FIB** (n=18, 90%) and **FII** (n= 7, 35%) were the most replicons. Plasmids with replicons IncY (n=2), IncL/M (n=1), IncHI2 (n=1) and IncA/C (n=1) were also observed.

**Conclusion:** This study showed the presence of CTX-M beta-lactamase in UTHY and confirmed the predominant role of **ISEcp1** in the mobilization of **blaCTX-M** genes. The CTX-M-1 cluster is most prevalent and **blaCTX-M-3**, **blaCTX-M-14** and **blaDHA** were first described in Cameroon.
Emergence of *bla*CTX-M _-lactamase gene carried on IncI1 plasmid in clinical isolate of non-typhoid salmonella in Chennai, India

**M. Thirunarayan**
Apollo Hospital, 600006, T.N, India

**Background:** The present study was undertaken to determine mechanism of _-lactam resistance in Salmonella isolated from blood sample of five-month baby, with fever, admitted in a tertiary care hospital, in Chennai, India. The clinical diagnosis was one of dengue fever with sepsis and a steroid induced hypertension along with hemophagocytic syndrome.

**Methods:** Non-typhoid salmonella was identified by automated machine. AST was done by disk diffusion method as per CLSI guidelines. DDST was performed to detect the presence of ESBL and AmpC _-lactamase. PCR –screening was carried out for all existing _-lactamase genes. Plasmid was analyzed by PCR based replicon-typing. The genetic environment of *bla*CTX-M gene was carried out by PCR-mapping. Transconjugation experiment was performed using E. coli J53 and transconjugants was subjected to above mentioned investigations.

**Results:** This isolate was resistant to ampicillin and 3rd generation cephalosporins but was sensitive to quinolones. ESBL was detected in DDST and E-strip with ceftazidime and clavulanate. Group-1 *bla*CTX-M and *bla*TEM like _-lactamase genes were detected in PCR. *bla*CTX-M gene was flanked by insertion element ISEcp1 at upstream region which aids expression and mobilization of *bla*CTX-M gene. Plasmid typing of donor and conjugates revealed that *bla*CTX-M gene was linked with IncI1 group. Conjugation frequency was very high (5x10-1 CFU/ml)

**Conclusion:** _- Lactamase mediated 3rd generation cephalosporin resistant Salmonella has begun to emerge in India and poses the risk of rapid and widespread dissemination. Further epidemiological studies are required to detect its prevalence.
Antimicrobial susceptibility of selected gram negative organisms at a tertiary hospital in South Africa

N. Mbelle
National health laboratory Services, Johannesburg, South Africa

**Background:** The monitoring of antimicrobial resistance serves an important role. Not only does it give an insight into the spread of resistance locally and nationally, it also informs the relevance of empirical antimicrobial therapy guidelines.

**Methods:** A retrospective descriptive study was performed over a thirteen month period from June 2008 to June 2009. Data of non duplicate specimens was collected from the laboratory information system. Consecutive clinical specimens were obtained from admitted patients and patients referred from primary health care clinics. Specimens from blood, cerebrospinal fluid, urine, sputum, pus and stools were processed using conventional laboratory methods. Isolates were identified and susceptibility testing done on the Microscan® using the CLSI guidelines.

**Results:** Of the data analysed 94% of the P. aeruginosa and 97% of the P. mirabilis isolates were susceptible to piperacillin/tazobactam compared to 70% for K. pneumoniae and 53% for A. baumanii. K. pneumoniae and E. cloacae showed a reduced susceptibility to ceftriaxone of 57% and 58% respectively. 88% of the Proteus mirabilis isolates were susceptible to ceftriaxone. A reduced susceptibility of 39% and 84% was shown for A. baumanii and P. aeruginosa respectively. All organisms identified showed reduced susceptibility to cefepime i.e. 49% for K. pneumoniae, 39% for A. baumanii, 85% for P. aeruginosa, 86% for P. mirabilis and 60% for E. cloacae. Susceptibility to ertapenem was greater than 90% for K. pneumoniae, E. coli, E.cloacae, and P. mirabilis, but 54% for A. baumanii and 84% for P. aeruginosa. Susceptibility to imipenem was greater than 90% for the tested organisms with the exception of A. baumanii which was 69%. The susceptibility to ciprofloxacin was highest for P mirabilis and P. aeruginosa, 95% and 89% respectively and least lowest for A. baumanii, 43%. P. aeruginosa, K. Pneumoniae, E. coli and P. mirabilis were more susceptible to amikacin than A. baumanii i.e. greater than 90% compared to 45% respectively.

**Conclusion:** Our study confirms the universality of antimicrobial resistance. Although amikacin and carbapenems are still potent against most isolates at our institution, A. baumanii, a common health care associated organism is showing increased resistance to most available antimicrobials. Intensive infection control procedures and the rational use of antibiotics should be enhanced.
Novel occurrence of different Carbapenem resistance mechanisms in a single clinical specimen

K. S. karthikeyan¹, M. Thirunarayan², P. Krishnan¹
¹Dr ALM PGIBMS, Taramani, CHENNAI, T.N, India, 2Apollo Hospital, 600006, T.N, India

Background: The present study was to determine the mechanism of carbapenem resistance between *E. coli* and *Enterobacter cloacae* isolated from the urine sample of an adult male patient admitted in surgical ICU for the treatment of head injury.

Methods: A 50 year old man admitted to the surgical ICU with head injury had ESBL and AmpC producing *E. coli* in an initial urine culture, for which he was treated with a carbapenem. A second urine culture carried out 2 weeks later, yielded significant and mixed growth of carbapenem resistant *E. coli* and *E. cloacae*. Speciation was done by automated machine and AST was carried out by disk diffusion method as per CLSI guidelines. DDT was done to detect the presence of MBL. PCR-screening was done for existing MBL, Carbapenemase and other beta lactamase genes.

Results: Both isolates were resistant to all beta lactams, aminoglycosides and quinolones but were sensitive to Tigecycline and Colistin. DDST showed positivity for MBL production. In PCR method, *E. coli* was found to be positive for NDM-1, CMY-4, CTX-M and TEM-like beta lactamases but *E. cloacae* was positive for VIM-5, and TEM-like beta lactamases.

Conclusion: Multiple organisms belonging to the family enterobacteriaceae, presenting in a single clinical specimen with different types of MBL is relatively rare and a possible indication of the complex resistance problems that are likely to be encountered in future.
First two cases of heterogeneous vancomycin–intermediate \textit{S. aureus} (h-VISA) isolates in Lima, Peru

G. Horna$^1$, L. Astocondor$^2$, S. Roman$^1$, J. Yali$^1$, F. Salmavides$^1$, J. Jacobs$^3$, C. Garcia$^1$

$^1$Universidad Peruana Cayetano Heredia, Lima, Peru, $^2$Universidad Peruana Cayetano Heredia, Lima, Peru, $^3$Instituut voor Tropische Geneeskunde, Antwerp, Belgium

**Background:** The therapeutic options available to treat infections due to methicillin-resistant \textit{Staphylococcus aureus} (MRSA) are limited in poor resource settings. Vancomycin continues being the only drug available for MRSA infections in many hospitals of Peru. Our objective was to determine the presence of h-VISA isolates in hospitals from Lima, Peru.

**Methods:** We collected consecutive blood culture isolates from nine general hospitals of Lima, Peru since April 2008. Only one isolate per patient was considered. Identification was done using standard methods. Detection of oxacillin resistance was done by the screening test oxacillin salt agar recommended by the Clinical and Laboratory Standards Institute. An oxacillin minimal inhibitory concentration (MIC) of $\geq 4$ was considered resistant. Determination of vancomycin MIC was done by agar dilution. Strains with vancomycin MIC equal to 2 or 3 were further tested by macro E-test. An h-VISA strain was determined if MIC $\geq 8\mu g/mL$ for vancomycin and teicoplanin or MIC $\geq 12\mu g/mL$ for teicoplanin alone was found by macro E-test. Population analysis was not performed.

**Results:** A total of 360 \textit{S. aureus} isolates were analyzed, 240 (67\%) were MRSA. 96\% of these strains had a vancomycin MIC=0.5 $\mu g/mL$, 1\% had a MIC=1$\mu g/mL$ and 3\%(8 strains) had a MIC=2 $\mu g/mL$. The results of macro E-test of these eight strains are shown in the following table.

<table>
<thead>
<tr>
<th>Code</th>
<th>MIC ( $\mu g/mL$)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Vancomycin</td>
</tr>
<tr>
<td>Rass-004</td>
<td>4</td>
</tr>
<tr>
<td>Rass-198</td>
<td>4</td>
</tr>
<tr>
<td>Rass-234</td>
<td>6</td>
</tr>
<tr>
<td>Rass-173</td>
<td>8</td>
</tr>
<tr>
<td>Rass-167</td>
<td>6</td>
</tr>
<tr>
<td>Rass-134</td>
<td>3</td>
</tr>
<tr>
<td>Rhu-023</td>
<td>24</td>
</tr>
<tr>
<td>Rhu-072</td>
<td>12</td>
</tr>
</tbody>
</table>

**Conclusion:** 1) This is the first report of h-VISA strains in Lima, Peru. 2) The percentage of MRSA strains from hospitals of Lima is high. Improving infection control measures is mandatory to prevent cross infection of drug-resistant \textit{S. aureus} in hospitals.
Assessing the rising cases of Antimicrobial (Methicillin)-Resistant *Staphylococcus aureus*: Hospital and community-associated cases

C. Oraka
Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria

Background: Methicillin-resistant Staphylococcus aureus (MRSA) has since become a major cause of illness and death in our healthcare setting. Risk factors for HA-MRSA include hospitalization, older age, invasive devices, residence in long-term care facility, and exposure to antimicrobial agents. HA-MRSA isolates are often resistant to several antimicrobial drug classes in addition to beta-lactams. The CA-MRSA infections usually affects young, healthy persons and associated with sharing towels or athletic equipment, participating in contact sports, living in unsanitary and crowded areas, using illegal intravenous drugs.

Methods: Directions were given out for clinical microbiology laboratories to submit invasive isolates of MRSA to our unit, where we perform antimicrobial drug susceptibility tests on all isolates and characterize all isolates that were resistant to <3 non-beta-lactam antimicrobial drug classes. Most isolates were obtained from blood cultures.

Results: The full model for predicting for predicting invasive infection with CA-MRSA compared with HA-MRSA included age, seasonality, hospital exposure and specimen type. The only significant predictors of CA-MRSA infection compared with HA-MRSA were age <69 years, which was associated with increased risk ([OR] 5.1, 95% [CI] 2.06-12.64), and hospital exposure (OR 0.07, 95% CI 0.01-0.51), which was associated with decreased risk. Most patients were hospitalized for their infections and the proportion of patients admitted to intensive care units did not vary by strain. Patients infected by MRSA were younger than those infected by other strains.

Conclusion: The number of invasive MRSA infections reported and the number of invasive infections caused by CA-MRSA is on the increase. The increase of CA-MRSA poses a unique public health threat. It is now clear that CA-MRSA no longer causes only SSTIs but now causes an increased proportion of invasive infections in a rural state.
Background: Urinary tract infections UTI are frequent problems of health care services in Romania, and represent 5-10% of all consultations in general practice.

Methods: We studied the UTI cases admitted in the Clinical Hospital of Pneumophtysiology Oradea during the years 2007-2008, which totaled 422 patients, representing 11.5% of the pathology.

Results: UTI were more frequent in females (262 cases - 62.08%) than in males (160 cases - 37.91%). Major risk factors associated with UTI were age over 45, urinary obstructions and chronic diseases. Out of the studied patients, 98 cases (23.2%) were asymptomatic or oligosymptomatic, and 324 (72.8%) were symptomatic. The etiology was determined in 256 cases (60.7%). The majority of urinary infections were produced by *Escherichia coli* (112 cases - 43.75%), *Staphylococcus saprophyticus* (62 cases - 24.21%), and *Proteus mirabilis* (27 cases - 10.54%). Trimethoprim was used as an empirical therapy of inferior UTI in 35.71% of cases, although 26.78% of *E. coli* strains were resistant to it. Other antibiotics which were used as first line in patients allergic to trimethoprim included nitrofurantoin (resistance of *E. coli* 22.32%), cephalosporines (resistance of *E. coli* 18.75%); ampicillin and amoxicillin are used routinely, but *E. coli* are resistant to them in proportions of 39.28%, and 36.66% respectively, hence the necessity of using inhibitors of beta-lactamases. The antibiotic treatment period was no longer than 3-5 days in females with uncomplicated UTI, and 7 days for the treatment of UTI in men. First-line therapy in mild cases of uncomplicated pyelonephritis was an oral fluoroquinolone (ciprofloxacin) for 7 days. Fluoroquinolones resistant *E. coli* was found in 11 cases (less than 10%). The main complications were ascending infection, hydronephrosis, and ascension of glycemia and anemia.

Conclusion: The main risk factors associated with UTI were feminine sex, age over 45 years, urinary obstructions and chronic diseases. The majority of urinary infections were produced by *Escherichia coli*, *Staphylococcus saprophyticus* and *Proteus mirabilis*. Trimethoprim was the first choice for the empirical treatment of uncomplicated UTI. *E. coli* is highly resistant to betalactamines and resistant to Trimethoprim in proportions of 26.78%, nitrofurantoin 22.32%, cephalosporines 18.75%, and ciprofloxacin 9.82%.
Daptomycin activity and spectrum when tested against contemporary (2009) Gram-positive strains collected in Latin American medical centers
S. D. Putnam, R. N. Jones, G. J. Moet, H. Sader
JMI Laboratories, North Liberty, IA, USA

Background: Daptomycin is a cyclic lipopeptide approved in the United States (2003), Europe (2006) and some Latin American (LA) countries for the treatment of complicated skin and skin structure infections (cSSSI) and *S. aureus* (SA)-associated bacteremia and right-sided endocarditis. We evaluated the in vitro activity and spectrum of daptomycin tested against clinical isolates collected in LA hospitals.

Methods: A total of 2,672 consecutive strains were collected in 2009 from 10 medical centers located in 4 LA countries, Argentina, Brazil, Chile and Mexico. The organism collection included: SA (688; 47.7% oxacillin-resistant [MRSA]); coagulase-negative staphylococci ([CoNS] 221; 81.0% oxacillin-resistant); *Enterococcus* spp. ([ESP] 292, 8.9% vancomycin [VAN]-R); _β_-haemolytic streptococci (BHS; 91), and viridans group streptococci (VGS; 21). The organisms were isolated mainly from bloodstream infections (45.5%) and cSSSI (24.5%). The strains were tested for susceptibility (S) against daptomycin and comparators by CLSI broth microdilution methods in cation-adjusted Mueller-Hinton broth supplemented to 50 _g/ml of calcium for daptomycin tests.

Results: Daptomycin was highly active against SA and CoNS (100.0% S; MIC50/90, 0.5/0.5 _g/ml for both; see Table). MRSA rates were similar among the LA countries: Argentina (58.9%), Brazil (31.1%), Chile (56.4%) and Mexico (51.3%). Overall, daptomycin was highly active against MRSA (100.0% S) as was vancomycin (MIC50/90, 1/1 _g/ml, 100% S) and linezolid (MIC50/90, 2/2 _g/ml; 100% S). Differences in comparator resistance rates among MRSA were noted among the LA countries for trimethoprim/sulfamethoxazole (Argentina, 0.9%; Brazil, 30.0%; Chile, 2.8%; Mexico, 0.0%) and levofloxacin (Argentina, 31.2%; Brazil, 85.7%; Chile, 100.0%; Mexico, 97.4%). All ESP were S to daptomycin (MIC50/90, 1/2 _g/ml). Ampicillin was active against 86.6% of ESP. The prevalence of vancomycin-R ESP was low and only noted in three countries: Argentina (2.0%), Brazil (17.5%) and Chile (12.1%). Daptomycin was highly active against BHS (MIC90, 0.25 _g/ml) and VGS (MIC90, 1 _g/ml).

Conclusion: Daptomycin showed significant potency and broad-spectrum activity against recent clinical isolates of Gram-positive organisms isolated in LA medical centers, including R subsets. All organisms tested were susceptible based on published breakpoints except for one VGS strain, which had a slightly elevated daptomycin MIC of 2 _g/ml.
**Background:** Antimicrobial resistance among Enterobacteriaceae represents a major problem in LA medical centers. High rates of resistance (R) to fluoroquinolones (FQ) and aminoglicosides coupled with elevated prevalence of extended-spectrum β-lactamase (ESBL) producing strains forces greater use of carbapenems in many institutions. We evaluated the activity of tigecycline against Enterobacteriaceae with various R phenotypes collected in selected LA medical centers.

**Methods:** 4,695 clinical Enterobacteriaceae isolates were collected from January/2005 to December/2008 from 10 medical centers located in Argentina (2), Brazil (4), Chile (2) and Mexico (2). The isolates were tested for susceptibility (S) by microdilution broth according to the CLSI recommendations against tigecycline and many comparators. Tigecycline breakpoints established by the USA-FDA for Enterobacteriaceae (≤2/≥8 mg/ml for S/R) were applied. The collection included *E. coli* (EC; 2,279), *K. pneumoniae* (KPN; 1,509) and *Enterobacter* spp. (ESP; 906). Multidrug-R (MDR) was defined as R to FQ (ciprofloxacin MIC, ≥4 mg/ml) and amikacin (AMK; MIC, ≥64 mg/ml) plus ESBL phenotype (KPN and EC; ceftriaxone or ceftazidime [CAZ] MIC at ≥2 mg/ml) and/or Amp-C hyperproduction (CAZ-R ESP).

**Results:** Overall ESBL rates were 19.5 and 50.5% among EC and KPN, respectively, and 29.9% of ESP strains were R to CAZ. The EC/KPN ESBL rates (%) were 13.0/58.7, 9.8/51.0, 19.9/48.3 and 40.3/37.3 in Argentina, Brazil, Chile and Mexico, respectively, while CAZ-R varied from 23.3% in Brazil to 35.4% in Chile. FQ-R was higher among EC (32.8%) and KPN (33.0%) compared to ESP (19.7%) with large country-to-country variation. FQ-R/AMK-R rates by country were (%) 41.8/0.0, 19.5/0.5, 27.9/0.6 and 55.7/0.4 among EC; 37.2/2.5, 35.1/3.3, 35.2/21.2 and 19.9/12.3 among KPN, and 15.4/6.3, 22.3/7.8, 22.8/2.5 and 15.6/17.9 among ESP in Argentina, Brazil, Chile and Mexico, respectively. Tigecycline was very active against the isolates tested independent of the R phenotype (see Table). Not one tigecycline-R isolate was observed and only 15 (0.3%) isolates showed tigecycline-intermediate MIC results (4 mg/ml).

**Conclusion:** These results indicate that tigecycline has sustained potent in vitro activity and a broad-spectrum against clinically important Enterobacteriaceae species causing infections in LA medical centers, including MDR organisms.
Activity of tigecycline and comparators tested against Streptococcus pneumoniae isolated from patients with community-acquired respiratory tract infection (CARTI) in Latin American medical centers (2005-2009)

H. Sader, R. N. Jones, M. Stilwell, D. J. Farrell
JMI Laboratories, North Liberty, IA, USA

Background: Tigecycline is a glycylcycline antimicrobial with broad spectrum of antimicrobial activity, which includes various streptococcal species and multidrug-resistant organisms. Based upon in vitro activity and demonstrated clinical trial efficacy, tigecycline has recently received approval in the USA for treating CARTI. We assessed the contemporary potency of tigecycline tested against S. pneumoniae (SPN) causing CARTI in Latin America (LA).

Methods: A total of 1,262 isolates from patients with CARTI were collected from LA medical centers participating in surveillance of tigecycline (2005-2009). The isolates were from (no. of centers; no. of isolates): Argentina (2; 275), Brazil (4; 360), Chile (2; 452) and Mexico (2; 175). Susceptibility (S) testing was performed by a central laboratory (JMI Laboratories, Iowa, USA) using CLSI methods (M07-A8, 2009) and all quality control tests were within published ranges.

Results: Overall, 66.6, 79.6 and 99.7% of strains were S to penicillin (PEN; MIC, ≤ 0.06 mg/ml), erythromycin (ERY) and levofloxacin (LEV), respectively. S to PEN and ERY fluctuate during study period with no clear tendency toward increase or decrease in any nation or overall. Tigecycline was very active against SPN strains independently of S to PEN or country of origin (see Table). Overall, 97.4 and >99.9% of strains were inhibited at 0.06 and 0.12 mg/ml of tigecycline, respectively. LEV non-S strains were only observed in Argentina (3 strains) and Chile (1 strain) and had tigecycline MIC of ≤ 0.03 (2), 0.06 (1) and 0.25 mg/ml (1).

Conclusion: Tigecycline demonstrated potent antimicrobial activity against SPN associated with CARTI and its activity was not adversely affected by resistance to other antimicrobials. Tigecycline activity shown here confirms that this agent role in treating CARTI in LA.
Cefazolin plus Gentamicin versus Cefazolin plus Ciprofloxacin in management of Type–IIIA open fractures

N. Janmohammadi, M. R. Hasanjani Roushan
Babol medical sciences university, Babol, Iran, Islamic Republic of

**Background:** The optimal antibiotic regimen, mode of administration and duration is still controversial in open fractures. This study was conducted to evaluate the efficacy of two different antibiotic regimens in management of type III-A open fractures.

**Methods:** The patients who were sustained Type IIIA open fractures (according to Gustilo classification, 1984) and were treated in a teaching hospital of Babol medical university from January 1, 2004 to January 1, 2009 were studied. Patients were enrolled randomly into the two antimicrobial therapy groups (cefazolin plus gentamicin versus cefazolin plus ciprofloxacin) consecutively. The treatment continued for 3 days in two groups and the patients were followed for 3 months. The rate of deep infection in both groups was determined and proportions were compared with Fisher’s exact test.

**Results:** Group one was composed of 148 patients [108 (73%) men and 40 (27%) women] with the mean age of 36.96 ± 14.41 years and group two included 153 patients [107 (70%) men and 46 (30%) women] with the mean age of 36.93 ± 13.51 years. The rate of deep infection in group one which received cefazolin plus gentamicin was 5.4% and in group two which treated with cefazolin plus ciprofloxacin was 6.5%. The difference between two groups was not significant statistically (P= 0.679).

**Conclusion:** The result of the study revealed no statistically significant difference between cefazolin plus gentamicin versus cefazolin plus ciprofloxacin in infection rate of type IIIA open fractures.
Safety, tolerability and pharmacokinetics of intravaginal pentamycin in women with symptomatic vaginitis

**C. Winnips**¹, B. Frey Tirri², J. Bitzer², B. Geudelin³, J. Drewe⁴, J. Drewe⁴

¹Lumavita AG, Basel, Switzerland, ²Department of Obstetrics and Gynaecology, University Hospital, Basel, Switzerland, ³Mediente GmbH, Basel, Switzerland, ⁴Department of Clinical Pharmacology, University Hospital, Basel, Switzerland

**Background:** Pentamycin is a polyene macrolide with a wide spectrum of antimicrobial activity. The 3-mg dose strength of intravaginal pentamycin is registered in Switzerland for the treatment of vaginitis caused by *Trichomonas vaginalis*, *Candida albicans* or mixed flora. The approved treatment regimen is 3-6 mg daily for 5-10 days. A higher-dosed vaginal tablet of pentamycin (10-mg dose strength) is currently under clinical development for global registration. The objective of this study was to evaluate the safety, tolerability and pharmacokinetics of escalating doses of intravaginal pentamycin in women with symptomatic vaginitis.

**Methods:** This open-label study was conducted in 12 women (mean age: 32.7 years; range: 19-59 years) with symptoms of vaginitis (itching, burning, leucorrhoea and xanthorrhrea, and dyspareunia). Four women were diagnosed with bacterial vaginosis and 8 with mixed infections (bacterial and candidal infection), on the basis of a complete gynecological examination and wet mount microscopy. The diagnosis was confirmed by the isolation of *Candida albicans* and/or *Gardnerella vaginalis* from the vaginal discharge specimens. On the treatment day, 6 patients applied 2 vaginal tablets containing each 30 mg pentamycin. In absence of intolerance, the other 6 patients applied one tablet containing 100 mg of the active ingredient. Safety and tolerability were assessed by vital signs monitoring and recording of adverse events (AEs). Blood sampling for determination of pentamycin plasma concentrations was performed pre-dose and then at 1, 3 and 8 hours post-dose. Pentamycin plasma concentrations were measured by high-performance liquid chromatography and mass spectrometry (lower limit of quantification of this assay: 5 ng/ml).

**Results:** Five of 6 patients in the 60-mg dose group reported the following AEs: vaginal burning sensation (2 women), vaginal discharge (2 women), pruritus (one woman), vaginal pain (one woman) and cystitis (one woman). Only one of the patients in the 100-mg dose group reported an AE (cystitis). All events were mild or moderate in severity and were considered as not related or unlikely related to study drug. The plasma levels of pentamycin were below the limit of quantification in all samples.

**Conclusion:** In women with symptomatic vaginitis, a single intravaginal application of 60 or 100 mg of pentamycin was well-tolerated and did not result in systemic absorption of the active ingredient through the inflamed vagina.
A survey on antibacterial activity of different parts of *Peganum harmala* L

**E. Darabpour, A. Poshtkouhian, H. Motamedi, S. M. Seyyed Nejad**

Shahid Chamran University, Ahvaz, Khuzestan, Iran, Islamic Republic of

**Background:** Nowadays, multiple drug resistant strains have been developed. As an alternative, medicinal plants are valuable resources in order to exploring new drug especially against resistant strains. *Peganum harmala* L. (Zygophyllaceae) is one of the most famous medicinal plants used in traditional medicine of Iran. The aim of this study was to consider antibacterial potential of different parts of *Peganum harmala* against some important human pathogenic bacteria.

**Methods:** Antibacterial properties of ethanolic extract of different parts of *Peganum harmala* including root, stem, leaf, flower and seed was assessed by disc diffusion method at different concentration from 50 to 400 mg/mL against *Pseudomonas aeruginosa*, *Klebsiella pneumoniae*, *Escherichia coli*, *Salmonella Typhi*, *Proteus mirabilis*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Bacillus anthracis*, *Bacillus cereus*, *Bacillus pumilus*, *Streptococcus pyogenes* and *Listeria monocytogenes*. Synthetic antibiotic discs were used as control. MIC and MBC values of root and seed extracts was determined using macrodilution method against somewhat important and more sensitive bacteria.

**Results:** Among the evaluated parts of *P. harmala*, the root and seed extracts presented antibacterial activity against all of tested bacteria even at lowest concentration. Antibacterial effect of stem part was moderate while leaf and flower extracts showed relatively poor activity. *E. coli*, *P. mirabilis*, *S. Typhi* and *B. cereus* were resistant to the stem, leaf and flower extracts of *P. harmala*. Antibacterial activity of root and seed extracts of *P. harmala* against *S. aureus*, *E. coli*, *B. cereus*, *B. anthracis*, *K. pneumoniae*, *L. monocytogenes* and *S. Typhi* was comparable with synthetic antibiotic discs. All of the tested bacteria were resistant to oxacillin and more of the isolates presented resistant to Colistin, Nafcillin and Methicillin. MIC and MBC values of root and seed extracts against *E. coli*, *S. aureus* and *S. Typhi* were same (0/0025 mg/mL) while MIC of root and seed extracts against *B. anthracis* was 0/01 mg/mL and MBC of these extract against this bacterium was 0/02 mg/mL.

**Conclusion:** Comparing the diameter of inhibitory zones of active extracts with synthetic antibiotics indicate that the root and seed organs of *Peganum harmala* can be assigned as a resource of antibacterial compounds for treatment of infectious disease.
Study of clinical profile and antibiotic sensitivity pattern in culture positive typhoid fever cases in a tertiary care hospital, South India

C. Samarasinghe¹, A. Kumar², V. Pandit¹, R. Balasubramanian¹
¹Kasturba Medical College, Manipal University, Manipal, 576104, Karnataka, India, ²Kasturba Medical College - Manipal, Manipal University, Manipal, India

Background: Typhoid fever is a systemic infection caused by Salmonella enterica serotype Typhi (S. Typhi) a highly adapted human – specific pathogen that evolved about 50,000 years ago and has remarkable mechanisms for persistence in its host. Typhoid fever occurs in all parts of the world where there is substandard water supply and sanitation. The disease still remains a serious public-health problem in the developing countries. S.Typhi has developed resistance to the commonly used antimicrobials such as chloramphenicol, aminoglycosides, sulphonamides, quinolones and cephalosporins. Currently, fluoroquinolones and third-generation cephalosporins were the drugs of choice for the treatment of typhoid fever in India, although decreased susceptibility to these antimicrobials has also been reported. Purpose of this study was to study the clinical profile and antibiotic sensitivity pattern of antibiotics used in enteric fever.

Methods: A retrospective analysis of typhoid fever cases admitted during the year 2005-2008 was done from the records available in a tertiary care teaching hospital. Only culture proven cases of Typhoid fever were included in the study. The mode of presentation, complications and the sensitivity pattern of isolates from blood culture was recorded.

Results: Records of 106 patients were evaluated, 83 (78.3%) males and 23 (21.7%) females. Average age of presentation was 29 years. Average duration of hospital stay was 8.7 days. Fever was present in all patients. Headache 63 (59.4%), generalized body ache 53 (32.5%), cough 26 (24.1%), vomiting 30 (28.3%) and diarrhoea 29 (27.4%) were the most common presenting symptoms while splenomegaly 47 (44.3%) and hepatomegaly 42 (39.6%) were the most common presenting signs. Ceftriaxone was the antibiotic of choice in majority of cases 93 (87.7%). A maximum sensitivity of 96.6% was observed with cephalosporins where as a resistance of 29.2% was seen with fluoroquinolones.

Conclusion: A high degree of sensitivity was noted to chloramphenicol, ampicillin and sulphonamides confirming a trend of roll back of sensitivity to conventional anti-typhoid drugs.
Antibiotics misusing in common cold infections in children


1Public Health Institution of Canton Sarajevo, Sarajevo, Bosnia and Herzegovina, 2Infectious Clinic Sarajevo, Sarajevo, Bosnia and Herzegovina, 3Medical faculty Sarajevo, Sarajevo, Bosnia and Herzegovina, 4Pediatrics Clinic Sarajevo, Sarajevo, Bosnia and Herzegovina, 5First Medical Aid, Sarajevo, Bosnia and Herzegovina, 6General Hospital Sarajevo, Sarajevo, Bosnia and Herzegovina, 7Pharmaceutical faculty Sarajevo, Sarajevo, Bosnia and Herzegovina

Background: The common cold is a viral infection of your upper respiratory tract, nose and throat. The common cold generally starts with a nonproductive, hacking cough and progresses to some mix of sneezing, headaches, malaise, fatigue, rhinorrhea, myalgia, arthralgia, nasal congestion, and a sore throat.

Aims: Antibiotic resistance might be reduced if patients could be better informed regarding the lack of benefits of antibiotics for children with viral infections and avoid antibiotic prescriptions in these circumstances.

Methods: The common cold is most often caused by infection with one of the more than hundred known serotypes of rhinovirus, a type of picornavirus. We identified more than one hundred and fifty thousand cold common kids reports of 39 different medications during the time period from October 2006 through November 2009.

Results: Around 45% of colds are caused by rhinoviruses in Bosnia and Herzegovina. Symptoms typically lasted from three to ten days. Children with common cold two to five years of age are the most common users of such antibiotic preparations for wrong therapy, followed by children younger than two years of age.

Discussion: The common cold can lead to opportunistic coinfections or superinfections such as acute bronchitis, bronchiolitis, croup, pneumonia, sinusitis, otitis media, or strep throat.

Conclusion: There are no approved antiviral drugs for the common cold. It is the most common infectious disease in children, but it is rarely fatal. The common cold is self-limiting, and the host's immune system effectively deals with the infection. Rhinoviruses exacerbate asthma attacks in very young children.
The prevalence of gram-positive bacteria from diabetic foot ulcers and antibiotic susceptibility patterns of isolated strains from Taleghani Hospital in Tehran

A. Dezfulian¹, M. M. aslani², H. Dabiri², M. Azimirad ², M. R. Zali³
¹the research center of gasterology and liver diseases, tehran, Iran, Islamic Republic of, ²tehran, Iran, Islamic Republic of, ³Tehran, Iran, Islamic Republic of

Background: Diabetic foot ulcers of diabetic patients are usually treated with a mixture of antibiotics for a long period of time. It has been suggested that this may increase the antimicrobial resistance to antibiotic, and may cause additional morbidity and mortality.

In this study Gram-positive isolates from diabetic foot ulcers were collected and tested to currently used antibiotics, such as Oxacillin, CoTrimoxzole, Cephalothin, Vancomycin, Tetracycline, Imipenem, Clindamycin, Ampicillin, Amoxycilin, Erythromycin, PenicillinG, Gentamicin.

Methods: A total of patients were admitted to the surgery ward due to diabetic foot infection. Microbiological specimens were taken on admission. Standard methods for isolation and identification of bacteria were used. Antibiotic susceptibility was determined by disk diffusion on Mueller-Hinton agar based on CLSI (Clinical and Laboratory Standards Institute) guideline.

Results: From a total of isolated from gram positive bacteria, 20 were Staphylococcus aureus, 19 Staphylococcus epidermidis, 1 Staphylococcus aureus catalase negative, 4 Staphylococcus spp., 6 Enterococcus, 1 Streptococcus viridans, 5 Nonentretococcus, 1 Diphteroid, 2 Peptostreptococcus Spp., 2 Peptococcus Spp. All of the S. aureus strains and (80%) of the S.epidermidis isolates were methicillin resistant. One vancomycin-resistant Staphylococcus aureus were found.

Conclusion: The most frequently isolated Gram positive bacteria were S. aureus (28.5%) . The proportion of staphylococci resistant to methicillin was high. Eighty seven percent of gram positive bacteria were multi drug resistance. A close screening of isolates from diabetic foot ulcers is necessary as local conditions in these lesions might promote selection of resistant strains.
IVDU related infection in a group of Iranian addict in north of Iran

R. Ghasemian¹, N. najafi²
¹mazandaran universiy if medical sciences, 48167-13319, Iran, Islamic Republic of,
²mazandaran medical university, Sari, Iran, Islamic Republic of

Background: Drug abuse is a global problem. It is estimated that 13 million IV Drug abusers (IVDUs) are in the world that 75% of them live in developing countries. Iran with a population of 300 thousand IVDUs among 3.5 million addicts has a high ranking in the world. IDUs Infections make various challenges to physicians. Serious Infectious diseases are transmitted by shared syringes intravenously among addicts. The aim of this study was to identify the prevalence of infectious diseases among IVDUs who admitted at the university affiliated Hospital of Mazndaran University of Medical Sciences between October 2007 -2008.

Methods: During a cross-sectional descriptive study 88 IVDUs patients who were hospitalized between October 2007 to October 2008 at Razi Hospital in Qaemshahr and Imam Khomeini Hospital in Sari were studied. Demographic characteristics such as marital status, history of drug abuse, history of hospitalization, material consumption, shared syringes and prison history were recorded in a questionnaire. Collected data were analyzed by using SPSS16 software with descriptive statistical analysis.

Results: The age ranged of studied population was between 20-40 years (72.5%) with a mean of 35.01 ± 11.53 years. From total, 30 people were used 2 or more kinds of injecting drugs simultaneously and 24 people used crack injection. Most viral disease was HIV and hepatitis C (10 people). Cellulitis (27.3%) was the most complications and the most cause of admission and Endocarditis and sepsis were in the next rank.

Conclusion: The results of our study showed that crack is now taking a higher frequency of injection among drug users. Also in the most cases, the age of IVDUs was increased compare to the past years. In addition, the most numbers of endocarditis (50%) were seen among crack users. Increasing the rate of endocarditis among Iranian IVDUs patients is probably due to injection of contaminated drug.
Case report: A case of leprosy of larynx

M. Momen Heravi, A. Sharif
Kashan University of Medical Sciences, Kashan, Isfahan, Iran, Islamic Republic of

Background: Leprosy is an ancient deforming disease caused by Mycobacterium leprae, which is still poorly understood and often feared by the general public and even by some in the health care professions. Fortunately, the outlook for patients has dramatically improved over the last three decades with the introduction of multi-drug treatment and management strategies that have somewhat diminished the stigma of this diagnosis. We report a rare case of leprosy of larynx.

Methods: Patient presentation
A 45-year-old man presented with complaints of cough, dyspnea, and hoarseness from many years ago. Because of demonstration of acid fast bacilli in smear of his sputum, the diagnosis of tuberculosis was made and anti-tuberculosis treatment was initiated. But he developed fever and his symptoms exacerbated, so he was admitted. On examination, there was an tender erythematous nodule on right supraclavicular region, loss of eyebrows and lashes, and disseminated hyper and hypo pigmented cutaneous lesions on abdomen, thorax, back. chest x-ray was normal. PPD test was 16 mm. Laryngoscopy to rule out laryngeal tuberculosis was done and granulomatous lesion were seen. Laryngeal and skin biopsy was performed which numerous acid fast bacilli, macrophages and foamy cells suggestive of lepromatous leprosy were demonstrated in both specimens. Treatment was started on multibacillary regime of WHO multidrug therapy, but because of persistence of disease response to treatment was slow.

Results: This article is case report and there is no result.

Conclusion: In conclusion, this report highlights the importance of systemic involvement in lepromatous leprosy especially when the initial presentation is laryngitis or respiratory symptoms. Laryngeal leprosy may mistaken with tuberculosis laryngitis due to respiratory problems and existence of acid fast bacilli in respiratory secretions.

Key Word
Leprosy, laryngitis, larynx, Mycobacterium leprae
The serum soluble levels of CD26 and CD30 in patients with brucellosis

A. Rafiei
Sari Medical School, Mazandaran University of Mediact Sciences, Sari, Mazandaran, Iran, Islamic Republic of

**Background:** Brucellosis is a zoonotic disease in the world wide. It is suggested that CD26 and CD30 are surface molecules expressed on activated Th1 and Th2 cells, respectively. The aim of the present study was the determination of the levels of soluble (s) CD26 and CD30 co-stimulatory molecules in sera of brucella-infected individuals and healthy controls.

**Methods:**
The study included 90 brucellosis patients and 70 healthy controls. The levels of sCD26 and sCD30 were determined by a sandwich enzyme-linked immunosorbent assay in sera of study population.

**Results:**
There was a significant difference between the serum concentration of sCD26 in patients with brucellosis and healthy controls (P<0.0001). Otherwise, the serum levels of sCD26 were 847.07±249.7 and 504.97±165.6 ng/ml in brucellosis and controls, respectively. Meanwhile, there was no significant difference in sCD30 levels between brucellosis and controls (51.33±35.9 and 42.75±20.87, P=0.08).

**Conclusion:**
These findings indicate that sCD26 levels are significantly higher in brucellosis. This confirmed our hypothesis and previous studies which showed Th1-type responses in human brucellosis.
Comparative evaluation of urinary tract infection among cigarette smokers and non smokers attending to Amirkabir Polyclinic in Ahvaz, Iran, 2005-2006

S. M. Alavi
Ahvaz Jundishapoor University of Medical Sciences, Ahvaz, Khuzestan, Iran, Islamic Republic of

Background: Impairment of alveolar mononuclear cell function due to cigarette smoking may increase the rate of respiratory infections. However, increased susceptibility of smokers to infections of other organ implies that tobacco effect is not restricted to the respiratory immune competent cells. The aim of this study was to assess the effect of smoking on urinary tract infection.

Methods: This prospective study was performed among 51 cigarette smokers (as cases) and 51 non smokers (as controls), matched for sex and age, from Sept 2005 to Sept 2006 in Ahvaz a city in southern west of Iran. Urinary infection was diagnosed by urine culture (colony count 105 bacteria per ml (male/female) with sensitivity 90% and specificity 95%). A questionnaire including demographic and clinical characteristics was fulfilled for each individual. Data were analyzed in SPSS 13 by chi square test, P<0.05 were considered significant.

Results: The incidence rate of urinary infection in smokers and non smokers were 27.5% and 21.6% respectively (p>0.05). The rate of two or more attack of urinary infection due to relapsed infection in smokers and non smokers were 50% and 27.3% respectively (p<0.05). Infection with more than one microorganism in smokers and non smokers were 71.4% and 12.5% respectively (p<0.05).

Conclusion: Cigarette smoking does not increase the risk of urinary tract infection, but, increases the number of involved microorganisms and relapse of infection.
Prosthetic valve Endocarditis caused by Actinobaculum schaalii

M. Hoenigl¹, T. Valentin¹, E. Leitner², L. Masoud³, H. J. Salzer¹, R. Raggam², G. Zarfel², R. Krause¹, A. J. Grisold²
¹Medical University Graz, Graz, Austria, ²Medical University of Graz, Graz, Austria

Background: Actinobaculum spp. are gram-positive rods closely related to the genus Actinomyces. Actinobaculum schaalii is reported to cause urinary tract infection and urosepsis and has been recovered from human blood, urine, and abscess formations of the spine in elderly patients with underlying urological conditions.

Methods: Case report:
A 52-year-old male, with a complicated past medical history with mechanic valve replacement of the aortic valve two years previous was admitted in April 2009 with fever, elevated CRP and Janeway’s lesions on his hands and feet. Two months previous he was admitted with fever, one blood culture was found positive and gram stain showed gram positive coccoid rods which, however, could not be recultured at that time. On the current admission growth of Actinobaculum schaalii was detected in bloodcultures collected >12h apart. According to modified Dukes criteria infective prosthetic valve endocarditis was diagnosed. Antibiotic therapy with amoxicillin-clavulanate was initiated for a total of 8 weeks; prosthetic-valve operation was refused since the transesophageal echocardiogram when repeated after initiation of antibiotic therapy was negative for IE (one week before it showed possible vegetation on the aortic valve). The patient’s condition thereafter improved and two weeks later the patient was discharged in good clinical condition.

Results: Microbiological Analysis:
Two aerobic and one anaerobic blood culture bottles (collected on three different days) were positive for growth after 4-5 days of incubation. Gram stain from the pellet showed gram-positive, coccoid rods. Within 24-48 h the isolate yielded growth on blood-, chocolate- and Schaedler agar, with grey colonies 1-2 mm in diameter. 16S rRNA gene analysis achieved homology of 99% for Actinobaculum schaalii, with the accession number GQ355962. MIC of 0.25 mg/L for amoxillin-clavulanic acid was obtained by Etest method. Knowing the result of the blood cultures, urine, taken before initiation of antibiotic therapy was tested negative for Actinobaculum spp., despite prolonged incubation in both, ambient air and 5% CO2.

Conclusion: We report the first isolation of Actinobaculum spp. from a patient without underlying urological conditions but recurrent bacteraemia and infective endocarditis using modified Dukes criteria. Despite extensive diagnostic procedures no further focus of infection and no further detection of pathogens were found.
Isolation and identification of lower respiratory tract bacterial infections and its antibiotic sensitivity pattern from urban sanitary workers

S. Ramachandran¹, K. Radhakrishnan², M. Mandal¹
¹Indian Institute of Technology, Kharagpur, West Bengal, India, ²Bundelkhand University, Jhansi, Uttar Pradesh, India

Background: Respiratory infections are one of the major causes of death in developing countries. Worldwide five million deaths occur per year that is 10,000-15000 deaths per day. The respiratory tract contains a number of distinct ecosystems, each with its unique microbial flora. Both upper & lower RT’s are protected from inhaled particles naturally, by many mechanisms. In respect to this, certain microorganisms are considered to be aetologic agent of diseases, evade the host immune system by multiplying within the host cells. The etiology & symptomology of respiratory disease vary with age, season, type of population at risk & other factor. This study reveals specifically about the bacterial flora in lower respiratory infections among sanitary workers. Bacterial infections are mainly about by organisms such as Pneumococcus, S. aureus, P. aeruginosa, Klebsiella sps. A total 76 different respiratory samples from LRT were analyzed in this study to find out predominant infections of LRTI. Antibiotic susceptibility pattern of both Gram positive & Gram negative bacterial isolates from LRTI and the associations mixed infections in lower RTI are also evaluated in this study. Sensitivity pattern among gram positive strain shows S. aureus shows remarkable resistance to the antibiotics and gram in negative P. aeruginosa.

Methods: Specimens: 76 respiratory samples collected were sputum & rarely nasopharyngeal swab & throat swab. Collection: with sterile cotton tipped wooden swab.

Fresh sputum is collected in a sterile wide mouth glass container, homogenised for 10-15 mins in vortex mixer.

Identification of bacterial isolates:
Wet mount, Gram staining, Culture method, Biochemical tests: (IMViC, Catalase, urease, sugar, TSI, oxidase, catalase etc..) Antibiotic susceptibility test (Disc diffusion method).

Results: A total 76 different respiratory samples from LRT were analyzed in this study to find out predominant infections of LRTI. in this we identified the following genus Pneumococci, Beta hemolytic streptococci, Staph. epidermidis, Klebsiella, Staph. aureus, Pseudomonas, E.coli, Serratia, Micrococcii, and S. Viridans. Among this predominant are Pneumococcus, S. aureus, P. aeruginosa, and Klebsiella sps.

Bacterial Isolates from LRT

Conclusion: Even though LRT possess nature defence mechanisms, certain microbes habitats in LRT. among these the most vulnerable are Pneumococcus, S. aureus, Klebsiella. The antibiotic resistance remarkably shown by S. aureus and P. aeruginosa.
Concurrence of multiple autoimmune and dysreactive disorders. Clinical-patogenetic correlations, and systemic infectious complications

R. Manfredi
University of Bologna, Bologna, Italy

Background: Since mid-sixties, the association between miasthenia gravis, thymectomy for disease control, and development of autoimmune disorders (systemic lupus erythematosus, ulcerative colitis, rheumatoid arthritis, lichen planus), is known, while the relationship with the occurrence of systemic infectious complications is less known (underlying immunodeficiency, iatrogenic immunosuppression?).

Methods: A 26-y-old female patient (p), with a post-thyroiditis hypothyroidism, polycystic oophoritis, and a diagnosis of myasthenia gravis posed 4 y before, developed an ileal-colonic Crohn’s disease treated since 2 mo with steroids.

Results: When moved to our Division due to septic hyperpyrexia, not responsive to an empiric antimicrobial therapy, and with a presumed allergic-toxic rash, underwent a further workup. An evident leukocytosis (WBC 23,550/µL, 88.3% neutrophils), was associated with increased ESR (86), mild hepatocytolysis, hemorrhagic conjunctivitis, and nodular erythema. An ultrasonographic-CT scan suggested a multifocal pyelonephritis, confirmed by the isolation of E. coli at urinalysis. Combined, full-dose cefotaxime-metronidazole, was changed upon discharge with ciprofloxacin, and with the reintroduction of steroids for Crohn’s disease.

Conclusion: A large number of predisposing conditions make subjects suffering from autoimmune/dysreactive disorders prone to develop severe infectious complications, including the frequent immunosuppressive therapies, and the multiple immunodeficiencies detected when diagnosing these conditions. In the reported p, an autoimmune thyroiditis, a myasthenia gravis, a Crohn’s disease, and an erytema nodosum were disclosed in a young female p aged 26. Consultants requested of diagnosis-management of complications, should take into consideration the heterogeneous systemic background of each disease presentation, and their possible complications, with a proportionally elevated risk of infectious diseases, which take advantage from the chronic administration of steroids or other immunosuppressive drugs, and the unbalanced immune system, usually shifted towards a Th1 response, which tends to balance the increased Th2 activity typical of autoimmune disorders. As known, p with chronic inflammatory bowel diseases suffer from myasthenia gravis with a greater frequency vs the general population. From a pathogenetic point of view, the intrathymic maturation process of T-lymphocytes is altered during myasthenia gravis, while intrathyrmic B-lymphocyte abnormalities may support autoimmune disorders. In cases like ours, the concurrence of multiple disorders may complicate the differential diagnosis, and hamper a prompt recognition and management of potentially severe infectious complications.
In vitro antimicrobial sensitivity trends of Enterococci isolated at an Italian teaching Hospital. A 2005-2008 prospective report including 3,362 examined microbial strains

R. Manfredi
University of Bologna, Bologna, Italy

Background: The increasing temporal trend of antimicrobial resistance among Gram-positive cocci (including Enterococci) is of concern, especially among inpatients.

Methods: The temporal trend of the in vitro antibiotic susceptibility rates was examined for all Enterococcus faecalis and Enterococcus faecium strains, isolated at our General Teaching Hospital during the years 2005-2008. The same pathogen isolated more than once from the same patient within one month, has been considered once.

Results: Among Enterococcus faecalis isolates (2,735 strains tested on the whole), the greater activity rate was achieved by linezolid (100% of tested strains), followed by teicoplanin (97.9-99.3% of strains), nitrofurantrin (94.9-97.4%), vancomycin (81.4-93.8%), ampicillin (86.5-91.0%), penicillin (84.6-90.9%), while irregular variations of sensitivity occurred over time for gentamicin (>53% of tested strains), streptomycin (>72% of strains), and tetracyclines (<21% of strains). When considering Enterococcus faecium strains (627 overall isolates), only linezolid maintained a 100% in vitro activity, followed by teicoplanin (87.2-97.1% of tested strains), vancomycin (59.1-92.5% of strains), tetracyclines (54.7-78.9%), and gentamicin (58.0-71.9%), while unpredictable efficacy was shown by streptomycin (25.0-76.5% of tested strains). Sixty-six strains of vancomycin-resistant Enterococcal strains (VRE) were detected, but with a clearly decreasing trend from 2005 (21 cases) to 2008 (7 cases only) (p<.001). With regard to temporal trends of susceptibility rates of other molecules, no statistically significant differences were observed in the 4-year period of prospective monitoring.

Conclusion: A prospective surveillance monitoring of the in vitro antimicrobial sensitivity figures of Enterococci as relevant hospital pathogens, plays an useful role to target antimicrobial treatment and prophylaxis strategies, on local and regional basis. The emerging of resistance to the reference compounds, and that of vancomycin-resistant organisms in particular (VRE), may be also well assessed on these temporal basis, in order to address the clinical choice according to the local epidemiology and antimicrobial testing features.
Urinary tract pathogens among inpatients at a large Italian General Hospital. A prospective, observational study

R. Manfredi
University of Bologna, Bologna, Italy

Background: A standardized, prospective microbiological surveillance study of urinary tract infection is ongoing at our Hospital.

Methods: The temporal trend of microbial isolates from urines of inpatients hospitalized during the last available calendar year (2008), was evaluated quarterly according to the main bacterial and fungal isolates. The same pathogens cultured more than once from the same patient within one month, have been considered only once.

Results: Of 2,327 overall episodes (as defined above), 983 (42.2%) were determined by *Escherichia coli*, followed by *Enterococcus fecalis* (443 episodes: 19.0%), *Proteus mirabilis* (156 cases: 6.7%), *Klebsiella* spp. (152 episodes: 6.5%), *Pseudomonas aeruginosa* (117 cases: 5.0%), *Enterococcus faecium* (56 episodes: 2.4%), while the first fungal pathogen was *Candida albicans* (70 episodes: 3.0%). During the proportionally short observation period, no significant variations occurred in the frequency of isolation of each mentioned urinary tract pathogen, when excluding a mild increased frequency of *Enterococcus faecium* and *Enterobacter cloacae* (*p*<.07).

Conclusion: A prospective microbiological observation study significantly adds to the knowledge of local epidemiological figures and antimicrobial susceptibility pattern of hospital-associated infections, including urinary tract infections, which are responsible for considerable morbidity among inpatients. During the still limited (one year) observation time, modest variations occurred in the frequency of isolation of the most frequent microorganisms, with *Escherichia coli* representing over 40% of cultured organisms, followed by *Enterococcus faecalis* (which proved responsible of around 19% of overall episodes). The tendency towards an increased incidence of *Enterococcus faecium* and *Enterobacter cloacae* is of concern, given the unpredictable antibiotic sensitivity profile of these last microorganisms.
An HIV-infected patient with associated, lethal rhinopharyngeal actinomycosis and a rapidly progressing local adenocarcinoma

R. Manfredi
University of Bologna, Bologna, Italy

**Background:** Solid malignancies, including those with atypical presentations, are increasing 12 years after the introduction of combined antiretroviral therapy (cART), and the differential diagnostic problems may be increased by the eventual concurrence of superinfections.

**Methods:** An extremely infrequent episode of associated nasopharyngeal squamous adenocarcinoma plus an underlying actinomycosis occurred in a HIV-infected male patient (p) with a previous diagnosis of AIDS, treated with cART taken with insufficient adherence, so that a satisfactory immune system recovery (as expressed by a CD4+ count persistingly >400 cells/µL), was in contrast with a low-level persistence of detectable HIV viremia, and extensive genotypic drug resistance mutations.

**Results:** Interestingly, a number of local and specific risk factors for both neoplastic and infectious disorders were recognized by caregivers (tobacco smoke, long-term inhalatory substance abuse, in particular cocaine, and a half-professional mushroom-truffle search and evaluation also by systematic smelling). Although an appropriate and timely diagnostic workup carried out with repeated, combined computerized tomography, magnetic resonance imaging, and fiberoptic rhinoscopy with multiple biopsy and histopathologic studies, the final diagnosis of a combined, dual neoplastic-infectious pathology occurred only after a demolitive surgical intervention and subsequent pathology studies. Despite a correct antimicrobial therapy, and an associated radiotherapy and cytotoxic chemotherapy schedule, a rapid dissemination of multiple secondary lesions to the brain rapidly led our p to death.

**Conclusion:** The particular epidemiological issues, and the imaging and histopathological diagnostic workup of dual illnesses of our HIV-infected p, and its therapeutic and outcome features, are presented and discussed on the ground of the available literature evidences. To the best of our knowledge, no cases of associated actinomycosis plus a local, underlying squamous cell adenocarcinoma of the same ear, nose, and throat district occurred until now in both HIV-infected and also non-HIV-infected p, so that health care professionals should take into careful consideration even a dual etiology, when facing p with rhinopharyngeal mass lesions, with multiple risk factors for different diseases.
Current status of infectious diseases in Balochistan and Afghanistan

S. tareen
CASVAB UNIVERSITY OF BALOCHISTAN, QUETTA, PAKISTAN, Pakistan

**Background:** Any disease caused by pathogen which subsequently grows and multiplication in the body. In a infectious is a clinically evident microbial agent. A pathological condition spread among biological species infectious disease. Although varied in their effect are always associated with viruses, bacteria, fungi, protozoa, multicellular parasites and proteins known as prions. A complex series of steps mediated by factors by both the infectious agent and host is required for microorganism (Prion) to established an infectious disease. The damage that microorganism cause is directly related to the toxin. They produce toxin and varied in their mechanism of action. The causes of infections are associated with geographical distribution and genetic predisposition. The aim of this study was to determine the occurrence of infectious disease in different area of the Balochistan (Pakistan and Afghanistan).

**Methods:** The propose study was conducted on all diagnosed infected patients admitted to or attending the Sandeman Provisional hospital, combined military hospital, BMC along with private clinic and also come from neighbor country, Afghanistan to Quetta the capital city of Balochistan. The infected patients of these hospitals and private clinics quetta were included in the study of specific period of six months for the collection of data, physical examination, medical history, treatment and follow up.

**Results:** The most infected patients were observed in Balochistan and Afghanistan. The most common causes of infectious disease in Balochistan is viral, bacterial and parasidal that is hepatitis, enteric fever and malaria and in Afghanistan that is Tuberculosis, sexual transmitted disease in Leishmanisis. Leishmanisis is observed as solo causes of infectious disease.

**Conclusion:** The Afghanistan people are dominant group in the infected patients of Quetta. As in Afghanistan there is no proper facilities and skill persons in hospitals and clinics for the patients. So for the treatment they come through Chaman (city of Balochistan) to the nearest city of Quetta (Pakistan). Malaria and enteric fever is the most common causes in both country of the region followed by Tuberculosis, sexual transmitted diseases and Hepatits.
Determination of Mycobacterium tuberculosis in hospitalized patients referred to Central Laboratory of Ghaem Hospital during 2001-2008
R. Akhavan1, Z. Meshkat1, M. Meshkat2, S. Amel Jamedar 1
1Mashhad University of Medical Sciences, Mashhad, Iran, Islamic Republic of, 2Islamic Azad University, Mashhad Branch, Mashhad, Iran, Islamic Republic of

**Background:** With the increase in the worldwide prevalence of HIV infection, tuberculosis was known again as a major global public health problem since 1991. The aim of study was to do a disease prevalence survey of tuberculosis in suspicious hospitalized patients.

**Methods:** Samples from 17942 patients admitted in various hospital units of Ghaem hospital during the years 1380-1387 were analyzed for *Mycobacterium tuberculosis* with direct microscopy and culture methods.

**Results:** From 17942 studied samples, 5686 patients were in Thorax Unit, 902 in Cardiology Unit, 3653 in Internal Medicine Unit, 2184 in Surgical Unit, 4501 in Infectious Disease Unit, 196 in Pediatrics Unit, 211 referred from Bronchoscopy Unit and 609 patients were from other departments of the hospital. The prevalence of tuberculosis in each part was as follows: 7.4% in Thorax Department, 3.1% in Cardiology, 6.1% in Internal Medicine, 7.5% in Surgery, 13.1% in Infectious Disease, 3.6% in Pediatrics, 8.1% in Bronchoscopy and 5.9% in other departments.

From different types of samples that were studied, 12.3% of bronchial samples, 1.8% of pleural fluid, 1.9% of CSF, 1% of ascitis fluid, 8.4% of sputum, 1.9% of urine samples and 7.1% of other samples were positive for *Mycobacterium tuberculosis*.

**Conclusion:** The most prevalence of *Mycobacterium tuberculosis* was in the Infectious Disease Unit (13.6%) and belonged to bronchial samples (12.3%). The prevalence of *Mycobacterium tuberculosis* in different genders was statistically significant (p<0.0001).
Characterization of *Salmonella enteritidis* isolated from foods and patients in northern Morocco

**M. abid**
Pasteur Institute of Morocco, tangier, Morocco

**Background:** Objectives: This study aimed to investigate *Salmonella* Enteritidis strains isolated from human and food sources in the north of Morocco by means of phenotypic and genotypic methods.

**Methods:** Methodology: Fifteen isolates from humans and food were submitted to phage typing, *XbaI*-macrorestriction (pulsed field gel electrophoresis [PFGE]), enterobacterial repetitive intergenic consensus (ERIC-PCR), antimicrobial susceptibility testing, and PCR assay targeting the *spvR* and *invA* genes.

**Results:** Results: Six fingerprinting profiles were obtained with the ERIC-PCR method, four with PFGE profiling, five with antimicrobial resistance, three with phage typing, and only one with plasmid profiling. *spvR* gene was detected in six strains, which did not harbour plasmids of 90 kb.

**Conclusion:** The conclusions of this study are drawn from a limited number of isolates. It would be desirable to investigate a greater and more diverse population of *Salmonella* isolates. *S. Enteritidis* was genotyped and showed four different patterns by PFGE and six by ERIC-PCR. Accordingly, high genetic similarity and limited genetic diversity were found for these strains from north of Morocco.
Botulism outbreak North in Iran: Five cases of a family
F. Abbasi¹, P. Vahdani ¹, H.-R. Behzad ¹, M. Beshart², M. Haghighi², K. Aghazadeh Sarhangipour², A. Faghihi³
¹Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of, ²Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of, ³Shiraz University of Medical Sciences, Shiraz, Iran, Islamic Republic of

**Background:** Despite many food borne diseases which require only supportive therapy, botulism needs special attention and specific therapy and has a high mortality without therapy.

**Methods:** We report an outbreak of botulism in five members of a family in north of Iran due to consumption of a sort of food. They were treated with trivalent botulinum antitoxin. Toxicology on stool and food material was positive for botulinum toxin A.

**Results:** Two weeks after administration of antitoxin, clinical symptoms such as ptosis, blurred vision, diplopia, and muscle power improved and side effects like anaphylactic shock, local skin reaction and serum sickness were not seen.

**Conclusion:** Despite high mortality rate, appropriate diagnosis and treatment play a great role in patients’ improvement. Precise history taking, complete physical examination and considering botulism, will reduce mortality. It is necessary to teach people about preparation of canned food.
Tetanus immunity in 50 years of age and older persons in Kashan, Iran
R. razaghi, A. khalifesoltani, M. Momen Heravi
kashan university of medical sciences, kashan, isfahan, Iran, Islamic Republic of

Background: Tetanus usually results from contamination of a wound with soil containing spores of Clostridium tetani, which germinate and release neurotoxin. The organism does not spread from person to person and, herd immunity plays no role in its control. Tetanus is rare in people who have received a complete vaccination course. Most hospitalized cases and virtually all deaths occur in people over 60 years of age. This study was conducted to evaluate tetanus immunity in 50 years of age and older in kashan.

Methods: This cross-sectional survey was conducted on 180 randomly selected adults, 50 years of age and older who came to a laboratory in kashan. A questionnaire consisting demographic data and history of vaccination was filled and 5cc blood taken from selected persons and tetanus toxoid-specific antibodies were measured in serum by enzyme-linked immunosorbent assay (ELISA).collected data were analyzed by SPSS.

Results: Sixty five per cent of adults 50 years of age and older(72.4% of females and 56.3% of males) had no protective levels of tetanus antitoxin ( < 0.1 IU/mL). There was a significant decline in the prevalence of immunity with increasing age .100% of persons 80 years of age and older had no protective tetanus immunity.63.6% of urban and 67.6% of rural persons had no protective immunity

Conclusion: The most adults 50 years of age and older do not have protective levels of tetanus antitoxin because of inadequate vaccination coverage in this age group. There is a need to improve the immunity levels of this age group. The greatest benefit of any immunization strategy would be gained by targeting this group.
The fallacies of prior trials of biomarker neutralization in sepsis are not applicable to procalcitonin

K. Becker, R. Snider, E. S. Nylen
Veterans Affairs Medical Center, Washington, DC, USA

Background: Sepsis affects 750,000 Americans yearly, and 25-30% die; this is more than for cancer of the lung, breast, and AIDS combined. Because of the aging population and the alarming bacterial resistance to antibiotic therapy, sepsis is increasing by 8% per year.

Methods: A retrospective analysis was performed to determine the cause of failure of sepsis therapy trials over the past two decades (97 publications; animal and human).

Results: Firstly, many studies involved animal models that were very different from human sepsis. Secondly, patient selection usually was clinical, and not confirmed by laboratory testing. Thirdly, most importantly, the presumably toxic biomarkers often were inappropriate. Multiple attempts were made to combat or neutralize these biomarkers or bacterial products (TNFa, IL-1b, IL-1 receptor, endotoxin [LPS], Enterobacteriaceae common antigen, platelet activating factor, prostaglandins, bradykinin, phospholipase A2). However, these trials were deeply flawed: 1. Often the animal models were not similar to human sepsis. 2. Some markers were employed that were not convincingly toxic. 3. Nearly all of these markers were increased only initially, or were transient, erratic, or unpredictable. 4. Additionally, with only rare exceptions the biomarkers were not determined prior to therapy. This often led to attempted treatment of patients who were not actually septic; thus, confounding stratification of severity of illness, and necessitating the study of needlessly large populations.

Our laboratory has demonstrated the marked utility of antibody neutralization of procalcitonin in sepsis. We and many others have demonstrated its toxicity, shown its rapid and uniform increase in the blood at the onset of the disease, demonstrated that high levels persist as long as the illness lasts, and shown that these levels correlate with severity and mortality. This marker can be measured accurately in 20 minutes (Kryptor technique). We have documented the marked efficacy of immunoneutralization in two animal species harboring a deadly sepsis that is not dissimilar to that of the human.

Conclusion: The advantageous characteristics of procalcitonin and its therapy have not been fulfilled for any marker that has previously been studied.
Osteoarticular complications of brucellosis in Kashan, Iran

K. esalatmanesh¹, Z. soleimani², A. arj³, M. Momen Heravi⁴
¹medical science university, kashan, esfahan, Iran, Islamic Republic of, ²infectios disease department, kashan, Iran, Islamic Republic of, ³internal medicine department, kashan, Iran, Islamic Republic of, ⁴kashan university of medical sciences, kashan, isfahan, Iran, Islamic Republic of

Background: Brucellosis is a zoonosis disease. This disease have multiple complication in patient. Complications involving multiple organs and most of all the musculoskeletal system. This study done to determine the frequency and clinical characteristics of osteoarticular complications of brucellosis in an endemic region in Iran

Methods: This prospective study done on 202 patient that had Brucellosis in Kashan between January 2003 and January 2006. Patient had positive agglutination test and clinical manifestation for brucellosis. We used clinical manifestation and X-ray for complication

Results: Sixty eight patient (33.7%) had osteoarticular complication. Sacroiliitis was the most common complication (78.8%), followed by spondylitis (22.3%) and peripheral arthritis (4%).

Conclusion: Osteoarticular disease is the most common complication of brucellosis in Kashan in Iran. Sacroiliitis is the most common form of osteoarticular complication. Recovery is good with the use of a proper treatment regimen.
Mycobacterium tuberculosis infection presenting with cutaneous abscess, osteomyelitis: a case report and review of the literature

K. esalatmanesh¹, Z. soleimani²
¹medical science university, kashan, esfahan, Iran, Islamic Republic of, ²infectios disease department, kashan, Iran, Islamic Republic of

Background: Mycobacterium tuberculosis is a multi-systemic infection. Extrapulmonary manifestation and pleural tuberculosis occurs in 5% of tuberculosis. M tuberculosis is rarely associated with cutaneous or osteoarticular infection. Overall cutaneous tuberculosis accounts for 14% of all cases of tuberculosis.

Methods: Here in a case of mycobacterium tuberculosis infection presenting with cutaneous abscess, osteomyelitis is reported. A 16 year old Afghanian female immigrant presented to his internist with a 4x3 cm right ankle and foot abscess and cellultes, 3 x 3 cm left palmar abscess, 5x6 cm sternal abscess and cellultis which had been present for 2 month.

Results: Foot X Ray reveal osteomyelitis in third metatars and coniform. Spiral CT scan of the chest demonstrated a low density area (3.0 x 5.2 cm with central low density, suggestive of necrosis) with irregular border and enhancement inside the R.pectorals major muscle with partial extension to the intra thorasic area. purified protein derivative (PPD) was 22mm. Biopsy of soft tissue from foot (and culture) was negative for mycobacterium and fungi and nocardia. Biopsy from bone reveal: growth of acid fast bacill after 45 days. The patient responded favorably to standard anti tuberculous regimen. Our case is very good after 12 mouth.

Conclusion: cutaneous tuberculosis should be included in the differential diagnosis of patients with cutaneous abscesses or musculoskeletal complaints, particularly in high risk populations such as immigrants from endemic regions and immunosupressed patients. He underwent to cure and improvement with anti tuberculous regimen. anti tuberculous regimen
Community-acquired multi drug-resistant Klebsiella meningitis in a 23 year-old man
F. Abbasi¹, M. Aghahasani², S. Korooni Fardkhani ², S. Gholamin²
¹Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of, ²Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of

**Background:** Early diagnosis and appropriate empirical treatment of bacterial meningitis reduce morbidity and mortality. Prevalence rates of different causative pathogens associated with bacterial meningitis can depend on age, the underlying medical condition, way of infection and geographical distribution. Klebsiella infection has been considered to be an uncommon cause of meningitis. Klebsiella may produce extended-spectrum beta-lactamases.

**Methods:** The patient was a 23 year-old man with chief complaint of chills, fever and headache with T= 40.5 °C, PR= 110/min, RR= 24/min and BP= 110/70 mm Hg. He had neck rigidity, Kernig and Brudzinski test were positive. Lumbar puncture performed that documented meningitis.

**Results:** CSF smear showed Gram negative bacilli. Vancomycin and meropenem started for him with good clinical response. CSF culture showed Klebsiella that was resistant to gentamicine, amikacine, ceftizoxime, ceftriaxone, ceftazidime, ciprofloxacin and meropenem.

**Conclusion:** Clinicians should be aware of Klebsiella pneumoniae as an important CNS pathogen. Although third-generation cephalosporins have had a major impact on the outcome of Klebsiella pneumoniae CNS infections, the emergence of extended-spectrum beta-lactamase-producing strains may lead to their reduced efficacy in this clinical setting.
Recurrence pericardial effusion complicated by cardiac tamponade due to brucellosis
F. Abbasi¹, M. Mardani ², S. Korooni Fardkhani ², S. Gholamin ²
¹Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of, ²Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of

**Background:** Brucellosis is a zoonosis, recognized worldwide as a serious public health hazard and economically significant disease. It is a multisystem disease that may present with a broad spectrum of clinical manifestations and complications. Pericarditis and pericardial effusion are rare complications of brucellosis.

**Methods:** We presented a 40 year-old woman with recurrent pericardial effusion complicated by cardiac tamponade due to brucellosis. We detected high titer of wright and 2ME in serum and pericardial fluid. Tamponade was drained and patient was treated with rifampin, streptomycin and trimetorim-sulfamethoxazole.

**Results:** Biopsy of pericardium showed chronic inflammatory process. Echocardiography was normal several days after treatment. The patient discharged from hospital with good general condition. After several months no complication occurred.

**Conclusion:** Pericardial effusion and cardiac tamponade can occur as complication of brucellosis. Brucellosis should be considered as a cause of pericardial effusion and cardiac tamponade in endemic area.
Extracardiac manifestations of infective endocarditis
A. Kica Canaj¹, D. Kraja², N. Como³, A. Kica¹, K. Duraku¹
¹HUC, Tirane, Albania, ²Faculty of Medicine, Tirane, Albania, ³University Hospital Centre "Mother Theresa", Tirane, AL, Albania

Background: The aim of this article is the highlighting of extra-cardiac complications of infective endocarditis. This material consists in 26 cases (bacterial 25, mycotic 1) with Infective Endocarditis, ages 14-70 years old, from 1975-2008.

Methods: After the following tests as semiotics, clinical-biology, imagery and anatomo-pathology of infective endocarditic, we have listed their extra-cardiac manifestations based pathogenic mechanism, topographic localisation and frequency.

Results: Co-relation of pathogenic mechanism with affected organs resulted in:

<table>
<thead>
<tr>
<th>Affected organ</th>
<th>Number of cases</th>
<th>In percentile (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>spleen</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>lungs</td>
<td>3</td>
<td>11.5</td>
</tr>
<tr>
<td>brain</td>
<td>3</td>
<td>11.5</td>
</tr>
<tr>
<td>eye</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>ear</td>
<td>1</td>
<td>3.8</td>
</tr>
<tr>
<td>mesentery</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>skin</td>
<td>8</td>
<td>30.8</td>
</tr>
<tr>
<td>finger tips</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>toe tips</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ear tips</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>nails</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>penis</td>
<td>1</td>
<td>3.8</td>
</tr>
<tr>
<td>kidney</td>
<td>2</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Table 1: With embolic mechanism

<table>
<thead>
<tr>
<th>Affected organ</th>
<th>Number of cases</th>
<th>In percentile (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>urticarial vasculitis of skin</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>erythematic</td>
<td>1</td>
<td>3.8</td>
</tr>
<tr>
<td>erythematic-petechial</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>meningitis</td>
<td>1</td>
<td>3.8</td>
</tr>
<tr>
<td>glomerulonephritis</td>
<td>2</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Table 2: With immune mechanism

<table>
<thead>
<tr>
<th>Affected organ</th>
<th>Number of cases</th>
<th>In percentile (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>severe sepsis</td>
<td>7</td>
<td>26.9</td>
</tr>
<tr>
<td>septic shock</td>
<td>3</td>
<td>11.5</td>
</tr>
<tr>
<td>septic multiorgans failure</td>
<td>2</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Table 3: With microbic mechanism

<table>
<thead>
<tr>
<th>septicopyemic</th>
<th>Number of cases</th>
<th>In percentile (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bacterial (in brain, spleen, kidney, lungs)</td>
<td>2</td>
<td>7.7</td>
</tr>
<tr>
<td>mycosis (candida) (in brain, lungs, liver, kidney, spleen)</td>
<td>1</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Table 4: With microbic mechanism

In 7 cases (38.9%) extra-cardiac manifestations occurred in affebrile periods.
In 5 cases extra-cardiac complications occurred before infective endocarditis was identified.

Conclusion: 1-Extra-cardiac manifestations were encountered on 18 cases (69.6%).
2-Have been distinguished their four pathogenic mechanisms:
a)embolic
b)immune
c)toxinemic
d)septicopyemic
3-Embolic phenomena was the most common of affected organs.
4-Extra-cardiac manifestations identified in 27.8% of cases.
Background: To present the epidemiological and clinical profile of Salmonella Disease at the territory of Municipality Kumanovo in the period of 7 years.

Methods: A medical documentation at patients diseased with Salmonella and who were treated at the Infectious Department in Kumanovo is analyzed. Diagnosis was based on epidemiological data, clinical picture, biochemical-laboratory analysis, positive coproculture and standardization of Salmonella with standard methods.

Results: Out of the 495 registered as Salmonella at the Infectious Clinic in Kumanovo, 256 (51.7%) patients were hospitalized. Those were the patients with more severe clinical picture in which acute dehydration, high temperature and stomach aches occur to be dominant. The highest percent (31.6%) are children at the age of 0-9 years which is mainly due to their higher sensitivity to the acute loss of fluids and electrolytes. Then it follows a group of adults and working people and people with over 60 years of age. People from the urban area represent 67.2%, with both sexes almost equally present. Seasonal character is also expressed, so the diseased patients were most in number during the summer months. From all isolates of Salmonella spec. most frequently occurring is Salmonella enteritidis with 64.5%, Salmonella typhimurium was isolated at 32.4%, Salmonella paratyphi B at 0.4% and Salmonella paratyphi C at 0.8%, and 1.9% are non standardized Salmonellas. Time period for treatment with Salmonella was from 5 to 24 days. Most of the patients received complete rehabilitation within 9-14 days. The treatment was with respect to the patient’s age and the severity of the clinical picture as well as in accordance to the collected results of the antibiogram.

Conclusion: Salmonella is present in our pathology. 51.7% were with more severe clinical picture. Most affected were children to 9 years of age representing 31.6%. Most frequently occurring Salmonella spec. is Salmonella enteritidis with 64.5%. The treatment and hospitalization period was in accordance to the patient’s age and the severity of the clinical picture.
Pseudomonas aeruginosa isolated from otitis externa associated with recreational waters in some public swimming pools in Tehran

M. Hajjartabar
Faculty of Health, Safety & Environment, Shahid Beheshti Medical University, Tehran, , Tehran, Iran, Islamic Republic of

**Background:** Pseudomonas aeruginosa is the most significant bacteria capable of multiplying in water especially in recreational waters. This bacterium is also the most commonly bacterial pathogen in ear infections. Although the bacterium is infrequently found in the normal ear, but the users of swimming pools may be at high risk of taking the disease.

**Methods:** The bacteriological quality and health risk of the water of eleven public outdoor and indoor swimming pools in East and North-East of Tehran was assayed. Useful information was recorded at the time of sampling. Samples tested for aerobic colony count, coliforms, Escherichia coli and Pseudomonas aeruginosa according to the Standard Method 20th edition. Ear swabs were collected from 179 users with a history of ear problems during the previous two weeks. An adequate control group was chosen randomly from those who never used the investigated pools.

**Results:** Pseudomonas aeruginosa was isolated out from 9 (81.8%) of the pools. P. aeruginosa was the only bacterium grew in 7 (63.6%) of the swimming pools water samples. In 2 (18.2%) other samples in addition to P. aeruginosa, high rates of total bacterial count, total coliforms and fecal coliform counts were found too. At the same time, *P. aeruginosa* was isolated from the ear swabs of 142 (79.3%) of the users, as well as from 4% of the controls. Results were matched for age, sex, duration of time spent in the pools, place of occurrence and other useful information.

**Conclusion:** The results of this research showed that otitis externa was strongly associated with the swimming pools, due to *P. aeruginosa*. Also findings of this study revealed contamination of the swimming pools with P. aeruginosa and often the chlorination process could not remove the pollution, especially when high numbers of people led to overuse of the pools, so more strict bathing water standards should be met in the public swimming pools in the city.
Primary bacteraemia caused by *Rhizobium radiobacter*

A. Y. Tezer Tekçe, O. Açikgöz
Türkiye Yüksek Ihtisas Education and Research Hospital, Ankara, Turkey, Ankara, Turkey

**Background:** Rhizobium spp. (R. radiobacter, R. rhizogenes, R. rubi, R. vitis) are aerobic, motile, non-spore forming, oxidase-positive, gram-negative bacilli. Although they are mostly plant pathogens, *R. radiobacter* may cause human infections. It is an uncommon oppurtunistic pathogen present in soil. It has been particularly associated with indwelling intravascular devices in immuncompromised patients. The aim of this report was to present a case of primary bacteremia caused by R. radiobacter in a patient with solid tumours.

**Methods:** Seventy year old male patient who had ureteral malign epithelial tumour with metastases to liver was admitted to urology department for resection of tumour. On the day 4, while he was screening for other metastases, patient was consulted by infectious diseases unit because of fever. The temperature was 38.6°C, white blood cell count was 14 800/mm³ (80.9% neutrophils), C-reactive protein (CRP) was 116 mg/L (normal : 5 mg/L), and erythrocyte sedimentation rate (ESR) was 92 mm/h. All other biochemical laboratory tests were unremarkable. Urine and sputum cultures were negative. Two sets of cultures which had been taken from a peripheral vein yielded a gram negative rod. Definitive identification of bacterium was made by the VITEK II automated system as *R. radiobacter*. Antimicrobial susceptibilities were as follows: amikacin, gentamicin, piperasillin tazobactam, meropenem, sefepim, ciprofloxcasin all were susceptible. Environmental samples were collected and cultured. All environmental samples failed to yield this organism.

The patient was treated with piperasillin tazobactam. The fever resolved 3 days later. the treatment was continued for 14 days.

**Results:** In our knowledge it is the third primary bacteremia with rhizobium radiobacter in the english literature. The portal of entry of the organism as well as the source of infection was unknown.

**Conclusion:** In summary, *Rhizobium* spp. are recognized as emerging pathogens affecting immunocompromised or debilitated hosts. The infection is commonly associated with the presence of medical devices and their removal may be essential for cure in some cases. This agent has a low virulence and unpredictable susceptibility patterns, but ceftriaxone, imipenem and the quinolones, including newer agents of the class, appear active against this organism.
Rapidly progressive and lethal septicemia due to infection with *Pasteurella multocida* in chronic hepatic disease

**A. Y. Tezer Tekçe, B. Mert Dinç, _, Kalkan, O. Önder, D. Etik, M. Akdo_an, N. _a_maz**
Türkiye Yüksek Ihtisas Education and Research Hospital, Ankara, Turkey, Ankara, Turkey

**Background:** *Pasteurella multocida* is a gram negative coccobacillus that is a zoonotic agent of human disease. It is present in the nasopharynx of cats and dogs. We report a case of rapidly progressive and lethal septicemia due to infection with *P. multocida* in a chronic alcoholic hepatic disease woman.

**Methods:** A 40-year-old woman was admitted hospital due to disturbance of consciousness. She had been well until a day earlier. Her medical history was significant for chronic hepatic failure due to alcohol abuse. She owned three cats but no evidence of bite or scratch marks determined.

On admission her temperature was 38.3°C, tachycardic. On examination her scleras were icteric, she was tachypneic but no ral or ronchus determined. The abdomen was distended and tender with evidence of massive ascites. She had bilateral peripheral edema and hepatosplenomegaly.

In her laboratory tests, leucocytosis, hypoglycemia, renal and hepatic dysfunction were determined.

Her consciousness worsened to deep coma but there were no signs of meningeal irritation. Her respiration had been depressed. She was immediately resuscitated. There was no abnormality in cranial CT. In abdomen USG hepatosplenomegaly and ascites had been determined.

Blood, deep tracheal aspirate, ascitic fluid and urine cultures were taken. Ascitic fluid cultured the blood, EMB and chocolate agar plate and blood culture bottles. Empiric therapy with piperacillin tazobactam was started.

The ascitic fluid PMN count is > 80% of white blood cells. None of the agar plate which ascitic fluid was cultured grew any organisms. But, gram negative coccobacilli were isolated from two unrelated blood cultures and ascitic fluid that cultured in blood culture bottles.

Identification of bacteria was made by the VITEK II automated system. It was susceptible to piperacillin tazobactam.

**Results:** Renal and hepatic functions progressively bacame worse. Although appropriate replacement therapy, after 18 hours cardiac arrest developed and no response was received to CPR and she died.

**Conclusion:** For preventing the *P. multocida* infections, it is important to inform immunocompromised patients about *P. multocida* infection and animal exposure.

For diagnosis, it is essential to obtain a detailed patient history about animal exposure and provide this information to clinical microbiology laboratory.
Final Abstract Number: ISE.087
Session: International Scientific Exchange

Mononucleosis inf. - Bacterial colonization/super infection among patients

L. Zabaznoska¹, L. Ilieva¹, V. SEMENAKOVA CVETKOVSKA²
¹University Hospital of Infectious Diseases, Skopje, Macedonia, ²University Clinick of Infectious Diseases, Skopje, Macedonia

Background: Mononucleosis inf. as a common expression of Epstein Barr virus (EBV) primo infection is characterized with the dominant triad of fever, pharingitis and neck lymphadenopathy. Lymphocitosis with predominant atypical lymphocytes are the main blood cells aberration. Diagnosis is based on the clinical expression, hematological findings and serological tests. Manifested EBV infection is most common among teenagers and adolescents, pointing out that there is an evident shift to childhood population. Aspects of the bacterial colonization/supper infection among patients with Mononucl. inf.

Methods: In the four yearlong period (2005-2009) 47 patient were hospitalized at the department for respiratory/herpes vv. infections. The youngest patient was 1.5 year, up to the age of 23, most frequently express in the groups aged 4-8 years (21 patient – 44.6%) and 14-18 (17 patients – 36.1%).

Results: Dominant signs such as chills, fever (>38°C), soar thought, dysphagia, abdominal discomfort, nausea, headache, myalgia/arthralgia, cough, subicterus were noted. Neck lymphadenopathy, mucopurulen inflammation of the pharyngeal tonsils (confluent/spotted), spleno/hepatomegaly was evident among all of the hospitalized patients and 37 (78.7%) had skin rush. Blood cells count was typical-leucocitosis (>103) with lymphomonocytosis (>40%). Bacterial colonization/supper infection was confirmed among 34 (72.3%) patients (Streptococcus beta haemoliticus (12 - 35.2%), Staph. Aureus (7 – 20.5%), Haemoph. Infl. (7 – 20.5%), Pneumococcus (4 – 11.7%), Moraxella cath. (4 – 11.7%), double poz. results among 3 (8.8%) patients. Mononucleosis inf. is common expression of the primo infection with EBV in the childhood up to adolescence, especially among children with chronic or recidivant tonsilar inflammation.

Conclusion: Bacterial colonization/supper infection is frequently confirmed during the basic viral infection, pointing out Str. Beta haem., also confirmed with AST (antistreptolysin level test) among 25 (53.2%) patients (200 IU/ml up to 1600 IU/ml (normal values <200IU/ml), CRP values up to 240 mg/l (<8mg/l normal). Antibiotic therapy lasted 7-14 days (procainbenzylpenicillin/cloxacillin-17 (36.1%) patients; cephalosporins – 23 (48.9%); cotrimoxasol - 8 (17%), hepatoprotective and symptomatic therapy.
Prediction of prognosis by clinical and laboratory findings in human leptospirosis

R. Ghasemian, N. najafi

1mazandaran university of medical sciences, 48167-13319, Iran, Islamic Republic of,
2mazandaran medical university, Sari, Iran, Islamic Republic of

Background: Leptospirosis is a worldwide zoonosis. North of Iran with lots of rice fields is an endemic area in our country with considerable cases of leptospirosis each year. Leptospirosis has wide range of clinical presentation. Although majority of cases are mild and self-limited but sever disease can occur and lead to death. The aim of this study was to evaluate epidemiological, clinical and laboratory features, and risk factors for mortality in leptospirosis patients in our area.

Methods: Of 304 adult patients who admitted in Razi teaching hospital (affiliated by Sari Medical School) with initial diagnosis of leptospirosis, 182 cases were confirmed with positive serology (MAT>1/80). Demographics, Clinical and laboratory findings and outcome of those 182 cases were collected. Clinical and laboratory findings of survivors and non-survivors were assessed by Chi square analysis and student t test. P <0.05 was significant.

Results: Of all 182 patients, mean age was 37.12 ±14.6 years, 85% were men and, 81% were farmers. Icterus occurred in 55.2%, and high fever was seen in 94.2% of the patients. The most frequently detected serotype were Leptospira Ballum(17%) and L.Sejroe (14.29%). Overall mortality rate was 6.6% with a higher mortality above age fifty. Diagnosis delay was an important factor lead to death and also failure to start the right therapy. Serum CPK, serum sodium, serum potassium, and platelet counts were significantly different between the two groups. Organ dysfunction was significantly associated with mortality. On multivariate analysis, hyponatremia, elevated creatinin level, elevated CPK, bleeding manifestations, pulmonary and cardiac dysfunction were found to be significant predictors of mortality.

Conclusion: Identification of patients who have poor prognostic factors in order to intense treatment is nessesary.early admission of such patients in intensive care unit could be life saving. The most important factor to prevention of mortality was early diagnosis.
A five years survey of Brucella epididymoorchitis in Mazandaran University of Medical Sciences
N. najafi1, R. Ghasemian2
1mazandaran medical university, Sari, Iran, Islamic Republic of, 2mazandaran university if medical sciences, 48167-13319, Iran, Islamic Republic of

Background: Epididymoorchitis is a focal form of human Brucellosis, described in 2 – 20% of patients with Brucellosis.

Methods: In this retrospective study, we report 18 cases of Brucella epididymoorchitis in Razi and Imam komeini University hospitals during 1997-2001. Agglutination titres ≥ 1:160 and positive clinical manifestations of Brucella epididymoorchitis were the main criteria of diagnosis.

Results: Epididymoorchitis occurred in 13% of the male patients with Brucellosis. The average age of the patients was 27 years. (rangings from 14 to 60). Pain and scrotal swelling (100%), fever (100%) and sweating (73%) were the most common symptoms. All patients had agglutination titers of > 1:160 (range, 1:160 – 1:2560) and 2ME titer of 1:80 (range, 1:80 – 1:640). Different regimens alone or in combination were administered as follows: doxycycline (5.05%), doxycyclin with rifampin (61.1%) or doxycyclin plus rifampin along with aminoglycoside for the first two weeks, (27.7%) and doxycyclin plus cotrimoxazole(5.5%). The minimal duration of therapy was 45 days. 8.88% of the patients did not respond to the antibiotics and required surgical drainage and orchiectomy.

Conclusion: In Brucellosis endemic areas, clinicians encountering epididymoorchitis should consider the likelihood of Brucellosis. A careful history, a proper physical examination and an immediate laboratory evaluation help the diagnosis. Generally, classical therapy of Brucellosis is adequate for the treatment of epididymoorchitis.
Listeria monocytogenes as rare but important cause of meningitis in immunosuppressed patients

A. Olczak, E. Grabczewska
Collegium Medicum The N. Copernicus University Poland, Bydgoszcz, Poland

Background: Listeriosis is a rare foodborne disease. Most cases occur in individuals with impaired cell-mediated immunity. The aim of the study is to present our experience with invasive nonperinatal listeriosis.

Methods: The records of patients hospitalized between January 2006 to September 2009 due to meningitis or sepsis caused by Listeria monocytogenes at Department of Infectious Diseases in Bydgoszcz were retrospectively reviewed.

Results: In the study period 7 cases (5-female, mean age 68.1 years) of microbiologically confirmed listeriosis were recognized. The risk factors for immunodeficiency were found. The prolonged steroid treatment due to connective-tissue diseases in 4 cases, cirrosis of liver - 1, alcoholism-1, lymphoma-1. Additionally diabette mellitus was presented in all cases, and for 2 patients it was the only suspected risk factor.

Clinical symptoms were similar in all cases with fever > 390 C, altered level of consciousness of any stage, headache and malse. In one case the new onset of generalized seizures was noted. CSF examination was performed in all cases. CSF abnormalities included: polymorfonuclear pleocytosis (71.4%), mononuclear pleocytosis (28.6%). The CSF/glucose ratio was normal in 1 case, and only in 2 cases was > 0.31. The Gram-stain was negative in all cases. The mean value for c-reactive protein in our patients was found 152.1mg/L, WBC ranged from 6.7-23.2x10^3 /mL. The empirical antibiotic treatment preceded correct diagnosis, and all patients were re-admitted for ampicillin (12g/day) and amikacin. The mortality rate was 14.3% (1/7).

Conclusion: Invasive listeriosis should be suspected in all immunocompromised or elderly patients with fever, altered mental status and CSF abnormalities. The empirical therapy of meningitis or fever of unknown origin for those patients should include ampicillin. Diabetes mellitus could be the only risk factor for immunodeficiency.
Osteomyelitis prevention and therapy

D. papa¹, R. Ariano², P. Buffa³, M. Bock³, V. Giudice³, M. Lagorio², G. Villani², A. Dusi⁵, M. de Lucchi⁶
¹hospital, sanremo, Italy, ² hospital, Bordighera, Italy, ³hospital, bordighera, Italy, ⁴hospital prosthetic unit, bordighera, Italy, ⁵microbiology, sanremo, Italy, ⁶san martino hospital, Genoa, Italy

Background: Osteomyelitis is a common complication of orthopaedic surgery. Sanremo-Bordighera hospital (for 150,000 inhabitants) has two units of orthopaedic: one for traumatology (about 750 pts/year (350 old people - femur fracture 90%- and 400 others pts.) and one for knee/hip prosthetic surgery (320/year) and a service for infection control and acute and chronic osteomyelitis therapy from 2007.

We present our experience

Methods: MM: we organized two lines of intervention:
1) pre-surgical profilaxis: clean (972 prosthetic and 1937 traumatologic surgery) with ultra-short schedule (1 dose of beta-lactamic or cefolosporin antibiotic ev. pre-operation), with personal modification for intollerance or allergy. For exposed fractures 2 ev. antibiotics x 5 days minimum.

2) osteomyelitis therapy
- post-operative: (<30gg) ev. antibiotic therapy with teicoplanin 10 mg /kg 1° day, then 3mg/ev x 2 weeks + levofloxacin 1000mg x os x 2 weeks.
- early and late: multidisciplinary diagnosis and therapy with microbiological cultures (60% staph. spp.+, 10% others, 30% negative), clinical, radiologic and scintigraphic evaluation pre and post treatment, stadiation according Cierny-Mader classification. Therapy: (ABT) in D.H. regimen, for gram+ infections and negative cultures, but clinical positive (90%): teicoplanin 10 mg/kg ev. x 2 times/week x 4 weeks, then 3mg/kg x 2 times/week x 8 weeks + 1000 mg levofloxacin x os+/− rifampicin 300x os if tolerated (same period).

Treatment: CM I° and II° stage: ABT+/ anti-staph. immunisation
CM III° and IV°: + iiperbaric medicine +/- surgery

Results: Post-operative: prosthetic 0/972, traumatologic: clean surgery: 17/1914 (60% diabetics), exposed fractures 4/23.

Early and late: total 45 pts, for complessive 61 treatments:
C-M I° and II°: healed with medical therapy 24+ 4 in course, two stage revision 6 (4 knee);
C.M. III° and IV°: 17: 7 healed, 6 stabilized, 4 in course, 1 osteotomy, 1 amputation

Conclusion: Osteomyelitis is the most important complication of orthopaedic surgery, is necessary an attentive control of all clinical situations by dedicated and expertise infectovlogist for quick diagnosis.
Rapid diagnosis is fundamental in post-operative infection.
For early and late osteomyelitis diagnosis is cathegoric to begin a multidisciplinary evaluation, if patient present pain in surgical site and/or modification of flogistic parameters.
Our results are very encouraging, but is necessary a strong attention and multidisciplinary collaboration for maintaining a constant level of performance.
Very promising is anti-staph. immunisation, but are necessary multicentric studies for validation.
Can additional use of a microbial sealant decrease surgical site infections in cardiac surgery?

P. Dohmen, T. Christ, J. Linneweber, W. Konertz
Charité Hospital, Medical University Berlin, Berlin, Germany

**Background:** Surgical site infection (SSI) is a serious complication in patients undergoing cardiac surgery. This study was performed to prove if additional preoperative preventive care by using a microbial sealant can reduce SSI.

**Methods:** From January 2007 and September 2009, 2981 consecutive patients underwent cardiac surgery. All patients received standard institutional preoperative preparation, however since January 2008 the additional use of a microbial sealant was introduced for all patients. National Nosocomial Infections Surveillance System (NNIS) risk index, EuroSCORE and the validated risk score of Fowler were used to evaluate patient's risk for SSI. The end-point of this study was freedom from superficial SSI or mediastinitis.

**Results:** The prediction scores for SSI in the cardiac surgery patients cohort without additional use of a microbial sealant in 2007 (n=977) or with additional use of a microbial sealant in 2008 (n=1250) and 2009 (n=754) were no statistical different. The 30-day follow-up was 100% completed. The freedom of superficial SSI, however highly significant decreased from 2007 to 2008 and 2009, respectively 3.9%, 2.2%* and 0.3%** (*p<0.018; **p<0.001). Similar results were found for freedom of mediastinitis, as a highly significant decrease was noticed from 2007 to 2008 and 2009, respectively 1.6%, 0.6%* and 0.3%** (*p<0.027; **p<0.006).

**Conclusion:** Thus, the prediction scores for SSI was similar in our patient cohort, adding a microbial sealant to standard institutional preparation highly significant reduces surgical site infections.
Ambulatory management of osteomyelitis: Descriptive analysis of private clinic experiences
E. Querales, G. A. Alvarez, G. A. Alvarez, J. Arvelaez, H. A. Mago
1Centro Policlinico Valencia, Valencia, Venezuela, 2Centro Medico Guerra Mendez, Valencia, Venezuela, 3Hospital Clinico Universitario, Caracas, Venezuela

Background: In the management of the infections in Venezuela, Osteomyelitis can be one of the most difficult because it often results in several physical and economic difficulties due to the expensive costs and the complexity of treatment and the procedures needed for the best evolution of the patients and their health restoration. Data regarding treatment of patients with osteomyelitis in this country is currently limited and not accurate when related to the type of treatment used and the result of it.

The main objective of this study is to describe the experience in osteomyelitis cases treated on a private clinic consult, from 2007 to 2009.

Methods: Retrospective review of charts from patients managed at a infectious disease medical consults from the year 2007 to 2009, analyzing age, sex, site of bone infection, microbial agent isolated, indicated treatment, time of treatment, ancillary procedures performed and evolution. The collected data was analyzed using SPSS.

Results: We did a retrospective evaluation of 25 patients aged 27 to 65 years old (average age 48.8 years) with diagnostic of Osteomyelitis, treated at our center. 68% were male. The most common site of infection was femur (24%) and tibia (24%), followed by foot (12%) and ankle (12%). The most frequent organism isolated was Staphylococcus aureus (48%), followed by Enterococcus spp (12%) Pseudomonas aeruginosa (8%) and Enterobacter (8%). The treatment was based on culture results and antibiotic bone in 92% of cases. 44% of the patients required additional surgical procedures. The evolution was satisfactory in 92% of cases.

Conclusion: The outpatient parenteral therapy is an alternative recommended in the management of osteomyelitis, facilitating the return of the patient to his regular activities and thereby reducing the cost of hospitalization when there were no alternatives of oral treatment.
A case of fulminant meningococcal sepsis and Waterhouse Friderichsen Syndrome
I. Rulli, L. Barbuscia, A. Cacciola, M. Manfrida, I. Barberi
Pediatric Intensive Care Unit, Messina, IT, Italy

Background: Neisseria Meningitidis (NM) is a commensal bacterium of human nasopharynx. Occasionally NM causes meningitis and sepsis. A fulminant form of meningococcal sepsis (MS) characterized is by a rapidly spreading purpura, haemodynamic instability and rapid progression to shock and death. The diagnosis is clinical and can be confirmed by isolation of NM and bacterial antigens in blood or cerebrospinal fluid. The laboratory parameters include alterations of base excess, lactate, C-reactive protein, platelet count, coagulation and glucose metabolism. Recognition of shock and prompt treatment are vital. Large volume of fluid resuscitation and inotropic agents (dopamine, dobutamine, epinephrine and norepinephrine) are required to support circulation, sometimes is necessary mechanical ventilation. However shock may be unresponsive to intensive care. There is some evidences that refractory shock may be more common in children with impaired adrenal gland responsiveness. Aggressive early treatment of MS can reduce mortality. We described a case of fulminant MS deteriorated to death.

Methods: We present a case of 2-year-old child who died after a meningococcal infection within 2 hours from admission to hospital. In the Department of Pediatric Intensive Care Unit the child presented purpura and shock syndrome. Symptoms had appeared 5 hours before with fever, general malaise and petechiae. Laboratory data included alterations of lactate, excess bases, reactive C-protein, thrombocytopenia, coagulation and hypoglycemia. The child was mechanically ventilated, were given intravenous antibiotics, corticosteroids and activated C-protein. The circulatory support was guaranteed with massive administration of fluids (60 mg/kg), fresh frozen plasma, dopamine, dobutamine and epinephrine. The shock showed rapid progression to death within 2 hours. The NM Sierogroup B was isolated in blood (PCR) and cerebrospinal fluid. The autopsy confirmed bilateral adrenal haemorrhage and necrosis.

Results: In this case, according to literature, the age is an important predictor of severity of MS. The elevation of base excess, lactate, PCR, alterations of coagulation, and glucose metabolism, thrombocytopenia are important laboratory parameters which correlate with the severity of the disease. A prompt and intensive management can be, even today, insufficient.

Conclusion: By now, MS represent a potentially fatal infective emergencies still present in western countries.
Skin anthrax-case report

S. Trajkova
Hospital of Public Health, Veles, Macedonia

Background: Anthrax is acute contagious disease in animals caused by bacillus anthracis that can be transmitted to man. It is presented in several clinical types. The cutaneous type characterised with pustula maligna, being the most frequent of all, less often mucosa is involved with malignant oedema, and the most rare although more severe clinical forms are pulmonal and intestinal anthrax which might have lethal outcome in 2-3 days.

Methods: To report patient with skin anthrax who has been in contact with sick animals and to remind on the fact that this disease still exist. We used clinical data during patient hospital stay at infectology department with diagnose of skin anthrax. Physical examination, epidemiology data, laboratory and biochemical analysis and microbiological tests were performed.

Results: Clinical examinations revealed solitary painless pustula maligna on his right hand, with black crust on the place of inoculation of infection with tiny vesicles encircling it, resembling wreath. The surrounding was erythematic, edematous and firm with enlarged and painful regional lymph nodes. The patient had high fever. He had positive epidemiological history being in contact with sick animals. Microbiology confirmed the presence of bacillus anthracis in the swab from wound.

Conclusion: Anthrax although rare disease is still present among our population, so early recognition in order to provide prophylactic measures and treatment is considered necessary.
Helicobacter pylori infection: Association with blood group, demographics and lifestyle
A. K. Khuwaja¹, B. Ahmed², A. Valliani², F. Wahab²
¹Aga Khan University Hospital Karachi, Karachi, Pakistan, ²Dow University of Health Sciences, Karachi, Pakistan

Background: It is well known that blood group antigens are related to the development of peptic ulcer and gastric carcinoma. This study sought to determine the relationship between H. pylori and ABO blood groups, age, gender, smoking and lifestyle.

Methods: Cross-sectional prospective study was conducted at endoscopy suit in Public Sector Hospitals of Karachi from Sep 2008-Nov 2008. All the symptomatic patients coming for upper GIT endoscopy were included in this study.

Results: Biopsy for histopathology was taken from 558 patients out of them 222 (39.8%) were males with age range 18-65 years. Age group of 21-40 years was found to be related with H. pylori infection. Out of 558 patients 216 (38.7%) were turned out H. pylori positive with a significant male preponderance (p=<0.05). Distribution of ABO blood groups in H. Pylori group was A= 66/216 (30.5%), B= 12/216 (5.5%), AB= 6/216 (2.7%) and O= 132/216 (61.1%) which is statistically significant (p= <0.05). Rh factor was also related to H. pylori infection (p=0.514). H. pylori could not be related with smoking (p=0.075). Excessive tea consumption was related to H. pylori infection.

H. pylori Infection association with ABO blood group

Conclusion: This study demonstrates that H. pylori infection can be related to ABO blood group, age, gender and even lifestyle. People of blood group O are more prone to develop H. pylori infection related gastritis, ulcers, and even perforations, so they should be cautious against transmission of H. pylori infection. Although there was no correlation found with smoking in this study, other studies have shown otherwise. We suggest that there is a need for making aware people to promote healthy lifestyle, especially after knowing their own health condition and demography.
First Norwegian isolate of genus Rahnella in a blood culture

V. Hasseltvedt¹, D. Caugant²

¹Sykehuset Innlandet Trust, Lillehammer, Norway, ²Norwegian Public Health Institute, Oslo, Norway

Background: The Department of Medical Microbiology, Lillehammer (latitude 61.1 degrees North/longitude 10.5 degrees East) has around 420 000 analyses yearly. We cover the counties of Oppland and Hedmark located in Central Eastern Norway - with a total area 53 200 square kilometers - compared to the whole of Denmark - i.e. 43 094 square kilometers. The population is approximately 400 000 - data from The Norwegian Bureau of Census (URL: http://www.ssb.no - end of 2008.

Genus Rahnella comprise Gram-negative rod-shaped bacteria. In MEDLINE (as of November 12, 2009) there were 109 "hits" when it comes to "Rahnella" alone and 11 for "Rahnella" and "bacteremia". We here describe what may be one of the first documented Norwegian case of bacteremia caused by genus Rahnella (non Rahnella aquatilis).

Methods: Blood cultures from a 77 year old female with bacteremia were cultivation positive with growth of a Gram-negative rod-shaped bacterium. Further characterization was performed by sequencing of the 16S rRNA gene.

Results: A 455 bp fragment from the 16S rRNA gene demonstrated a 99% homology with the 16S rRNA gene from Rahnella sp. (GeneBank Database) The bacterium was identified to belong to the genus Rahnella. The bacterium differed from Rahnella aquatilis, by being positive positive for phenylalanine.

Conclusion: In Norway bacteremia caused by genus Rahnella has not – to our knowledge - been described before. This is most likely be the first case case report ever in Norway demonstrating genus Rahnella (non Rahnella aquatilis) as the cause of bacteremia. This is one of more unusual findings our - medium-sized microbiological department - has encountered the last few years. Other findings include blood cultures positive for Anaerobiospirillum succiniciproducens, Granulicatella adjacens, Actinobaculum schali/urinale, Globicatella sulphidifaciens and Bulleidia moorei – among others. This demonstrates the importance of co-operation between laboratories on a regional and a central level.
Molecular identification and cloning of invasion plasmid antigen (IpaC), as a candidate vaccine against standard Iranian strain *Shigella dysentria F. mallaei*¹, S. Nazarian¹, H. honari¹, M. eghtedar dost², M. hiat¹, M. Saadati¹
¹Imam Hosain University, tehran, Iran, Islamic Republic of, ²shahed University, tehran, Iran, Islamic Republic of

**Background:** Shigellosis is an acute intestinal infection and a major public health problem. Estimations by The World Health Organization (WHO) indicate that the World population suffered from 4.5 billion incidences of diarrhea causing 1.8 million deaths in the year 2002. Approximately, 99% of the cases occurred in developing countries where poor hygiene and limited access to clean drinking water promote the spread of enteric diseases. Epithelial cell invasion is an essential step in the pathogenesis of *Shigella*. IpaC of *Shigella* is essential for initial entry into epithelial cells. According to high frequency report of mortality and shigellosis, antibiotics resistance and lack of appropriate vaccine against this disease, IpaC was cloned for prepare Invaplex vaccine.

**Methods:** In this study, IpaC gene from gene bank was obtained and primers were designed. After genome extraction from standard Iranian strain *S. dysentria*, it was used as template for PCR amplification. The amplified IpaC gene by PCR was cloned into pTZ57R. Recombinant plasmid was digested by EcoRI and HindIII restriction enzymes; the released band was purified and subcloned into expression vector (PET28 a).

**Results:** Results were showned that recombinant plasmid is produced succesfully.

**Conclusion:** In present study, a recombinant plasmid is produced harboring IpaC that can be used as an oral vaccine for perspective studies.
Efficacy of essential oils and essential oil components as antibacterial agents against level two bacteria

J. Rosenblum, J. P. Mack, Corresponding Author, H. Cotler, A. M. Lavin
Monmouth University, West Long Branch, NJ, USA

Background: Level two bacterial infections are a common complication and cause of hospital morbidity and increased costs of health care. Antibacterial activity of 54 essential oils and two principal components (geraniol and benzaldehyde) of cinnamon and citronella oil was previously reported (Mack et al. Vol. 44, p.21, New Jersey Academy of Science 1999; Mack et al. Vol., 45, p. 17, New Jersey Academy of Science 2000; Rosenblum et al. Vol. 54, p.9, New Jersey Academy of Science, 2009) and found to be effective against level one bacteria. Based on the previous work, we tested the two principal essential oil components and four essential oils (lemon grass, wintergreen, tea tree, and allspice) for antibacterial efficacy against three resistant bacteria.

Methods: The components geraniol and benzaldehyde and the four essential oils (lemon grass, wintergreen, tea tree, and allspice) were tested using the agar overlay method against three resistant bacteria: Salmonella enterica (ATCC 10708), Clostridium difficile (ATCC 43593), and Campylobacter jejuni (ATCC 33292). Three antibiotics were used for zone inhibition standards: streptomycin (10µg/disc), chloramphenicol (30µg/disc), and vancomycin (30µg/disc).

Results: Benzaldehyde and tea tree oil were ineffective against all three bacteria tested. Lemon grass oil was effective against C. difficile. Geraniol was effective against S. enterica, but had no effect on C. difficile. Wintergreen oil was maximally effective against all three bacteria tested in all trials.

Conclusion: Certain essential oils may be as effective as many common antibiotics currently in use. The complex make up of essential oils may make it difficult for bacteria to become resistant. Essential oils with antibacterial activity could be used effectively as a first line of defense in rural areas of the world to help control the spread of communicable infectious diseases.
Anaerobic bacteria in clinical samples from adult patients treated in a regional hospital in Costa Rica and the antimicrobial resistance

C. Quesada-Gómez, E. Rodríguez-Cavallini, M. D. M. Gamboa-Coronado
University of Costa Rica, San José, Costa Rica

**Background:** Anaerobic bacteria are important etiological agents of infections linked to human morbidity and mortality. However, the limited development of most Costa Rican health care facilities with respect to the isolation and manipulation of anaerobic bacteria prevents the compilation of precise data on the prevalence and the antimicrobial resistance of this sort of bacteria in the country.

**Methods:** During 18 months, anaerobic bacteria were cultivated from diverse aspirates following a standardized protocol for sample collection and isolation developed for this study. The antimicrobial susceptibility was tested in 31 anaerobic bacterial strains. Susceptibility test were performed to all isolates, using the reference agar dilution method, ATB-ANA system, and E-test strips.

**Results:** Forty seven anaerobic bacteria were isolated from 22 of 46 samples analyzed (48%). 25 of these organisms exhibited Gram-negative staining (53%), 22 isolates were characterized as Gram-positive (47%). Most bacteria were allocated to the genus Bacteroides (42%), followed by Eggerthella (13%) and Propionibacterium (11%). A limited number of isolates was identified as Prevotella, Bifidobacterium, Porphyromonas, or Fusobacterium. Nineteen strains were identified as Bacteroides fragilis group, 6 as E. lenta, 3 as Propionibacterium and 3 as Clostridium. All of the 19 strains of B. fragilis were metronidazole sensible (MIC 0.25 to 2 µg/ml) and clindamycin resistant (4 µg/ml to >128 µg/ml); others strains showed high MICs: penicillin 512 _g/ml, cefotaxime 256, cephalotin 128 and clindamycin 128. Very few of the Gram-positive rods were resistant to the antibiotics tested; however two strains showed MICs to metronidazole >128 _g/ml.

**Conclusion:** Although traditional procedures for sample collection and isolation of anaerobic bacteria are painstaking, a diversity of anaerobic species, including very strict and fastidious species, was isolated with the practical method applied in the current investigation. We urge others to implement our protocol in their health care facilities in Latin America, as this would likely help to define more precisely the role that anaerobic bacteria play in clinical infections. The high MICs to some antibiotics and the high resistance to clindamycin in the B. fragilis group strains are relevant findings considering their wide therapeutic use in Costa Rica.
Background: Pertussis can be a serious illness, particularly for babies and young children. The illness lasts six to twelve weeks or longer and has three stages: catarrhal, paroxysmal, and convalescent. The newer macrolides as azithromycin and clarithromycin are very effective for the treatment of pertussis. Common complications of the disease include pneumonia, encephalopathy, earache, or seizures.

Aims of this study is the clinical presentation of culture-confirmed pertussis in children and their contacts with cough illnesses in an outpatient setting.

Methods: During January 2005 to November 2009, a total of 29 cases of pertussis were confirmed in Sarajevo, including fifteen culture-confirmed cases. Laboratory confirmation of pertussis was difficult and delayed.

Results: Infection in newborns was particularly severe, with a death risk of up to 5% in Bosnia and Herzegovina, often caused by severe pulmonary hypertension. From 2005-2009, 78% of infants younger than six months with pertussis required hospitalization. Higher rate of complications (twice more) in infants compared with older children, the frequency of characteristic symptoms and high WBC counts was in general independent of the patients' age.

Discussion: Our results indicated that, under field conditions, receipt of 3 pertussis vaccine doses among children six to sixty months of age was highly protective against pertussis, regardless of vaccine type or manufacturer.

Conclusion: Compared with older children and adults, infants younger than six months with pertussis are more likely to have severe disease, to develop complications, and to require hospitalization. The mainstay of therapy in patients with active pertussis infections is supportive. The goals of therapy include limiting the number of paroxysms, observing the severity of cough, providing assistance when necessary, and maximizing nutrition, rest, and recovery. Children of parents who refuse pertussis immunizations are at high risk for pertussis infection relative to vaccinated children.
Monitoring of the diphtheria infection agent

I. Mazurova, O. Borisova, S. Kombarova
Gabrichevsky Institute of Epidemiology and Microbiology, Moscow, Russia, Moscow, Russian Federation

Background: Sporadic character of diphtheria incidence in Russia, along with high immunization coverage and high immunity performance, point to epidemiological well-being. However, percentage of unvaccinated cases remains high, especially among adults, and the rate of severe forms and lethal cases is also high. Because antitoxic immunity does not preclude infection, epidemiological process is covert in vaccinated population, resulting in carrier or light forms. From biological viewpoint, these forms of infection, not resulting in death of host, are beneficial for the agent, as they help its survival.

Methods: Goal: monitoring C.diphtheriae phenotypical and genotypical properties in samples isolated from patients in different periods of the epidemiological process. Research: level of toxin formation in passive hemagglutination test (2162 C.d. strains); typing with rybotyping method (1068 strains); toxin-forming genes structure (tox, dtxR) and amy gene, responsible for amylase production, rather than toxin formation (188 strains, PCR technologies with our own primers, sequencing); clinical/microbiological comparisons between 206 unvaccinated diphtheria patients.

Results: In 1980s St.Petersburg/Rossjia strain prevailed among gravis strains (23.5%) to become dominant in the 90s (96.1-98%) during the period of epidemiological rise. 70% of all current strains belong to this epidemic clone with a high level of toxin formation due to mutations in the nucleotide sequence of regulatory dtxR-gene, inhibiting regulatory DtxR protein, which leads to higher toxin production. Toxin production level in gravis strains is 2-4 times higher than in mitis strains. Also, high pathogenicity level in gravis strains depends on another virulence factor – capacity for amylase production, unrelated to toxin production. Amy gene (DIP 0357), 7737 base pairs localized in pathogenicity islands (DIP 0334-DIP 0357), is responsible for amilolytic activity of gravis C.d. strains, whereas mitis strains have this genome fragment deleted. Thus, gravis strains with amylolitic activity have an additional source of energy, colonize oropharynx faster, and circulate longer after they are replaced by the other biovariant.

Conclusion: After 9 years of mitis strains prevalence in the 80s, gravis strains have been dominant for 20 years, which increases chances of infection among both unvaccinated and vaccinated populations, and results in graver clinical forms.
Background: The aim of the investigation was to study Staphylococcus aureus carrier state on the upper respiratory mucous membrane among healthy population and to develop a additional method of its correction.

Methods: Bacterial status was studied in 1600 healthy subjects of reproductive age, with 192 cases being registered to carry Staphylococcus aureus on their upper respiratory mucus. 62 patients were Staphylococcus aureus resident carriers. The anti-lysozyme activity of 20 Staphylococcus aureus strains is determined (Bukharin O.V., 2001). Comparison group composed 60 patients of Staphylococcus aureus carriers who were treated by probiotics in combination with complete negative aeroiontherapy.

Results: 12% healthy subjects proved to be Staphylococcus aureus carriers. 36,9% patients were Staphylococcus aureus resident carriers. Pathogenic staphylococci were revealed in all the subjects examined. The method we suggest implies administration of an enzyme probiotic having an antibacterial effect in combination with a flow of complete negative air ions inhaled 60 minutes daily over a period of 10 days. “Balance-naryne-F” which contains products of acidophilus lactobacillus activity was used as an enzyme probiotic with an antibacterial effect against a number of pathogenic microorganisms. Aeroionificator “Spherion” was used as a source of complete negative air ions flow (“mountain air”). “Balance-naryne-F” is absolutely harmless, has no contraindications. The everyday apparatus “Spherion” helps stabilize redox processes in respiratory cells; it yields a flow of complete negative air ions amounting up to 1000 units per 1 ml air (Hygiene Rules 2.2.4.1294-03, 2003). In the course of the study 60 subjects were treated by the new method, with Staphylococci recurrence rate being registered only in 2 cases (3%), without any allergic reactions or any other complications. The average anti-lysozyme activity of 20 Staphylococcus aureus strains composed 3,2±0,21 mkg/ml. After the action it composed 1,84±0,18 mkg/ml (p<0,05). In the course of the study 60 subjects were treated by the new method, with Staphylococci recurrence rate being registered only in 2 cases (3%).

Conclusion: The method suggested for treating bacterial carrier states allows to exclude any pathogenic staphylococci in respiratory discharge in 97 % cases, as well as to prevent any possible complications in the subjects suspected to be bacterial carriers.
Hyper immunoglobulin E syndrome in adolescent (Job’s Syndrome) – case report
M. L. Luminos1, G. Jugulete2, O. Dorobat3, I. Lascăr4, A. Dragănescu5, M. Merișescu1, G. Tane6

1Institute of Infectious Diseases "Prof. dr. Matei Bals", Bucharest, Romania, 2Institute of Infectious Diseases "Prof. dr. Matei Bals", Bucharest, sector 2, Romania, 3Institute of Infectious Diseases, Bucharest, Romania, 4University Hospital, Bucharest, Romania, 5Institute of Infectious Diseases "Prof. dr. Matei Bals", Bucharest, Romania, 6Institute of Infectious Diseases, Bucharest, Romania

Background: Job’s syndrome or hyper immunoglobulin E recurrent infection syndrome (Hyper-IgE syndrome) is a rare, often inherited multisystem disorder, characterized by recurrent skin and lung infections (mostly caused by Staphylococcus aureus), elevated Ig E levels and skeletal defects. Only about 250 cases of Job’s syndrome have been reported since it was first discovered in 1966.

Methods: The following is the case of a 22 years old man admitted in the Intensive Care Unite of the National Institute for Infectious Diseases "Prof. Dr. Matei Bal_" of Bucharest who was later diagnosed with Hyper-IgE syndrome.

Results: The physical exam upon admission revealed: a characteristic facial appearance (asymmetry, broad nose, prominent forehead) and cold, large, laterocervical abscesses. His historical file included: meningitis at age 2, a pulmonary cyst at age 4, multiple hepatic abscesses at age 6 and multiple cold abscesses with different locations since then. He was first diagnosed and treated for tuberculosis, then when tuberculosis was excluded he was diagnosed with Histiocytosis X. The admission diagnosis was chronic granulomatous disease. Based on characteristic clinical features (cutaneous, hepatic and pulmonary abscesses) associated with elevated IgE levels we established the positive diagnosis of Job’s Syndrome, and we started surgical correction and antibiotic treatment according antibiogram.

Conclusion: We considered bringing forth this medical case and detailing it due to it’s rarely and the favorable evolution following a complex antibiotic and surgical treatment. To prevent future severe fungal and staphylococcal infections, the patient will receive prophylaxis for life.
Background:
Actinomyces are bacteria members of the endogenous mucous membrane flora in the oral cavity, gastrointestinal tract, and female genital tract. Actinomycosis is most often caused by Actinomyces israelii and less often by Actinomyces naeslundii, A. odontoliticus, A. meyeri and A. gerencseriae. Pulmonary infection with Actinomyces spp is often due to aspiration of oropharyngeal secretions, direct extension from cervicofacial infection or hematogenous dissemination from a distant focus or aspiration of a foreign body (e.g. chicken bone).

Methods: A 48-year-old man with retrosternal chest pain and upper abdominal pain with propagation to the back, with clinical signs of nausea, dyspnea and dysphagia was referred to the Clinics of thoracic surgery. After esophagography, operative treatment was indicated. Left thoracothomy with mediastinothomy were performed. During the operation, a sample of pus was taken and sent for a microbiological examination at the Institute of Microbiology and Parasitology, Medical Faculty in Skopje. Standard microbiological procedures were used. The sample was cultured anaerobically on Schaedler agar and incubated for 48 hours at 37°C.

Results: Oval, smooth colonies were observed. Gram stained smear revealed short branching Gram-positive filaments suspected for genus Actinomyces. For a definitive diagnosis and differentiation of the Actinomyces species, an automated VITEK system was used.

Conclusion: Two weeks after treatment by ceftriaxon, metronidazol and analgetics, all clinical signs improved and patient was released in good physical condition.
Eosinopenia as an effective marker of sepsis in comparison to procalcitonin and C-reactive protein levels for patients admitted to a critical care unit in an Urban hospital

**H. Shaaban**
St Michael's Medical Center, Newark, NJ, USA

**Background:** The role of eosinopenia as a marker of sepsis has recently been evaluated. The aim of our study was to test the value of eosinopenia as a diagnostic marker of sepsis in comparison to procalcitonin and C-reactive protein levels.

**Methods:** A prospective study of critically ill adult patients admitted to the medical ICU at an urban hospital. Procalcitonin, C-reactive protein levels and eosinophil counts were measured on admission. Patients were classified as non-infected or infected by the medical residents, fellows and attendings.

**Results:** A total of 68 patients were enrolled into the study. At a cutoff value of 7g/l, the C-reactive protein level yielded a sensitivity of 94%, a specificity of 84%, a positive predicted value (PPV) of 83% and a negative predicted value (NPV) of 94%. (Table 2) At a cutoff value of 1.5ug/l, the sensitivity of the procalcitonin test was 84%, specificity of 92%, PPV 90% and NPV of 87%. The eosinophil cell count (cutoff of 50 cells/mm3) produced a sensitivity of 81%, specificity of 65%, a PPV of 66% and a NPV of 80%.

The comparison of the eosinophil cell count (<50) and procalcitonin levels among the non-infected and infected groups showed a significant statistical difference (Fisher's exact test, p=0.0239). There was no statistical difference when comparisons were made between eosinophil count and CRP levels (p=0.12) and CRP levels and procalcitonin levels (p=0.49).

**Conclusion:** Eosinopenia is a relatively good serological marker of sepsis in the ICU and showed statistical significance in comparison with procalcitonin level. It should be considered as an early marker of sepsis in patients admitted to the Critical Care unit.
Final Abstract Number: ISE.107
Session: International Scientific Exchange

Diagnostic value of CSF/STREM-1 (Soluble triggering expressed on myeloid cells-1) level for diagnosis of meningitis in children

S. noorbakhsh¹, B. soboti², A. Tabatabaei³
¹e; , Iran University of Medical Sciences, tehran, Iran, Islamic Republic of, ² Research Center of Pediatric Infectious Diseases, Iran University of Medical Sciences, tehran, Iran, Islamic Republic of, ³Research Center of Pediatric Infectious, tehran, Iran, Islamic Republic of

Background:
The objective was to measure the STREM-1 (Soluble triggering expressed on myeloid cells-1) level in Cerebro spinal fluid to identify children with bacterial meningitis.

Methods:
In a cross sectional study (2008-2009) in pediatric ward in Rasoul hospital, Tehran Iran we measured the sTREM-1 levels (ELISA) quantitatively in 120 CSF samples. The level compared between bacterial and aseptic meningitis.

Results:
CSF- sTREM-1 Levels were higher in patients with bacterial meningitis in compare with aseptic meningitis (Mean ± SD, 2823 ± 2017 Versus 1167 ± 1622; P value: 0.000). The area under the receiver operating characteristic (ROC) curve for discriminating between 2 groups was 0.799 (%95 CI, 0.719–0.880; P. Value =0.000). At a cut off level of 750pg/ml for sTREM-1 in CSF yielded 85% sensitivity;68% specificity.

Conclusion:
Presence of sTREM-1 in CSF can potentially assist clinicians in the diagnosis of bacterial meningitis but it can not differentiate other inflammatory process in CSF from bacterial meningitis. We offer adding the CSF- sTREM-1 level test to CSF-PCT level for definite diagnosis of bacterial meningitis. Both biologic markers (PCT and sTREM-1) in CSF would be used effectively to shorten unnecessary antibiotic treatment in children.
Emerging of optochin resistance in clinical isolates of *Streptococcus pneumoniae* and ambiguity in the diagnosis of pneumococcal infections in Iran

M. oskoui¹, F. rahmati ghezelgeh³, S. nobari¹, B. shaghaghi¹, R. rafiee tabatabai²
¹Pasteur Institute of Iran, Tehran, Tehran, Iran, Islamic Republic of, ²North of Tehran branch, Islamic Azad University, Tehran, Tehran, Iran, Islamic Republic of

**Background:** *Streptococcus pneumoniae* is one of the most important pathogens in children and in elderly populations, being the most common cause of invasive bacterial infections such as pneumonia, sinusitis, and meningitis. So that accurate identification is crucial for correct diagnosis and treatment of patients. The major test in diagnosis of *S. pneumoniae* is to be susceptible to optochin disk. But optochin-resistant pneumococci have been reported in the last 2 decades. Recent studies show an alerting in *atpA* and *atpC* that encode A and C subunits of F0F1ATPase that is responsible for optochin resistance.

**Methods:** 350 samples were collected from patients of some clinical center in Iran since 1998 till now. After biochemical tests such as bile solubility, hemolysis on chocolate agar, negative catalase test, and PCR, 64 isolates identified as *Streptococcus pneumoniae*. All isolates were tested for optochin sensitivity by disc diffusion method. *atpC* gene was targeted with specific primers in PCR assays. The *atpC* gene was sequenced and compared for these isolates. PFGE was done for all isolates.

**Results:** From all 64 *S. pneumoniae* strains, 12.5% (8 isolates) were optochin resistant (zone was less than 14mm) and bile soluble. 10.9% (7 isolates) were optochin resistant and bile non soluble (with other tests they were determine as *S. pneumoniae*). All of Optochin resistant strains showed replacement of alanine to threonine (A49T) in *atpC* gene. PFGE classification has been shown different patterns for resistant strains.

**Conclusion:** Susceptibility to optochin is often used in laboratories as the primary and sometimes the only identification method. It may be so harmful if laboratories can’t diagnosis *S. pneumoniae* because of optochin resistant. This mutation that we have detected has been reported as one of the major cause of Optochin resistant by other studies. Our results show an emergence of optochin resistance among clinical isolates of *S. pneumoniae* in Iran.
Comparison of one step and two step RT-PCR approaches for molecular diagnosis of novel influenza A (H1N1)
A. Ghalyanchi Langeroudi¹, K. Majidzadeh¹, M. Soleimani¹, E. jamshidiyan¹, A. Mohseni¹, A. Morovvatii²
¹Tasnim biotechnology research center, Tehran, Iran, Islamic Republic of, ²Islamic Azad University,Qom Branch, Tehran, Iran, Islamic Republic of

Background: Swine influenza was first described in the 1918 pandemic and made resurgence in April 2009 in the form of a triple-reassortant influenza A virus, which is composed of a combination of human, swine, and Eurasian avian strains. A pandemic caused by a novel influenza A virus (H1N1) poses a serious public health threat In 2009 , The first case of H1N1 is observed in Iran .Also, Iran reported its first H1N1 flu death on August 26, that of a 36-year-old woman. The emergence of a novel pandemic human strain of influenza A (H1N1) has clearly demonstrated the need for flexible tools enabling the rapid development of new diagnostic methods. Rapid laboratory diagnosis of novel influenza A (H1N1) in early stage of disease is very important to improve the prognosis and successfully treatment and control of it .The diagnosis of H1N1 is based on the use of molecular tools such as RT-PCR.

Methods: In thus study, We compare and evaluate one-step (Bioneer One-Step RT-PCR kitCo) and Two –Steps (RevertAid™ M-MuLV Reverse Transcriptase / Taq DNA polymerase Fermentas Co ) RT-PCR for Molecular Diagnosis of H1N1 Strains that provided by CDC. After , RNA extraction and standardization , cDNA synthesis and PCR done according to the manufacturer's protocol for the mentioned kits.

Results: Although we observed one step RT-PCR kit could detect minimum of RNA template in this experiment. The best performance observed with ( more sharp bands and Higher DNA Amplified Product OD) by one step RT-PCR kit in different RNA concentration.

Conclusion: These data show that One-Step RT-PCR approach yielded a higher rate of H1N1 RNA detection than the Two-Step kit
New promising diagnostics test for H1N1
S. hussin
El Rehab Private hospital, Cairo, Egypt

**Background:** Qualitative and quantitative early detection for H1N1 with highly efficacy and specificity. By using new immunological enzyme assay has capability to catch virus in saliva, sputum discharge by very simple method.

**Methods:** We randomly examined about 5 patients [First group] having H1N1 in different age 10-46 years {Previously diagnosed by RT-PCR system in real- time PCR system} we collect saliva and nasal discharge samples under complete aseptic conditions for all of them. Also we take another 10 persons [second group] still quarry for the presence of H1N1 or other influenza types and not already diagnosed by the same system.

**Results:** With applying this new method the Sensitivity and the accuracy was 96 percent respectively, it gives the same results in diagnosis the first group as qualitative and quantitative measures in comparing to the results of the RT-PCR system. In the second group this method succeeded in diagnosed one from 10 persons, when we examined them again with RT-PCR system in real- time PCR it showed the same results.

**Conclusion:** The present studies disclose new early and simple qualitative, quantitative method for detection of H1N1 with highly sensitivity, specify and as early we can. These methods give us new advantage in process of sampling science we can use saliva and nasal discharge, an accurate measure for the level of the virus despite to using other complex methods.
Detection of canine distemper virus (CDV) in dogs with a commercially available immunochromatographic assay

N. Affenzeller¹, V. Benetka²
¹Clinic of Internal Medicine and Infectious Diseases, Vienna, Austria, ²Institute of Clinical Virology, Vienna, Austria

Background: Canine distemper virus (CDV) infection in domestic dogs and other carnivores is reported to have one of the highest fatality rates due to an infectious disease. CDV is a member of the genus Morbillivirus subordinate to the family Paramyxoviridae. Infection with the virus usually occurs after aerosol or droplet exposure, although virus is shedded with all body excretions. Clinical signs vary depending on pathogenicity of the virus strain and immune status and age of the host.

Methods: Nucleic acid detection by PCR is a valuable premortem diagnostic method for this highly contagious disease. Serum (n=25), whole blood (n=25), conjunctival swabs (n=26), urine (n=22) and cerebrospinal fluid (n=11, CSF) of 26 dogs clinically suspicious for CDV infection were examined by the FASTest Distemper Strip (rapid immunochromatographic screening test, Fa. MegaCor, Austria) and compared to rt-PCR. Detection of CDV specific RNA was carried out with primers by Frisk et al. (1999).

Results: A systemic CDV infection was diagnosed in seven dogs. Due to a poor prognosis five of them were euthanized. CDV infection was confirmed pathohistologically and by immunohistochemistry.

Specificity and positive predictive value of the FASTest Distemper Strip was 100% in all samples tested. Sensitivity was 20.0%, 40.0%, 60.0%, 50.0% and 100.0% and negative predictive value 83.3%, 87.0%, 91.3%, 84.2% and 100.0% in serum, whole blood, conjunctival swabs, urine and CSF, respectively.

Conclusion: In conclusion, the in house rapid test can be used to diagnose CDV infection, most notably in dogs with the neurologic form. Nevertheless, considering the sensitivity negative results should be confirmed by PCR.
Clinical severity score vis-à-vis body condition score in draught equines affected with spontaneous glanders

A. Naureen
University of Veterinary and Animal Sciences, Lahore, Pakistan, Lahore, Pakistan

**Background:** A total of 86 equines (horses = 51; donkeys = 19; mules = 16) with a mean age of 8.35± 3.34 years, duration of illness 26.20±18.5 days, and body weight 373.22±93.57 attending at outdoor clinics of Veterinary Medical Teaching Hospital (VMTH), Department of Clinical Medicine and Surgery, University of Agriculture, Faisalabad (Pakistan) were monitored regarding clinical severity and their body condition scores over a 4-year period (November 2002- June 2007).

**Methods:** Confirmed diagnosis was based on positive mallein reaction and clinical manifestation of nasal discharge, nodules and ulcers of skin, edema of limb, work insufficiency and weight loss.

**Results:** The mean CSS was 3.00 and mean BCS was 2.74. The severity of clinical signs (CSS) was established as a score on a scale of 1-4 were correlated with the established score on a scale of 1-9 for body condition (BCS) of horse. Linear regression analysis showed a significant association between CSS and BCS (P < 0.05, r = - 0.904), hence correlation proved to be significant at the 0.01 level (2-tailed).

**Conclusion:** This study shows that clinical severity score may be one of the predictors of equine naturally affected with glanders.
Background: One of the primary concerns of the Millennium Development Goals is to combat and reverse the spread of HIV/AIDS. About three million people in Nigeria now live with AIDS, and current research suggests that unprotected sex accounts for about 90 per cent of the infections among adolescent girls, economically disadvantaged women and commercial sex workers who constitute the high risk group. The paper considers effective and equitable ways to contain the spread of the virus among the socially excluded female commercial sex.

Methods: About 1,500 brothel based commercial sex workers responded to a questionnaire designed to elicit information on the extent of AIDS infection among them, and on current attitudes and measures to control the spread of the pandemic in four major geographical zones of Nigeria selected for the study. Government officials and health representatives were also interviewed on the legal and social protection of CSWs, and the programmes of government, donor agencies and NGOs on female condom use, and AIDS control in general. Secondary sources were consulted for theoretical and comparative insights on the spatial and behavioral aspects of disease and health. Maps and charts are used where necessary to illustrate spatial variations.

Results:
The study confirms that female commercial sex workers suffer discrimination and neglect, and have limited access to information on the new devices and other resources available to reduce and treat HIV infections. Since women are in a subordinate position in sexual relations with men, the female condom, over which the women have greater control, is the only safe-sex method available, and should be an essential component of any strategy for contraception, microbicide and AIDS prevention. There is need for well designed and properly targeted government interventions that would subsidize the high cost of female condoms, and promote its accessibility to commercial sex workers.

Conclusion:
The geographer can contribute to public policy through a better understanding of the spatial incidence and spread of disease, and the optimal location of health interventions.
Transmissible Spongiform encephalopathy (TSE) animal and human TSE in North America update October 2009

T. Singeltary
Bacliff, TX, USA

**Background:** An update on atypical BSE and other TSE in North America. Please remember, the typical U.K. c-BSE, the atypical l-BSE (BASE), and h-BSE have all been documented in North America, along with the typical scrapie's, and atypical Nor-98 Scrapie, and to date, 2 different strains of CWD, and also TME. All these TSE in different species have been rendered and feed to food producing animals for humans and animals in North America (TSE in cats and dogs ?), and that the trading of these TSEs via animals and products via the USA and Canada has been immense over the years, decades.

**Methods:** 12 years independent research of available data

**Results:** I propose that the current diagnostic criteria for human TSEs only enhances and helps the spreading of human TSE from the continued belief of the UKBSEnvCJD only theory in 2009. With all the science to date refuting it, to continue to validate this old myth, will only spread this TSE agent through a multitude of potential routes and sources i.e. consumption, medical i.e., surgical, blood, dental, endoscopy, optical, nutritional supplements, cosmetics etc.

**Conclusion:** I would like to submit a review of past CJD surveillance in the USA, and the urgent need to make all human TSE in the USA a reportable disease, in every state, of every age group, and to make this mandatory immediately without further delay. The ramifications of not doing so will only allow this agent to spread further in the medical, dental, surgical arena's. Restricting the reporting of CJD and or any human TSE is NOT scientific. Iatrogenic CJD knows NO age group, TSE knows no boundaries.

I propose as with Aguzzi, Asante, Collinge, Caughey, Deslys, Dormont, Gibbs, Gajdusek, Ironside, Manuelidis, Marsh, et al and many more, that the world of TSE Transmissible Spongiform Encephalopathy is far from an exact science, but there is enough proven science to date that this myth should be put to rest once and for all, and that we move forward with a new classification for human and animal TSE that would properly identify the infected species, the source species, and then the route.
Background: To determine the frequency and causes of respiratory illnesses that prompted the query in the context of Pandemic Influenza A / H1 N1, risk factors, use of diagnostic resources, therapeutic, reasons for hospitalization.

Methods: A cross sectional study. Preliminary report of 3 months. Inclusion criteria: all patients over 15 years, who presented with symptoms of airway compromise with or without fever, clinics, and internships.

Results: We treated 566 patients, average age was 36.4 (SD ± 15.1) years, mainly female, 304 (53.7%, 95% CI 50-56). It prompted the query: fever ≥ 38 ° C:328 (58%, 95% CI 55-60), headache 447 (79%, 95% CI 72-86), musculoskeletal pain 414 (73.1%, 95% CI 63-82), asthenia 448 (79.1%, CI 95% 75-82), cough 422 (74.6%, 95% CI 70-76%), dyspnea, 176 (31.1%, 95% CI 25-36), rhinitis 326 (57, 6%, 95 % 54-61), pharyngitis 247 (43.6%, 95% CI 39-48), pneumonia: 130 (23%, 95% CI 19-26) and flu syndrome 279 (49.3%, 95% 19 -- 26). The most frequent risk factors were: pregnancy: 40 (7.1%, 95% 6-8), diabetes mellitus 33 (5.8%, 95% 4-8) Asthma 26 (4.6% 95% CI 3-6), heart failure 19 (3.4%, 95% 2-5), chronic renal failure 8 (1.4%, 95% CI 1.7-2.3), Morbid Obesity 9 (1, 6%, 95% CI 0.6-2.6). 169 were requested chest radiographs of which 130 (77%, 95% CI 72-79) showed infiltrates and 39 (23%, 95% CI 16-29) were normal. The flu vaccine it had placed 39 patients (7%, 95% CI 5-9). Oseltamivir was noted in 279 cases (49.3%, 95% CI 44-53). Of all patients who consulted, they went 52 (9.2%, 95% CI 7-11), 47 (90.4%, 95% CI 87-92) in common room and 5 (9.6% 95% CI 8-11) in Critical Care Unit. The average age was 48.8 these years (SD ± 18.8), female predominance of 28 (65.1%, 95% CI 40-67), risk factors 27 (62.8%, 95 % 37-64). 79% (95% CI 68-90) plunged by pneumonia. The average stay was 7.9 days (SD ± 6.9). None of the patients admitted had placed the flu vaccine.

Conclusion: We emphasize that the most visits and hospitalizations occurred in females. Of all searches, more than half had fever in the office. The most frequent risk factors identified were pregnancy, diabetes mellitus, asthma. Most patients requiring hospitalization were those who had pneumonia.
Present and future aspects of diagnosis of visceral leishmaniasis

S. Kumar¹, A. S. Pratihar², R. Kumar¹
¹C.S.J.M. University, 208024, Uttar Pradesh, India, ²Dayanand Academy of Management Studies, Kanpur, Uttar Pradesh, India

Background: Present and Future aspects of diagnosis of Visceral Leishmaniasis

Visceral Leishmaniasis (VL) is a vector borne anthrozoonotic disease caused by a protozoan, Leishmania donovani, of Trypanosomatidae family. It is an endemic disease that covers 88 countries (16 developed and 72 developing) with a total of 350 million people at risk and 12 million cases of infection.

Methods: The most precise methods used for its diagnosis includes the analysis of spleen & liver smears (90%), Bone Marrow smear (80%), sternal or iliac crest puncture but these all are not reliable and cumbersome / painful also. Various serological tests like indirect haemagglutination assay (IHA), countercurrent immuno-electrophoresis (CCIEP), Immunodiffusion (ID), Direct agglutination test (DAT), Indirect fluorescent antibody test (IFAT), ELISA etc. are also used to diagnose VL. These tests are useful for both laboratories as well as for field and for the screening of large number of samples rapidly. The most sensitive and specific test is ELISA, since these tests are based on the antibody concentration hence are not suitable for immunocomprised (AIDS) patients. PCR based methods are also used to detect the VL patients by targeting 18S ribosomal gene. Recently, a latex agglutination test (KATEX) has been developed for the detection of leishmanial antigens in the urine of patients by monoclonal antibodies against VL antigen in urine, which shows a sensitivity of 68-100% and specificity of 100% in beginning trials.

Results: Our research is centralized to develop a detection method for normal as well as for immuno-compromised patients either from isolated specific antigen or from serum or any other fluid / tissues taken from kala-azar patients, which is easy to carry out and efficient for the diagnosis of visceral leishmaniasis in field as well as in laboratory condition where lack of sophisticated instruments and expertise persons.

Conclusion: Thus, the current research will definitely be able to formulate a new diagnostic tool for VL that will work in laboratory as well as in the field s effectively.
Incidence of neonatal sepsis in Bosnia and Herzegovina

A. Bajraktarevic¹, Z. Mulalic¹, A. Djurdjevic Djulepa², H. Khatib³, A. Drnda⁴, J. Ceman Saric⁵, Z. Jatic⁶, J. Abduzaimovic Maglajlic⁶
¹Public Health Institution of Canton Sarajevo, Sarajevo, Bosnia and Herzegovina, ²General Hospital Sarajevo, Sarajevo, Bosnia and Herzegovina, ³Pediatrics Clinic Sarajevo, Sarajevo, Bosnia and Herzegovina, ⁴Infectious Clinic Sarajevo, Sarajevo, Bosnia and Herzegovina, ⁵Clinical Medical Center Sarajevo, Sarajevo, Bosnia and Herzegovina, ⁶Medical faculty Sarajevo, Sarajevo, Bosnia and Herzegovina

**Background:** Neonatal sepsis can occur in any infant. Signs are multiple and include diminished spontaneous activity, less vigorous sucking, apnea, bradycardia, temperature instability, respiratory distress, vomiting, diarrhea, abdominal distention, jitteriness, seizures, and jaundice.

**Methods:** The manifestations of neonatal septicemia are often vague and therefore demand a high index of suspicion for early diagnosis. Early signs are frequently nonspecific and subtle and do not distinguish among organisms. Neonates with suspected sepsis, and those whose mother was thought to have chorioamnionitis, should have a CBC, differential with smear, platelet count, blood culture, urine culture, and lumbar puncture. Diagnosis is clinical, with extensive laboratory testing.

**Results:** Neonatal sepsis occurs in 2.3 to 3.6/1000 births in Bosnia and Herzegovina during period 2003-2008. Neonatal sepsis cases are more common in premature babies. Neonates who are both septic and granulocytopenic are less likely to survive, particularly if their bone marrow neutrophil storage pool is depleted.

**Conclusion:** Babies in the hospital and those younger than four weeks old are started on antibiotics before laboratory results are back. Nevertheless, neonatal sepsis is a leading cause of infant death. Differentiating bacterial sepsis from other conditions common in infants in the neonatal intensive care unit poses a number of challenges in Bosnia and Herzegovina. Aerobic and anaerobic cultures are appropriate for most of the bacterial etiologies associated with neonatal sepsis.
Implementing TB-HIV collaborative activities in Ghana
N. N. Hanson-Nortey
Ghana Health Service, Accra, Ghana

**Background:** The prevalence of TB/HIV co-infection in Ghana is 14.7% and a national policy on TB/HIV collaborative activities has existed since 2007. The Adansi South District has seen an increasing number of TB/HIV co-infected persons from 14 (2002) to 27 (2007). This study was conducted to identify challenges to implementing the policy in the district.

**Methods:** Structured questionnaires were administered to health workers at district and facility level and TB, HIV, co-infected and non-infected patients to assess policy implementation.

**Results:** Mechanisms for TB/HIV collaborative activities did not exist in the district. Intensified case finding was not being done and infection control practices were poor. Adequate personnel existed to promote HIV testing but they lacked training to do this hence there was no referral for HIV testing of TB patients. Co-trimoxazole was not available for distribution. Patients had no knowledge of the policy and its benefits though health education was done daily in the outpatient department.

**Conclusion:** A lack of knowledge of the policy is hindering its implementation though human resources and infrastructure to implement TB/HIV collaborative activities exist in the district. Simple activities like intensified case finding and Co-trimoxazole Preventive Therapy have also been affected. Dissemination of the policy is urgently needed in order to expand TB/HIV collaborative activities at the district level.
Epidemiological investigation and control of an outbreak of meningococcal infection amongst soldiers

A. kushwaha
Armed Forces Medical College, PUNE, India

Background: Meningococcal infection may lead to meningitis and fulminant meningococcal sepsis, two life threatening conditions. This outbreak in soldiers serving in counter insurgency role under field setting was effectively controlled without compromising their operational commitment. Sporadic cases of meningococcal infection have been reported in soldiers but no outbreak in soldiers has been reported earlier from India.

Methods: This is an epidemiological investigation and control of an outbreak of meningococcal infection, bringing out the predisposing factors and highlighting the role of early diagnosis and management of cases. Mass chemoprophylaxis in contacts was used as an effective control measure in the absence of vaccine in this institution based outbreak.

Results: Out of a total of 17 cases reported, 14 presented as meningitis and 03 as meningococcemia. Two cases of meningococcemia ended fatally. Serogroup A of Neisseria meningitidis was responsible for this outbreak. Gross over-crowding was the predisposing factor.

Conclusion: An outbreak of meningococcal infection in soldiers deployed in counter-insurgency role was effectively contained using mass chemoprophylaxis in the absence of meningococcal vaccine.
Background: Airborne infections are serious problem(s) for developing countries such as Pakistan and it is essential to take preventive measures against this problem because it is directly concerned with human health and economy.

Methods: Both methods namely Active (Oxoid manual) and Passive (Pasquarella et al.) air sampling was applied in this study. Three samplings were carried out from the various wards of hospital in the month of April and June 2008.

Results: All wards showed elevated colony forming units as compared to acceptable levels. Gram positive bacteria were found high in range as compared to gram negative bacteria. Ciprofloxacin was observed most as most sensitive antibiotic.

Conclusion: The current findings are in accordance with findings of many researchers. The present findings of increased levels of bacterial count correlate with unhygienic conditions, unchecked visitors, sneezing, coughing, over-crowd, un-filtered air conditioners, un-filtered ventilation, cross infection, high level of dusting and building design.
Background: According to WHO four to five million people in Pakistan are suffering from Hepatitis B and about four to six million people are suffering from Hepatitis C. It mean over 10 million Pakistanis are suffering from one or the other type of Hepatitis. The objective was to assess the knowledge and practices of barbers regarding transmission risk of HBV and HCV viruses.

Methods: A cross-sectional survey of barber’s shops in Pakistan was conducted. Barbers were queried about hepatitis, knowledge regarding hepatitis transmission through razor, vaccination, sterilization, and the form of media they use for information and entertainment. Use of instruments on at least 2 clients were observed in each shop. Proportion and their 95% confidence intervals were computed.

Results: Of 96 barbers approached, 12 (13%) knew that hepatitis is a disease of the liver, causing jaundice, it is transmitted through parenteral route and could also be transmitted by razor. During the actual observation of 192 clients, razors were cleaned with antiseptic solution for 22 (11.4%) and reused for 88 (46%) shaves.

Conclusion: Level of awareness among barbers about hepatitis and risks of transmission is very low, and their practice of razor reuse that may spread hepatitis is very common. Messages about hepatitis need to be incorporated in media campaigns, in addition to regulation of practices.
Seroprevalence of Legionella pneumophila in admitted patients with pneumonia in training hospitals, Ahvaz, Iran (2007-2008)

**S. M. Alavi**
Ahvaz Jundishapoor University of Medical Sciences, Ahvaz, Khuzestan, Iran, Islamic Republic of

**Background:** Objectives: To determine the seroprevalence of Legionella pneumophila (LP) in patients with pneumonia.

**Study:** Descriptive study

**Place and Duration of study:** Ahvaz a city southwest Iran, 12 months between December 2007 and November 2008

**Methods:** During a 12-month study period, 121 randomized selected patients admitted to the 3 training hospitals of Jundishapoor University of Medical Science in Ahvaz (a city southwest Iran) with pneumonia were investigated to determine the seroprevalence of LP. The diagnosis of LP infection was based on positive serology. Sera were tested for L. pneumophila IgG and IgM by using Elisa kit (Vircell, Spain). All analyses were done using the SPSS, version 16 statistical package.

**Results:** Of a total of 121 serum samples tested, 21 (17.3%) were positive for LP- IgG, IgM. Fifty percent of pneumonia patients in ICU were seropositive. Age, gender and area of residency did not significantly (p > 0.05) affect the seroprevalence of L P. Overall, the prevalence of L P seropositivity was not significantly (p > 0.05) affected by co-morbidities except diabetes melitus. Smoking and receiving antibiotic was observed in 86% and 100% seropositive patients.

**Conclusion:** Legionella pneumophila is a prevalent infectious agent in the region of study and should be considered in patients with pneumonia especially in diabetic, smoker and ICU patients.
HBV and HCV viral markers seroprevalence in first time healthy blood donors referred to transfusion centers of Bushehr province, South of Iran (April 2004 to March 2008)  

H. Maneshi1, S. Zare2, M. Karimi3, G. R. Hajiani3  
1Bushehr University of Medical Sciences, 7513614753, Iran, Islamic Republic of, 2Bushehr University of Medical Sciences - Student's Research Committee, Bushehr, Iran, Islamic Republic of, 3Bushehr blood transfusion center, Bushehr, Iran, Islamic Republic of

Background: The risk of infection by transfusion-transmitted viruses has been reduced remarkably. However, a zero-risk blood supply is still desirable. Hepatitis B (HBV) and Hepatitis C (HCV) viruses are transmitted mainly by parenteral route, following which, a remarkable proportion of infected cases, may progress to chronic hepatitis. In this study we analyzed seroprevalence, demographic and epidemiologic characteristics of positive HBV and HCV cases in first time blood donors of Bushehr province.

Methods: In this cross-sectional study, 66873 first time donors who were referred for blood donation, according to the records registered in Bushehr province’s blood transfusion organization during 5 years (April 2004 to March 2008), were studied. Donors had been passed the initial screening (ELISA) and confirmatory test (Western Blot) for HBs Ag and HCV Ab.

Results: A total of 51884 people out of 66873 volunteers were able to blood sampled. We determine seroprevalence of HBV 0.47%(245 persons), HCV 0.33%(174 persons) and HBV-HCV co-infection 0.013%(7 persons). In those who were infected by HBV: 94.7%(232 persons) were male and 84.9%(208 persons) were married. The majority of them were young, less than 30 years old, (37.60%) and undergraduate, below diploma, (43.67%) people. In HCV infected persons: 97.7%(170 persons) were male and 71.84%(125 persons) were married. Furthermore the majority of these persons were undergraduate (62.64%) and young (42.19%) people.

Conclusion: We compared our results with those of other studies in near Bushehr provinces and concluded that the prevalence rate of HBV and HCV in our area is less than most of them and now we are in low prevalence state. In attention to Bushehr geographical situation it is an important note. In addition HBV-HCV co-infection is uncommon in our area. According to this fact that most of infected persons were young and undergraduate married men, this segments of society should be more considered.
Background: The Elimination Plan of Measles in Canary Islands started in January 2001. We describe Measles situation in Canary Islands after the start of the Elimination Plan.

Methods: We supervised the measles cases notified to the Canary Net of Epidemiologic Surveillance from 0 hours of 1st January 2001 to 24 hours of the 31st December 2008. The information collected was obtained in an individual way from an epidemiologic card established in the Plan.

Results: During the years 2001 and 2008 were notified 97 suspicious cases, 94 (97%) were classified in laboratory (68% were rejected and 32% confirmed), leaving the rest ones as compatibles refusing the affected people to the investigation and being not available for that the clinical samples for classification.

They were two outbreaks, both in 2006, one of them in the Gran Canaria Islands with 14 confirmed cases and one compatible, and another one in Tenerife Island, with three brothers affected of the same family, German tourist.

Conclusion: The Measles evolution in canaries after the beginning of the Plan, has followed a decrecent tendency. The especific surveillance sistem has obtained wonderful results, so that only rest without clasification 3% suspicious cases and in both cases with the refuse of colaboration from the patients.
Background: The introduction of the DTP vaccine in Canary Island vaccine calendar has mean an important descent in Pertussis incidence. Even this there appear some cases of this disease. We expose a descriptive epidemiologic study about Pertussis evolution in Gran Canary Island in the period 1999-September 2009.

Methods: We supervised the Pertussis cases notified to the Canary Net of epidemiologic surveillance from 0 hours of 1st January 1999 to 24 hours of the 31st September 2009. We obtained the information from a epidemiological card done for this purpose. We made definition of suspicious and confirmated case and we evaluate the descriptive variables, sex, age, previous DTP vaccination and date of becoming of symptoms.

Results: There were 94 suspicious cases notified, all of them confirmed. 35 were females and 59 males. The 69% of the cases were 2 months or< of age, 25% between 2 months and 1 year, and only the 6% in the second term. In the 90% of the cases only there where one or none dose of DTP vaccine. The 4% had two doses and three cases had complete vaccination. Three cases under two month age, died

Conclusion: Still we observe a little presence of this disease, in most of cases, people who because their ages has not received vaccination against the Pertussis. If is necessary to establish investigation mechanisms that allow us to get to the infection source in this cases.
Seroprevalence of toxoplasmosis in women who asisted Dr. Rafael Gallardo Hospital, Coro, Falcón estate

D. Martinez¹, E. C. Martinez²
¹Universidad Nacional Experimental Francisco de Miranda, Coro, Falcon, Venezuela, ²UNEFM, Coro, Falcon, Venezuela

**Background:** There are no studies related to the toxoplasmosis in Falcón state. The purpose of this study is to determine the prevalence of anti-*Toxoplasma gondii* antibodies type IgM and IgG in non-pregnant women.

**Methods:** The diagnosis was made through an enzymatic immunoassay.

**Results:** The 85.5% of the results were negative in the presence of both antibodies, 14.27% showed positive values for IgG and 0.37% had positive values for IgM. In the IgG(+) patients the presence of active infection was discarded. The IgM(+) patient was handled as acute infection. The low prevalence found can be due to the low exposition to risk factors or sub-register.

**Conclusion:** Early diagnosis allows the initiation of prophylactics measures that reduce the transmission. The serologic study must be extended for pregnant women and complemented with epidemiologic data.
Hospitalization potential of an infectious diseases division: Persisting concerns

R. Manfredi
University of Bologna, Bologna, Italy

**Background:** Notwithstanding the deep modifications of the natural history of HIV/AIDS, the hospitalization potential of Infectious Diseases (ID) wards remains largely inadequate in Italy, according to the continued modification of epidemiology and disease spectrum.

**Methods:** A surveillance study of patients (p) needing hospitalization at our inpatient ward (located at S. Orsola Hospital, Bologna, Italy) and their outcome, was prospectively performed.

**Results:** From January 2000 to May 2002 our inpatient unit could rely on 16 beds, while since June 2003 (after joining with the other ID unit of our 800,000-inhabitant metropolitan area), the available beds rose to 35. The ID Specialist must act as a consultant for every p with a suspected ID, to assess need of hospitalization and/or isolation measures, and eventually search an adequate place (the so-called “bed service”), should room is not available at our ward. The rate of p admitted elsewhere dropped from the year 2000 (34.3%), to 2001 (26.9%), and 2002 (12.9%), but reached a stabilization during years 2003-2008 (12.1%; p < .0001 versus year 2000). Among the 771 p who could not be admitted by us, no epidemiologic differences were found during time, and HIV disease prevailed (311 p: 40.3%). When infectious (but not diffusive) illnesses are of concern, p may be accepted by other city hospitals, while the event of diffusive ID required a transfer to the closest ID ward. Until May 2002, the other city ID Unit accepted over 30% of p, but the unification into a single ward partially reduced the need of transfers 40-115 Km far from our city, stabilizing the rate around 12-13% in the last six years. Among the 311 HIV p not accepted at our ward, 26% had a place at the other ID ward, 61% at our Hospital, 3% at Hospitals of the Bologna province, while 10% needed a transfer to other cities.

**Conclusion:** Still in the third millennium, ID wards play a key role in health care inpatient assistance, although a continuous fitting to prevailing ID and available resources is needed. The lack of suitable beds for p needing admission remains a striking problem, especially when p with acute-severe illness are of concern, and a long-distance transfer may lead to potentially severe risks for p health, and breakdown of isolation/protection measures.
The immigration and HIV disease. Consequences on inpatient hospitalizations and Day-Hospital admissions at an Italian Infectious Diseases Division of a metropolitan Hospital, during the last nine years

R. Manfredi
University of Bologna, Bologna, Italy

Background: Immigration is a recent phenomenon in Italy, mainly caused by the sudden and unexpected arrival of waves of foreign citizens, refugees, and individuals escaping from war. This phenomenon is of great concern, due to its serious social-economic and health care impact.

Methods: A prospective survey of all charts of patients (p) hospitalized or followed on day-hospital (DH) basis at our Infectious Disease ward until end-2008, allowed us to assess the frequency of admission of immigrants from extra-Western Europe (eWE), and to analyze multiple variables related to multiple epidemiological and clinical features.

Results: The rate of p immigrated from eWE showed a significant increase among our inpatients, and at a lesser extent and later for DH admissions: 7.7% and 3.1% during the year 2000, 10.1% and 4.6% in 2001, 13.2% and 6.2% in 2002, 17.9% and 7.9% in 2003, 21.3% and 8.9% in 2004, 17.7% and 10.8% in 2005, 17.9% and 11.3% in the year 2006, 17.3% and 10.9% in the year 2007, up to 17.7% and 11.4% in the year 2008 (p<.0001 for inpatients; p<.001 for DH p). Over 60% of p came from Africa, followed by Eastern Europe, Asia, and Central-Southern America. When comparing the admission features of WE citizens with those of p coming from abroad, no differences were found as to duration and intensity of assistance, with HIV disease prevailing among regular admissions (33.6%), and DH access (30.2%), followed by acute-chronic hepatitis, pulmonary or other-site tuberculosis, central nervous system and respiratory tract infection, and sexually-transmitted diseases. HIV-infected immigrants were frequently (>60% of cases) “AIDS presenters”, and less than 5% of them were already on an antiretroviral therapy upon admission. While the frequency of HIV-associated admissions did not show differences in the considered 9-year period, p from eWE had an increasing frequency of tuberculosis, skin-soft tissue infection, infectious exanthems, gastroenteric-parasitic diseases, and malaria (p<.05 to <.0001).

Conclusion: A continued monitoring of this phenomenon is strongly warranted, in order to improve a sustainable social-cultural network, to plan health resource allocation for the next future, and to define adequate and well-targeted prevention and public health measures.
Evolving assistance issues at an infectious disease day hospital service in the last fifteen years (1994-2008)

R. Manfredi
University of Bologna, Bologna, Italy

**Background:** Aim of our study is to evaluate the frequency and features of admissions performed at an Infectious Diseases Day-Hospital service at S. Orsola Hospital, Bologna, Italy.

**Methods:** A retrospective evaluation of all admissions of the last 15 years (1994-2008), was performed.

**Results:** Before the introduction of potent, combination antiretroviral treatments (cART) (years 1994-1996), the proportionally low mean number of admissions (110/year), was linked to the elevated prevalence of HIV disease, which accounted for 89.4% of Day-Hospital hospitalizations, their recurrence, and their prolonged duration. Immediately after cART introduction, the number of Day-Hospital admissions showed a significant increase, from 171 (year 1997), to 318 (2002), 338 (2003), 347 (2004), 331 (2005), 356 (2006), 341 (2007), and 378 (2008) (p<.0001 versus the pre-cART era), although this phenomenon paralleled a drop of percentage of HIV-related admissions (from 59.1% of 1997, to a minimum of 23.8% of the year 2005; p<.0001). While HIV-associated hospitalizations decreased, a temporal increase of admissions due to chronic liver disease occurred (p<.0001). The reduction of admission duration allowed an increase of overall number of hospitalizations of each examined year (p<.0001), and the mean bed occupation rate showed a continued rise (8.2 in the year 2000, to maximum value of 12.0 reached in the year 2006 (p<.0001).

**Conclusion:** The modifications occurred at our Infectious Diseases Day-Hospital service during the last 15 years are largely attributable to the significant changes occurred in the spectrum of infectious disorders which came to our attention: from a low number of prolonged hospitalizations typical of patients with advanced HIV disease, the cART era led to a progressive broadening of the spectrum of disease, and a notable reduction of admission time. Notwithstanding this situation, no significant modification was observed as to mean weight of diagnosis-related group (DRG) features: from a mean 1.03 rate per patient of the year 2000, to a mean 1.33 figure in the year 2008. The evolution of assistance features in a Day-Hospital setting, seems strictly linked to the modification of prevailing disorders. A permanent monitoring of the features of health care provision at an Infectious Disease Day-Hospital service may allow to consider significant temporal modifications, and contribute to ensure adequate assisstential planning, including the eventual revision of structural, professional, technical, and funding resources.
Background: The 2009 H1N1 epidemic in India commenced in the city of Pune (western India). Though it subsequently spread to the other parts of the country, Pune continued to harbor the maximum number of cases.

Methods: Methods – The factors contributing to the spread and the steps undertaken for its containment in this city were studied.

Results: The index case was a 14 year old girl. Since she had no history of exposure to a person from overseas travel or an exposure to a symptomatic person, the diagnosis and treatment remained along the lines of a Community acquired pneumonia. She was treated at private hospitals. It was after she developed ARDS, that the suspicion of H1N1 arose. There was a paucity of testing centres and a restriction on the availability of Oseltamivir in the initial stages. The subsequent laboratory diagnosis and Oseltamivir administration to the girl could not prevent mortality in her on 3rd August 2009.

Problems faced in the initial part of the outbreak in the city –
Lack of a foreseen plan to deal with such an epidemic situation. Paucity of testing centres. Lack of public-private health partnership initially. Media sensationalizing the mortality of the index case as a reflection of the failure of the private sector.

Steps taken subsequently –
Designated screening centres set up. Categorizing of patients for testing, admission and administration of Oseltamivir. Screening for early detection of cases among passengers arriving from affected countries. Opening up of private hospitals for management of cases. Temporary closure of educational institutes and public places. Mass media campaign to educate people on prevention.

Till date, the total number of cases in the country have been 13, 142 with a mortality of 431 (3.27%). In the city of Pune, the mortality has been 90 out of 2012 cases (4.47%).

Conclusion: Guidelines outlining co-operative collaboration between the public and private health sector and a constructive role of the media is important in dealing with such outbreaks.
Final Abstract Number: ISE.131
Session: International Scientific Exchange

Evaluation of maternal and child health services at block PHC Harduaganj, Aligarh, (UP), India

S. Singh
NCDC,Delhi,India, Delhi, Delhi, India

Background: India has good infrastructure for delivery of Maternal Child Health (MCH) services, but this system does not function effectively because of various reasons. Keeping in view of the various hindrances in utilization of these services, present study was proposed with the objectives-(1) To Evaluate the MCH services coverage at PHC level and its utilization pattern (2) To identify, barriers in MCH programme utilization.

Methods: A cross- sectional study was conducted from 1st August to 31st December 2007, at block PHC Harduaganj, Aligarh (UP). 181 antenatal mothers, 72 postnatal mothers, and 152 mothers having children of age 2 month -23 month,3 medical officers, 28 ANMs, 14 ASHA and 12 Aanganwadi Workers (AWW) were interviewed as per pre designed performa.

Indicators used:
Input indicators – Structure of programme, available human resources, building, vehicles, cold chain equipment and availability of vaccines.
Process indicators – recording and reporting, supervision, continuity of supply, ANC coverage, immunization rate and IEC activities under process.
Output indicators- MMR, IMR

Results: At block PHC three posts of ANMs were vacant, 50% Sub centres were running in rented building and all PHCs were having poor physical infrastructure.
1.4% mothers had three antenatal checkup, 75% of mothers took two doses of TT and 23.6% consumed 100 Iron Folic Acid Tablets and 37.5% delivered at home. Post Natal Checkups were done only in 31.9% cases. 37.5% mothers initiated breastfeeding within first two hrs of birth. 65.8% children were found fully immunized. Fear of fever and infection to their child (38.5%) were observed as major barriers in utilization of MCH services.

Conclusion: By providing Refreshment training, ensuring availability of working instrument and their proper utilization, posting of at least one lady medical officer at PHC level, we can achieve goals as stated by the programme.
Background: Bartonella spp seroprevalence in blood donors varies between less than 1% to 51% depending on geographical location. This study's aim was to find the antibody prevalence to this infection in blood donors in the city of Rio de Janeiro.

Methods: Blood donors’ sera were studied after authorization of the Ethics Committee from the State of Rio de Janeiro Central Blood Bank in the city of Rio de Janeiro (Hemorio). Blood had been donated at Hospital Municipal Raphael de Paula Souza, Jacarepaguá, during the year of 2007. A commercial immunofluorescence assay was used _Bartonella henselae_ IFA IgG (Bion R, USA); cut of titer utilized was 1:32. Statistical analysis using Yates' correction of chi-square was done with EpiInfo statcalc.

Results: 125 healthy blood donors were included; their sera had been screened for HIV, hepatitis B and C, syphilis and Chagas’ disease, as is routine in Brazil. There were 64 female and 61 male individuals. Mean age±standard deviation was 37.3±9.4, median was 35. These patients lived in the greater subárea of Jacarepaguá, in Rio, where the largest urban forest in the world is located, part of the Atlantic Rainforest. No other data regarding occupational exposure and exposure to vertebrate and invertebrate animals was available. Bartonella spp seroreactivity was 43/125(34.4%). Titers were 1:32 in 29 patients, 1:64 in 10 patients and 1:128 in 4 patients. A difference regarding sex and antibody seroprevalence was found: 14/61 (23 %) of males vs 29/64 (45.3%) of females were seroreactive to Bartonella spp (p < 0.01, CI 1.2-6.5, OR=2.8).

Conclusion: This is the first study in Latin American evaluating the presence of Bartonella antibody in blood donors. High seroreactivity rate was found as well as a sex difference, with more females infected, what is in accordance with the literature. This seroepidemiological study suggests the circulation of this proteobacterium, which is the classical agent of cat-scratch disease but is also responsible for severe syndromes such as retinitis, meningoencephalitis and infective endocarditis.
Decentralization in health sector and the impact in eradication infectious diseases programme (P2M)

M. Misnaniarti
Sriwijaya University, Palembang, Indonesia

Background: One aspect which is worth noticed as one impact of decentralization policy in health sector is that of budget allocated for strategic programs like Eradication infectious diseases (P2M). Financing is the important aspect because execution input program the health service as part of effort improve the status of society health. Therefore require to be searched by the correct budget allocation, so that budget proportion can be well-balanced usher each disease program

Methods: This study is observasional research with the approach qualitative. Research population cover all Health office distric/town in South Sumatra Province. Data obtained from interview with functionary in health office Province, health office distric/town to know the support to Program P2M, and also data from document observation to learn the pattern of budget allocation used by case DHF, Diarrhoea, Malaria, tuberculosis and HIV/AIDS, what is compared to by incidence rate of each every the case

Results: This result known that the proportion of budget Program P2M in every distric/town vary depended by a priority program executed. Distric/town with the Original Earnings of big area tend to the big enough fund allocation at this program, so also on the contrary. Financing program P2M every regency is not depended to high lower of number of disease occurence in the year previously. In Ogan Ilir health office from year 2006 with the Tuberculosis case which increasing, in the reality don’t get the fund allocation from APBD. This Matter because of existence of relief fund from outside country in the form of Global hibah of Fund from WHO, so that stakeholder have a notion fund of APBD of allocation to other programme

Conclusion: Conclusion this research known that decentralization in health sector not yet shown the impact which are positive at execution program the P2M, especially in defrayal aspect program to vary depended by ability of area finance, and program the the area priority. Recommended for all Health Office in South Sumatra Province, so giving correct budget allocation pattern at this programme P2M, so at a period of coming can degrade the incidence rate
Program evaluation of TB surveillance in Isfahan, Iran (2005-2006)

A. Babak, Z. Farajzadegan, L. Manzouri, F. Farid, R. Fadaei
Isfahan university of medical sciences, Isfahan, Iran, Islamic Republic of

Background: Tuberculosis (TB) is in the 7th grade according to Disability Adjusted life years (DALY) and will stay in this grade until 2020. In the developing countries 25% of preventable deaths are due to TB that 75% of them occur in labor force people. The main reason of this outcome is ineffective national programs for TB surveillance in the countries. Therefore, periodic program evaluation of TB surveillance is essential.

Methods: This is a Health system research (program evaluation) study that has been conducted in Isfahan district (2005-2006). Data were collected from all epidemiologic forms that were sent to Isfahan provincial health center. Data were analyzed by SPSS v.15 statistical package used paired and one sample t-test. The outcome and process indices were computed and compared with standards.

Results: The computed indices in southern and north-western area of Isfahan district in 2005 and 2006 were: case detection rate (CDR) 26% and 28%, incidence of smear-positive cases per 100000 population 2/15 and 1/92, conversion rate 78/33% and 82/29%, cure rate 65/83% and 58/33%, completion rate 2/5% and 6/25%, success rate 68/33% and 64/58%, failure rate 9/16% and 3/12%, respectively. These indices in central and north-eastern area of Isfahan district in the same years were: CDR 90% and 77%, incidence of smear–positive cases per 100000 population 2/28 and 1/11, conversion rate 87/5% and 81%, cure rate 77/5% and 56%, completion rate 2/5% and 2%, success rate 80% and 58%, failure rate 2/5% and 4%, respectively. There was a gap between CDR, new case incidence of smear positive lung TB, success rate and cure rate and the standard rates (for all of them, p-value = 0.001). The study also revealed a reduction in the incidence rate, cure rate and success rate in 2006 compared with 2005 (p-value = 0.002, 0.001, 0.000 respectively).

Conclusion: The results reveal a problem in accomplishment the TB-surveillance program. Continuous monitoring of this program will lead to improvement the indices.
Prevalence of hepatitis B and C virus in barbers in the isfahan city – Iran 2007

B. ataei1, P. shoaei1, M. yaran1, A. Babak1, P. adibi1, Z. nokhodian2, N. Kassaian1
1 Isfahan university of medical sciences, isfahan, Iran, Islamic Republic of
2 Isfahan university of medical sciences, isfahan, Iran, Islamic Republic of

Background: Hepatitis B virus (HBV) and hepatitis C virus (HCV) infections are among the most threatening health problems in the world including Iran. Contact of patient's blood or bodily fluids with non-intact skin is another mode of HBV and HCV transmission. In some countries, barbers classified between high risk groups for these infections. Barbers in Iran may often be exposed accidentally to the blood and bodily fluids of their customers.

We have restricted studies about this study in our country and lack of a similar assessment in Isfahan province. The aim of this study is to determine the prevalence of HBV, HCV and their risk factors in barbers.

Methods: This is a cross-sectional study that targeted the barber's population of Isfahan city. They administered a questionnaire and collected a blood sample for anti-HCV, HBsAb, HBC Ab and HBsAg.

Results: 479 barbers (246 women and 233 men) were screened for HBsAg, HBsAb, HBC Ab and HCV Ab with a mean age of 39±11.4 years. 4 (0.8%) were positive for HBsAg, 6 (1.3%) were positive for HBC Ab. 276 (57.7%) were positive for HBsAb. No significant relationship was found between sex, vaccination against HBV, health training classes, special service (such as tattooing, ear-puncture, manicuring and so on).

Conclusion: Both HBV and HCV infections may constitute occupational hazards for barbers. The sources of infection could be not only such personal risk factors as sharp injuries and scissors cuts but may also include other unknown factors but our data didn't show significant values about it and need more studies.
Rapid diagnostics and epidemiologic surveillance - Focused health intervention following political unrest

G. Clark¹, J. MacDougal², M. Taher³, A. Ager⁴, T. Walsh⁵, L. B. Carter-Meletich⁶, D. Stafford⁷, R. Hammesfahr⁸
¹MEDCAP International, Inc., Miami, FL, USA, ²Iraq Advisor Task Force (IQATF) MEDCOM, Baghdad, Iraq, ³Health Directorate General’s Office, Dewaniyah Province, Iraq, Dewaniyah, Iraq, ⁴University of Miami - School of Medicine, Miami, FL, USA, ⁵1st MED BDE (MEDCOM), Baghdad, Iraq, ⁶South Oregon Rural Health Center, Ashland, Oregon, OR, USA, ⁷IQATF, MEDCOM, Baghdad, Iraq, ⁸US Special Operations Command Surgeon's Office, Tampa, FL, USA

Background: Several forms of rapid diagnostic technology are on the market in dip-stick, cassette, flow-through device, agglutination technologies and compact, simple machines. These items are generally accurate, inexpensive, rugged and, temperature-stable. They require little training, provide immediate results and show great potential to replace complex, expensive conventional methods. Alleviating voluminous laboratory supply materials, large machines and transport of samples is suggested to further off-set discomfort in modifying diagnostic approaches and paradigms. Rapid assays are suggested for inclusion into treatment settings and serve health care administrations for structuring laboratory service in medical facilities, performing health screenings and establishment of epidemiologic sentinel surveillance systems. The extension of diagnostic and epidemiologic capacity is possible to the farthest reaches of medical service, beside their use in standard laboratory operations. Rapid assays allow early detection and direct intervention in the primary care setting. They show potential to accelerate the efficiency of preventive medicine initiatives, focus the scrutiny of medical support planning and improve health promotion matrices. Ethical, historical, social and medical-culture issues are addressed for insight to the practicality of rapid diagnostics integration into Iraqi health initiatives.

Iraqi Medical Extension

Methods: Free medical screenings will be executed where EID or REID (cholera, malaria, toxoplasmosis, etc.) challenges exist. Preventive medical initiatives (PSA, cholesterol, glucose levels, etc.) are also planned to expose the health sector and build public confidence in new medical capacity-building. Modification of diagnostic paradigms will be monitored to assess acceptance and adaptations in efficiency, medical extension, expense and speed of diagnostic results. Culturally-sensitive imperatives are addressed.

Iraqi Health Screening

Results: The application of rapid assays and simple, point-of-care machinery have proven effective in off-setting the difficulties of delivering good medicine in difficult areas of practice. Iraqi medicine shows potential in this respect.

Conclusion: Iraq has lagged in medical development for many years, beside recent war incumberances. Those who fled were typically the emeritus and elite physicians. The joining of major facility physicians with allied health rural community stewards has proven effective in medical extension. The catharsis Iraq has undergone in many aspects of society suggests it is a fertile nation for cultivating technical approaches and advancements which bound into the future.
Anti-HCV positivity in cases with history of Intravenous drug abuse via community announcement: A useful experience
B. ataei¹, R. Fadaei², N. Kassaian³, Z. nokhodian³, M. yaran², M. meshkarit⁴, P. adibi²
¹isfahan medical university, isfahan, Iran, Islamic Republic of, ²isfahan university of medical sciences, isfahan, Iran, Islamic Republic of, ³isfahan university of medical sciences, isfahan, Iran, Islamic Republic of, ⁴MEDICAL UNIVERSITY, ISFAHAN, Iran, Islamic Republic of

Background: Injection drug use plays an important role in transmission of hepatitis C. In Iran, surveys have been conducted on various high risk groups but this is the first announcement based study for anti-HCV prevalence among cases with history of intravenous drug using (IVDU) in the country.

Methods: The announcement-based detection and follow up of patients with anti-HCV positive project in volunteers with history of IVDU was conducted during Nov 2008-March 2009 in Isfahan province. At the first step, all of the project colleagues were trained about study procedures. 2 pilot studies were carried out in two cities and the results were used for the main study. Comprehensive community announcement was done in all of public placed and via SMS and E-mail for physicians. The volunteers were invited to reference laboratories and the serum samples were sent to Infectious Diseases Research Center Laboratory in standard conditions and HCV-Ab was tested by ELISA method and confirmed by RIBA test.

Results: In this study, 1747 were presented themselves which it is estimated 25% of all expected IVDUs in the community. The most reasons of coming volunteers in this study were the perfect propaganda and appropriate encounter of lab staffs with them. HCV infection was detected in 34% of them and the patients were sent for further follow-up procedures including education and treatment.

Conclusion: In spite of some limitations to select real cases, compared to the surveys in Iran on HCV prevalence in IVDUs, the results of this study which was based on volunteers by announcement, seems to be admirable.
Estimated prevalence of HCV in Isfahan, Iran
B. ataei\textsuperscript{1}, P. adibi\textsuperscript{2}, N. Kassaian\textsuperscript{2}, Z. nokhodian\textsuperscript{3}, M. meshkati\textsuperscript{4}, S. Mobasherizadeh\textsuperscript{5}, P. shoaei\textsuperscript{2}, R. Fadaei \textsuperscript{2}, A. R. Pahlevani\textsuperscript{6}
\textsuperscript{1}isfahan medical university, isfahan, Iran, Islamic Republic of, \textsuperscript{2}isfahan university of medical sciences, isfahan, Iran, Islamic Republic of, \textsuperscript{3}isfahan university of medical sciences, isfahan, Iran, Islamic Republic of, \textsuperscript{4}isfahan university of medical sciences, isfahan, Iran, Islamic Republic of, \textsuperscript{5}MEDICAL UNIVERSITY, ISFAHAN, Iran, Islamic Republic of, \textsuperscript{6}Infectious Diseases Research Center, Isfahan University of Medical Sciences, Isfahan, Iran, Islamic Republic of

Background: There are limited studies about hepatitis C prevalence in general population in Iran but it is estimated to be <1%. Hence this was conducted to obtain estimated prevalence of HCV in general population in Isfahan province, Iran.

Methods: In a cross sectional study in 2008-2009, cases with history of intravenous drug abuse (IVDA) from prisons, Drop in Centers and community were tested for HCV-Ab. Number of registered cases with HCV infection from provincial health center and treatment administration was obtained as well. Finally, estimated prevalence and coefficient were calculated based on this information.

Results: In our project, 3284 with IVDA were tested for HCV-Ab and we estimate that 6716 ones remained while total registered cases with IVDA in Isfahan province is 1053. In our project, there were 1252 positive cases for HCV-Ab while, the total registered patients with HCV infection were 1059(733 IVDA and 326 multi transfused) in Isfahan province. According to this information, the estimated and prevalence rate of cases with HCV infection will be 4854 ones and 0.11% respectively in Isfahan province and estimated coefficient will be 4.4.

Conclusion: The results of this study conform to what has been reported before and it is recommended to carry out analogous studies in the other parts of Iran to create prevalence map in the country.
The exploratory study of capacity assessment model for infectious diseases surveillance and response system

Q. Zhao, Q.-W. Jiang, J. Wei, G.-M. Zhao
School of Public Health, Fudan University, Shanghai, China

Background: An important lesson from SARS outbreak in China is that inadequate surveillance and response capacity can result in disease epidemic, and cause mass pandemic in communities, furthermore, endanger the national public health security. To meet the long-term needs of public health and social development of China, it is in urgency to establish a comprehensive response system and crisis management mechanism for infectious diseases. An assessment of infectious diseases’ surveillance and response system is the initial step for capacity building.

Methods: Field investigations with structured questionnaires were carried out in 24 centers for disease control and prevention. Reliability and validity of the questionnaires were tested by calculating Cronbach’s _ coefficients and spearman correlation coefficients. Factor analyzing was used to set up assessment model.

Results: The comprehensive assessment index system was consisted of 211 indicators and constructed with eight dimensions, i.e., (x1) protocols, rules, regulations, operating manuals, (x2) surveillance and alert, (x3) laboratory confirmation, (x4) emergency response team and experts, (x5) information communication, dissemination and coordination, (x6) training and drills, (x7) response capacity and (x8) reserve. The internal consistency was varied from 0.5833 to 0.9637 while the overall Cronbach’s _ coefficients was 0.9737. Totally five over eight _ coefficients were higher than 0.8. Spearman correlation coefficients test showed that the correlation between dimensions of the questionnaire was also have significant relationship (p<0.05). The factor analysis extracted three common factors of emergency, identification and assurance, which constitutes the triangular model to describe and evaluate the capability of infectious disease surveillance and response.

Here y was a capacity score of infectious disease’ surveillance and response system.

X4, x5 and x7 had a greater contribution to Femergency, which was a capacity score for emergency control. X2 and X3 had a greater contribution to Fidentification, which was a capacity score for detection and recognition of infectious disease at CDCs. And x1, x6 and x8 had a greater contribution to Fassurance, which was a capacity score of material stockpile of CDCs.

Conclusion: The comprehensive assessment indicator system was rational and scientific, and also reliable and valid for capacity evaluation of infectious diseases’ surveillance and response system at county level.
Study of Malaria in Mazandaran Province during 1999-2003

N. najafi¹, R. Ghasemian²
¹mazandaran medical university, Sari, Iran, Islamic Republic of, ²mazandaran university of medical sciences, 48167-13319, Iran, Islamic Republic of

Background: Malaria is one of the most fatal infectious disease which annually kills more than 2 million person world wide. This parasitic infectious disease with global incidence rate of 300-500 million person is one the most important complaint of our health system despite of strict preventive and treatment program in IRAN. Because of special condition of Mazandaran climate we have both the sporadic and the endemic form of this disease in different parts of our province, though the authors of present study try to define the epidemiologic condition of the disease through an incidence survey between 1999-2003 in Mazandaran University of Medical sciences.

Methods: Present study is a descriptive study (old data), that was done an 184805 file during a five years period between 1999-2003 in all of the 14 health center of Mazandaran province. Through a questionnaire consist of eleven questions like demographic situation and the other characteristics of patients, we collected our data and then analyzed it by using descriptive statistical methods by SPSS software.

Results: According to the goal of the research, through 184805 files, 518 patients were found with infected with different kinds of the parasite genus, of whom 80.3% were the Afghan refugee, 13.7% were locally infect and 5% of them were passenger who came to Mazandaran from other Malaria endemic areas. The most of the cases (57.1%) belong to the age group (21-30 years) and 88.4% of them were male. Plasmodium Vivax was the most common genus (96.9%). By the way, we noticed %150 increase in annual parasite Incidence (API) during 1999-2003.

Conclusion: According to high Incidence rate of the disease, specially in southern and northern party of IRAN as well as high immigration rate from our infected neighbour country and special condition of Mazandaran climate, we must continuous campaign against Malaria. Specially in favor of increase of incidence rate of Malaria from 0.02% to 0.05% during this five years period. We need to enforce the eradication program of Malaria and improve the health system and fighting against the vector (Anophel).
Through introduction of community-based health interventions in Rwandan rural areas, parents can increase child survival

**M. L. ANACLET**  
Trainning as a Postgraduate, but, RW, Rwanda

**Background:** Rwanda is a small country in East Africa with a population of 9.3 millions, one doctor per 18,000 inhabitants, one nurse per 1690 inhabitants with 62.8% of nurses in rural areas. Infant mortality: 62/1000, Under 5 Mortality: 103/1000, Maternal mortality: 750/1000, Contraceptive prevalence: 36%, Per capita utilization of Health facilities: 55%, Life expectancy at birth 52.7, Under 5 years severe malnutrition: 19.4%. The country has lack of skilled health providers to cove the huge need of health care in the country side where 90% of population stay.

**Methods:** This trial is a cluster-randomized controlled trial involving 160 clusters. The study will run for 2 years. The interventions will be introduced in two stages: eighty clusters will receive the interventions at the beginning of the project, and others eighty control clusters will ongoing by interventions 2 years after the first clusters if the research shows that the interventions are effective. The impact of the interventions and cost-effectiveness will be measured during the first stage. The package of interventions will include a community health promotion campaign and education through health clubs, intensive training and supervisions of village health workers for diagnosing and providing the first-line treatment of common children's diseases within the community.

**Results:** The aim of study is to assess whether an intervention package that includes community health promotion campaign and education through health clubs, intensive training and supervision of village health workers to diagnose and provide first-line treatment for frequent children's diseases within the community, and improved outreach services can generate a rapid and cost-effective reduction in under-five child mortality in rural regions of Rwanda. Effective intervention plans to expand the project to a much larger region if there is good evidence after two and a half years that the project is generating a cost-effective, sustainable reduction in child mortality.

**Conclusion:** The trial will be run by research and service delivery teams that act independently, overseen by a trial steering committee. A data monitoring committee will be appointed to monitor the outcome and any adverse effects.
Spatial distribution of dengue’s virus serotype in Bahia (BA), 2003-2008
R. Will¹, R. C. Soares²
¹State Health Secretary/ Secretaria Estadual de Saúde, Salvador, Bahia, Brazil, ²Fundação Nacional de Saúde/National Health Foundation (Funasa)/MoH, Salvador - Bahia, Bahia, Brazil

Background: We identify today the existence of four dengue serotypes: DEN-1, DEN-2, DEN-3 and DEN-4. In Bahia, there has already been identified the serotypes DEN-1, DEN-2 and DEN-3. In 2008, the record increase in cases and mortality boosted the actions, in an effort to assemble multidisciplinary strategies, in order to act on several fronts to address this serious public health problem.

This study analyzes the geographical distribution of the different dengue serotypes circulating in the state of Bahia in 2003-2008, and will be conducted following the epidemiological methods such as ecological study.

Methods: Analyzes of secondary database of the information system - SMARTLAB Central Laboratory of Bahia - Lacen. The studied population was classified according to the reported and confirmed cases of dengue serotypes DEN-1, 2, 3 and 4, distributed in the State of Bahia in the period 2003-2008 *.

As a basis for data analysis, it was used the information record that includes the results of tests for viral isolation in Lacen - Bahia, through Smartlab. The analysis was performed by mapping the geographic identification of serotypes of dengue and its frequency by Regional Board of Health and the State.

Results: By analyzing the spatial distribution of serotypes of the dengue virus in Bahia between the years 2003 to 2008 *, where were isolated DEN serotypes 1, 2 and 3, we can infer that the viral isolation and mapping has great epidemiological relevance for construction of strategies to combat the vector, considering that individuals infected with different serotypes develop the disease at its most aggressive form.

Conclusion: Despite the amount and percentage of municipalities with virus isolation, it does not mean that the percentage found refers to all the confirmed cases of the disease, but to the municipalities that were able to isolate the virus.

The vector control is an important strategy to control the epidemic, but part of this whole are the historical, social, economic and ecological knowledge of the geographical area in question, since through it the fight against the epidemic is more feasible, and the operation of this action becomes easier.
Epidemiological profile of leptospirosis cases in Calicut, Kerala, India, 2008

K. Mendhekar
North Delhi Power Limited (NDPL), Delhi, India

Background: Calicut is an endemic area for leptospirosis. Close interaction of human, animals soil and water in this region make the spread of leptospirosis to humans easy. Leptospirosis continuous to be major Public health problem in Calicut. This project was taken to analysed surveillance data to determine the epidemiological profile of leptospirosis cases in Calicut. These results will help in formulating strategy and control of leptospirosis in Calicut.

Methods: A leptospirosis is a reportable disease in Calicut. Information on demographics, clinical manifestations and outcome and laboratory confirmation was obtained from cases reported to the District Health Center and Medical college and hospital in Calicut between January 2005, 2006, 2007 and upto May 2008. The IgM Elisa test was performed for laboratory confirmation of leptospirosis. Multivariate analyses were performed to determine the risk factors for death among confirmed cases. Data was analyzed by using Epi-info software /spread sheet.

Results: During the three and half year surveillance period 328 cases of leptospirosis were reported in Calicut. All were laboratory confirmed. Mean annual incidence of leptospirosis was 11.39 cases per 100,000 population. Cases were mostly 70% adults ages between 21-60 years and 66% were male, 93% of low socioeconomic status. 47% resided in urban areas. In all major cities of Calicut, epidemic occur in each year and number of monthly cases was significantly correlated with monthly accumulated rainfall. Only few cases reported to the hospital due to poor knowledge of leptospirosis. Overall case fatality was 15%. Independent risk factor for death were increasing age, residence in urban areas.

Conclusion: Calicut is an endemic area for Leptospirosis. Clinical cases has steadily increased over past decade. It is major public health problem in Calicut due to annual rainfall associated epidemics which affect impoverished population in urban areas. Case fatality rate was highest among population with lowest socioeconomic status. Health impact assessment should be made mandatory for all developmental projects along with as environmental assessment.
The structure of viral hepatitis in a pediatric unit during nine years periods

E. Kallfa-Foto 1, H. Hoxha 2, G. Lito 1, R. Petrela 1
1 University Hospital Center Mother Theresa Tirana, Albania, Tirana, Albania, 2 University hospital center “Mother Theresa”, Tirana, Albania, Albania

Background: Viral hepatitis is still an important disease in our country. Since years 1995, after the vaccine was applied against hepatitis B, the incidence of this disease is lower, but the hepatitis A and C are still a big problem. For that reason we undertake this study to show the structure of this diseases.

Methods: The study has included 2162 children with acute viral hepatitis, admitted to the Pediatric infectious diseases clinic of the University hospital center “Mother Theresa”, during study period 2000-2008 Years. The diagnosis of hepatitis A, B, C, was made based on the serological criteria by the dosage of anti HAV-IgM, anti HBC-IgM, HBsAg and anti HCV. The epidemiological variables analysed were: age, fever, abdominal pain, gastrointestinal disturbances, jaundice. The laboratory investigations included ALT, AST, bilirubin level, alkaline phosphatase.

Results: The analysis of total number of cases, for each type of hepatitis was done for the study periods 2000-2008. The percentage of hepatitis A was uncounted in 62% of cases or 1342 cases, meanwhile hepatitis B was 5.3% or 115 cases. The remaining 32.1% or 695 cases has different etiological factors. The greater number of hepatitis A cases were diagnosed during the years 2007-2008. The cases of hepatitis B have decreased from 22(14.3%) in the 2000, to 0 during 2008.

Conclusion: Viral acute hepatitis A, still remains a mayor problem in Albania especially for pediatric infective morbidity. The low incidence for HBV, related with the introduction of HBV vaccine in the immunization schedule of our country since 1995 year, the reduction of blood and plasma transfusion and application of therapy by materials of single use.
Prevalence of occult hepatitis B infection in Iranian injection drug users

A. Ramezani, M. Banifazl, M. Sofian, K. Azadmanesh, R. Edalat, A. Eslamifar, A. A. Farazi, A. Aghakhani

1Pasteur Institute of Iran, Tehran, Iran, Islamic Republic of, 2Iranian society for support patients with infectious diseases, Tehran, Iran, Islamic Republic of, 3Arak University of Medical Sciences, Arak, Iran, Islamic Republic of

Background: Occult hepatitis B virus (HBV) infection is characterized by presence of HBV infection with undetectable hepatitis B surface antigen (HBsAg). Injection drug users (IDUs) are considered to be a main risk group for HBV infection and act as the reservoir for this blood borne virus. Because of the association between injecting drug use and HBV infection, it is not surprising that injection drug users also are at high risk for occult hepatitis B infection. This study aimed to determine the prevalence of occult HBV infection among injection drug users (IDU) with isolated hepatitis B core antibody (anti-HBc) in central province of Iran.

Methods: A total of 153 IDU who had served time in prison or referred to a behavioral disease consulting center in Arak city, Iran were included in this study. Hepatitis B surface antigen (HBsAg), Hepatitis B surface antibody (anti-HBs), anti-HBc, Hepatitis C antibody (anti-HCV) and Human immunodeficiency virus antibody (anti-HIV) were tested in all subjects. The presence of HBV-DNA was determined in plasma samples of individuals with isolated anti-HBc (HBsAg negative, anti-HBs negative and anti-HBc positive) by real-time PCR on the Rotor-Gene 6000 real-time thermal cycler.

Results: A total of 153 injection drug users with mean age 30.66 ± 5.92 years (range 20-50 years) were enrolled in the study. The duration of injection drug use was 5.2±5.1 years. All of them had history of incarceration. HBsAg, anti-HBs, anti-HBc, anti-HCV and anti-HIV were found in 7.2%, 43.8%, 35%, 59.5% and 5.9% of cases, respectively. HBV-HCV co-infection was observed in 5.9%, HBV-HIV co-infection in 2% and HCV-HIV co-infection in 5.2% of cases. 1.3% of subjects were co-infected with HBV, HIV and HCV.

Of the 153 injection drug users, 11 subjects (7.2%, 95% CI, 3.2%-11.2%) had isolated anti-HBc. HBV-DNA was not detected in any of 11 patients who had isolated anti-HBc.

Conclusion: Our survey showed that isolated anti-HBc and occult HBV infection were negligible in injection drug users who living in the Central province of Iran, where HBV prevalence is low, regardless of age and duration of injection drug use.
Mumps outbreak in a highly vaccinated population- Public health policy impact
A. Alsayyad, M. S. Almosawi, K. S. S. Nasser, J. S. S. Jawad
Ministry of Health, Manama, Bahrain

Background: In Bahrain, following the introduction of routine infant measles-mumps-rubella (MMR) vaccination in 1985, and the addition of a second routine dose of MMR vaccine in 1998, mumps became an uncommon disease in Bahrain. The average incidence of mumps in Bahrain for the period 2001-2006 was 5.7 per 100,000 populations. The total mumps cases were 22 in 2006.
This paper investigates an outbreak of Mumps among military and Police camps occurs in September 2007 and the implication for vaccination policy in Bahrain.

Methods: A cluster of mumps cases were reported from Bahrain Defense Force (BDF) hospital and ministry of interior clinic to Diseases control section (DCS) in public health directorate. The total cases were 317 from BDF and 797 from ministry of interior.
All suspected cases- except two cases from police clinic- were interviewed by public health specialist and the data collected using a standard mumps investigation form used in diseases control section.
The data entry and analysis was undertaken by EPI info program.

Results: A total of 56 cases were suspected of having mumps of which 25 were from BDF camp & 31 from police academy camp. Out of the 56 only 44 fit the WHO definition of either laboratory confirmed or epidemiologically confirmed mumps cases, of which 24 from BDF camp & 20 from police academy camp. A total of 15 cases were laboratory confirmed of which 9 from BDF and 6 from police.
The incidence rate was 3.9 % for both camps.

Conclusion: To review the immunization status of all newly recruited personnel in BDF and Police for completion of vaccination and to complete their vaccination.
To strengthen the communicable diseases surveillance among BDF & police camps.
Some features of needs (material, medical, social and cultural) of lonely elderly people in Uzbekistan
B. Mamatqulov
Tashkent Medical Academy, Tashkent, Uzbekistan

Background: Lifestyle of elderly people – is integral index that reflects not only intensity of disease symptoms but also functional and psychological condition of elderly, his social activity, satisfaction from aid of medical staff, sensation own health, physical and psychical wellbeing.

Methods: As a material of research were served personal recording cards of lonely elderly in three districts of social service of the Tashkent. Also were studied outpatient cards of lonely elderly from three polyclinics. On a base of special developed questionnaire studied social and hygienic conditions of living condition and mode.

Results: According to data the total number of lonely elderly taken registered by three district departments of Social Service of Tashkent city in 2008 made 732 persons. From them, men made 142 persons (20%) and women - 590 persons (80%). Classification by age showed that 207 lonely persons (28%) were in the age from 60 to 69 years, 192 (27%) – from 70 to 79 years, 125 (17%) – from 80 to 89 year and 4 (1%) up to 90 years. After studying outpatient cards of lonely elderly determined that in first place on diseases stayed cardiovascular disease – 75% (67) then diseases of locomotor apparatus – 15% (14), mental diseases – 7% (6) and oncology disease – 3% (3). All lonely elderly fell under prophylactic medical examination, and as a consequence of thereof they revealed the needs in treatment, health improvement in sanatorium, optical glasses, and technical means of rehabilitation. All 27 (3.5%) lonely people who required optical glasses supported with optical glasses. The need of all 20 (2.7%) lonely people in technical means of rehabilitation was covered, 34 (4.5%) lonely persons who required health improvement in the sanatorium were granted free-of-charge tickets to sanatoriums of the Ministry of Labor and Social Protection of population. All 567 (77.5%) lonely people who required treatment are treated.

Conclusion: - Lonely elderly compose definite part of population who need in treatment, social maintenance, material aid and communication;
- Fore said urgent requires developing and implementing new social technologies and mechanisms of medical and social maintenance of lonely elderly;
- Quality life of lonely elderly increased into two times after covering individual needs and increasing social maintenance.
Background: Brazil accounts for the majority of the dengue cases reported in Latin America, with co-circulation of DENV1, DENV2 and DENV3. A population-based sero-survey was conducted in three non-contiguous areas of a large urban center of Northeast Brazil in the years 2005 and 2006. A total of 2,833 residents aged between 5 and 65 years were interviewed and tested for IgG seropositivity in three diverse socio-economic areas. The global seropositivity of anti-dengue reached around 80%, being higher in the underprivileged urban setting. The current paper reports the serotype-specific prevalence of seropositive individuals selected randomly in the middle income setting.

Methods: The samples were tested using the Plaque Reduction Neutralization (PRNT) assay and titers were calculated as the highest dilution of antibody reducing 50% of the plaques of input virus. We analyzed the distribution of serotype-specific immunity to dengue by age and according to previous history of dengue illness.

Results: Of 198 individuals tested, 75.6% had two or three previous dengue infections and 26.8% had already been exposed to the three serotypes. DENV1/DENV3 dual infection was the most frequent finding (35.4%) in this setting. The serotype-specific immunity did not vary with age ($X^2=8.92$, df=4, $p=0.063$). Almost 80% of the children and adolescents had at least dual infection. Previous history of dengue illness was not a predictor of multiple serotypes infections.

Conclusion: The serotypes identified at population level were similar with the circulating serotypes reported by Brazilian laboratory surveillance system. The high percentage of multiple previous serotype exposures to dengue virus shows evidence of intense viral transmission inner city. Dual and multiple markers of dengue infection among children and youth may explain the increase severity of dengue cases in this Brazilian region.
Epidemiological profile of Methicillin-Resistant staphylococcus aureus in a poor-resourced area of Sub-Saharan Africa

A. Azeez¹, J. S. Utsalo², J. J. Epoke³
¹Bayero University, Kano, Kano, Nigeria, ²University of Calabar, Calabar, calabar, Nigeria, ³University of Calabar, Calabar, Cross River, Nigeria

**Background:** Methicillin-resistant Staphylococcus aureus (MRSA) are pathogens responsible for nosocomial and community-onset infections which have shown increasing endemic and epidemic spread globally in the past three decades causing significant morbidity and mortality. However, the epidemiological profile of this increasingly important pathogen is unknown in many locations of the poor-resourced areas of sub-Saharan Africa including Nigeria. The study was aimed to determine the epidemiologic and phenotypic (molecular procedure was unavailable) profile of MRSA in Calabar, south-south geo-political region of Nigeria. There is dearth of information on this subject in our environment

**Methods:** Clinical specimens were collected at random for analysis from various anatomical sites of 1,183 patients attending University of Calabar Teaching Hospital in Calabar, Nigeria. Isolation and characterisation of S. aureus including MRSA strains were performed using standard microbiologic technique including modified Kirby-Bauer agar diffusion method for in vitro antibiotic susceptibility test. The results were analysed statistically.

**Results:** Out of 198 S. aureus cultured, 72 isolates were MRSA giving a prevalence of 36.4 percent. MRSA recovery was highest in blood (septicaemia) (52.3%, 23/44) and wound (36.1%, 26/72) infections and was highly significant (p<0.01, r=-0.083) in patients aged 0-9 years and 50years. Our MRSA isolates showed high level resistance to cotrimoxazole (mean, 95.5%), penicillins (mean, 97%), tetracycline (mean, 93.9%), cefuroxime (mean, 83.4%), erythromycin (mean, 80.3%) and chloramphenicol (mean, 74.8%). However, vancomycin (mean, 5.2%), ciprofloxacin (mean, 21.8%) and amoxicillin/clavulanic acid (mean, 23.3%) were most active against our MRSA isolates. Over 70 percent of the isolates showed resistance to more than four antibiotic groups while one strain was resistant to all of the antimicrobial agents used. Two antibiotic clones (ucTh-1g and 2h) of MRSA were detected at this centre. The multiple antibiotic resistance (MAR) index was 0.6 (8/13). Over 90 percent (97.8%) of the isolates produced beta lactamase. MRSA showed greater tolerance to dettol and bleach (MIC, 1:80; MLC, 1:40), than savlon and purite (MIC, 1:160; MLC, 1:80).

**Conclusion:** The above scenario will have significant implications on chemotherapy and control measures of MRSA-associated infections. Strict observance of basic hygiene, aseptic routines, regular surveillance (uncommon in most poor-resourced areas of Africa (Nigeria inclusive) including rational and regulated use of antibiotics and disinfectants will limit the spread of MRSA infections in this environment
Influence of household environment and living conditions on incidence of diarrhea and acute respiratory infections among slum children of eight major cities of India

M. N. Singh\textsuperscript{1}, C. Shekhar\textsuperscript{2}

\textsuperscript{1}International Institute for Population Sciences, Mumbai, India, \textsuperscript{2}International Institute for Population Sciences, Mumbai, Maharashtra, India

\textbf{Background:} In India, Millennium Development Goals cannot be achieved without taking into account the health of urban poor. Among urban poor, slum dwellers are the most vulnerable as they face several health risks due to absence of basic amenities, unhygienic living conditions and filthy environment. As a result, especially children under age five are exposed to diseases like Diarrhoea, and Acute Respiratory Infections (ARIs), which are major killer among them. First time in India, the National Family Health Survey (2005-06) provides the individual and household level information on living conditions, household environment and children's health status of urban slum dwellers living in eight cities of India.

\textbf{Methods:} A sample of 2803 children under age five years from slum area is analyzed in this paper. Both bivariate and multivariate analyses are carried out in the present study. To understand the incidence of Diarrhea and ARI, logit regression analysis along with percentages was carried out.

\textbf{Results:} The prevalence of Diarrhea is higher in unsafe toilet facility with 7 per cent; similarly it is higher in ARI with 7 per cent and cough/fever with 15 per cent. Other type of unsafe toilet facility has greater impact Diarrhea with 6 per cent, ARI with 8 per cent and cough and fever with 20 per cent. Unsafe disposal of child’s stool in latrine/rinse/ diaper also has less impact on Diarrhea 11 per cent, ARI 12 per cent and cough/fever 23 per cent, whereas other method of disposing child stool has greater impact on Diarrhea 10 per cent, ARI 12 per cent and cough/fever 23 per cent.

\textbf{Conclusion:} Mothers become more knowledgeable regarding the child care with the increase of their age. Looking at the differentials and covariates of the childhood illness it is suggested that the National Urban Health Mission which is still in planning state should try to reduce the socio-cultural inequalities of childhood illness in urban areas. Effective communication strategies have to be taken up to educate mother and other family members regarding the childhood care. The local municipal bodies should also ensure supply of pure drinking water and proper drainage facilities in slums areas.
Some characteristics of “novel” influenza A (N1H1) pandemic in Norway, the experience from Oppland and Hedmark counties up to week 47, 2009

V. Hasseltvedt
Sykehuset Innlandet Trust, Lillehammer, Norway

Background: This presentation deals with impact of the pandemic of “novel” influenza A (N1H1), in Oppland and Hedmark counties, Norway, from the end of April 2009 up to week 47, 2009. The area of the two counties is greater than Denmark. The population is approximately 400 000 – data end of 2008 – Norwegian Bureau of Census – URL: http://www.ssb.no.

Methods: “Novel” influenza virus A (N1H1) – as well as influenza viruses A and B, in general, have been diagnosed at Sykehuset Innlandet Trust, Lillehammer by PCR, using standard protocols, available via URL - http://www.cdc.gov – among others.

Results: From the end of April 2009 to week 47, 2009: No PCR-confirmed cases of influenza B detected, however, there was one case of influenza H3, ex-Kampuchea - confirmed by PCR on July 24, 2009. The rest of the cases have been “novel” influenza virus A (N1H1) exclusively. According to URL: http://www.fhi.no, the total was 88 PCR-confirmed cases – data as of end of week 47. We have experienced that around 15-20 percent of the samples were confirmed PCR-positive at the end of the period, compared to around 25 per cent around week 44.

Conclusion: In our two counties there is evidence that – what may be “the first wave” of the pandemic - is “levelling off”. We experience – much in the same manner as with hemorrhagic fever with renal syndrome (HFRS) that numerator and denominator data indicate a culmination of the regional outbreak - so far. It is expected that the weekly incidences will continue to decline throughout the winter of 2009/2010. When and/or if there will be a second wave during the first quarter of 2010 – or later – is open.
Frequency of occult hepatitis B virus infection in HIV infected patients

A. Ramezani 1, A. Aghakhani 1, M. Mohraz 2, A. Eslamifar 1, M. Banifazl 3

1Pasteur Institute of Iran, Tehran, Iran, Islamic Republic of, 2Iranian Research Center for HIV/AIDS, Tehran, Iran, Islamic Republic of, 3Iranian society for support patients with infectious diseases, Tehran, Iran, Islamic Republic of

Background: Detection of hepatitis B virus (HBV) DNA without detectable hepatitis B surface antigen (HBsAg) is defined as occult HBV infection. In patients co-infected with human immunodeficiency virus (HIV) and HBV, HIV interferes with the natural history of HBV infection by enhancing HBV replication; leading to more severe liver disease. The aim of this study was to assess the occult HBV infection in Iranian HIV-positive patients with isolated hepatitis B core antibody (anti-HBc).

Methods: The presence of HBV-DNA was determined quantitatively in plasma samples of HIV-infected patients with isolated anti-HBc (HBsAg negative, anti-HBs negative and anti-HBc positive) by real-time PCR using the artus HBV RG PCR kit on the Rotor-Gene 3000 real-time thermal cycler. Hepatitis C antibody (anti-HCV), alanine aminotransferase (ALT), aspartate aminotransferase (AST), HIV viral load and CD4+ count were also tested in all subjects.

Results: A total of 106 HIV positive patients with mean age 36.6±9.6 years were enrolled in the study. The mean CD4+ count was 349.08±181.07 (2-940) cells/mm3. The mean log10 HIV viral load was 1.97±2.03. The most common possible routes of HIV transmission were intravenous drug use (52.8%) in our cases. Of 106 patients, 22 subjects (20.75%, 95% CI, 13%-28%) had isolated anti-HBc. HBV-DNA was detectable in 3 out of the 22 patients (13.6%, 95% CI, 0.0%-28%) who had isolated anti-HBc. All of them were intravenous drug user and co-infected with HCV. In two patients plasma HBV-DNA load was less than 280 copies/ ml and in one of them was 812 copies/ ml. The patient with higher HBV-DNA load had lower CD4+ count and higher HIV viral load than two other subjects. He was receiving antiretroviral therapy with zidovudin, lamivudine, and nelfinavir.

Conclusion: Occult HBV infection was relatively common in Iranian HIV-positive patients. A serological profile of isolated anti-HBc could associate with occult HBV infection in HIV-infected patients. Therefore it seems that screening of these patients is helpful in prevention of HBV transmission.
Background: The HIV/AIDS epidemics spreading through the countries of Sub-Saharan Africa are highly varied. Inhabited by just over 12% of the world's population, Africa is estimated to have more than 60% of the AIDS-infected population. Much of the deadliness of the epidemic in Sub-Saharan Africa has to do with a deadly synergy between HIV and tuberculosis.

Methods: I used questionnaires that I distributed to scholars of the same discipline, interviews with patients and reading research reports/work of different people.

Results: The implementation of the goals that is combating HIV/AIDS, Malaria and other diseases bases solely on the fact that the extent of premature death and ill health in the developing world is alarming. However areas needing the most reduction such as the Sub Sahara Africa regions have yet to make some drastic changes in improving their quality of life with the time as China to accelerate towards the MDGs particularly in combating HIV/AIDS, Malaria and other infectious diseases like tuberculosis, tetanus, cholera, whooping cough, polio.

In order to attain the above targets by 2015 as we can agree upon different mechanisms have put in place to combat HIV/AIDS, pandemic and other infectious diseases. Like tuberculosis, polio, measles, tetanus.

Conclusion: HIV/AIDS can have devastating effects on household food security and nutrition. All factors that determine the nutrition status i.e. household food security, health and care are all affected by HIV/AIDS. The specific impact of HIV/AIDS is related to the livelihood systems of affected households and will vary according to their productive activities and the economic and socio-cultural context in which they live.

The infectious diseases e.g HIV/AIDS affects all three components of food insecurity - availability, access and utilization. Nutritional care and support interventions mitigate the diseases impact on food utilization by strengthening the biological use of food to manage the symptoms and strengthen immune function.

HIV/AIDS attack people both women and men during their most productive years weakening and killing the strongest producer of food and income.
Evaluation of a laboratory based HIV surveillance system in Dar es Salaam, 2008

E. Nyale
School of Public Health Muhimbili University of Health and Allied Sciences, DAR ES SALAAM, CA, Tanzania, United Republic of

Background: Correct estimation of the number of people infected with HIV is an important process for advocacy, programme planning and evaluation. In Tanzania estimates of HIV are generally based on laboratory confirmation of samples of blood from antenatal clinics. This system involves anonymous, unlinked sampling of blood from pregnant women attending selected antenatal clinics in the public health sector. The evaluation was conducted to analyze the attributes of the surveillance system.

Methods: CD’C guideline for evaluating surveillance system was used. Data collected through discussion with different stakeholders, review of data from Muhimbili referral laboratory, from National AIDS Control Programme and from Sentinel sites. Data was analysed using Epi Info version 3.5.1.

Results: The system was useful on estimating the prevalence and trend of HIV. A total of 2521 blood samples were tested for HIV in 2005/06, of which 20 (8%) were positive. There was a delay (45%) in sending samples to the laboratory, however 2269 (90%) were received in good condition. The system is not simple as it involves multiple confirmatory tests. There was a delay in sending feedback. Standard operating procedures (SOP) were not followed. The system was sensitive (85%), however not representative as was only covering some selected sites.

Conclusion: the HIV surveillance system meets its objective and purpose; however the system is not simple and not timely. We recommend improvement of specimen transporting infrastructure, timely sending of feedback, training on the use of SOPs and increase coverage of the system together with regular supportive supervision.
Background: Some researches have shown that lack of information in high-risk communities, especially among young people about ways of transmission and protection of HIV / AIDS increase risk of disease. Different strategies regarding the risk of AIDS awareness have been used up to now. The present study is done to evaluate peer education workshops efficacy on knowledge of non medical student (of Khalij-e-fars university and Bushehr payam-e-nour university) about HIV/AIDS.

Methods: In this interventional study, rate of awareness of 144 students participated in peer education HIV / AIDS workshop in 2009 as a pre-test and post test questions in the form of a questionnaire 7 is assessed. Data are analyzed using SPSS version 13.0 and student T Test. P < 0.05 indicated a statistically significant difference between groups.

Results: 144 non-medical students from two Persian Gulf University (63) and Bushehr payame noor University (81) participate in this study. There is a significant difference between rate of correct responses of all students in pre test and post test questions, test 1 (P value <0.001), test 4 (P value = 0.001), test 5 (P value <0.001) and test 6 (P value = 0.004). The mean of pre test score was 4.73 with standard deviation 1.10 and the mean of post test score was 5.31 with standard deviation 0.94. This increase in terms of knowledge is statistically significant (P value <0.001)

Conclusion: In this study students awareness about HIV / AIDS after workshops taught by the peer education group had a significant increase and regards to effectiveness of this method, students' cooperation and financial benefits of such trainings using this method can have a large share in student education.
Neurological manifestations of HIV infection among medical inpatients in Minsk infectious hospital, Belarus

M. Ivanova
Belarusian State Medical University, Minsk, Belarus

**Background:** Neurological manifestations, including HIV-dementia, opportunistic infections and tumors are among the most threatening complications of HIV infection. Although their incidence has dramatically decreased among people who have access to combination antiretroviral treatments, this is not the case in some areas of the world, where access is limited. We report data on the frequency of neurological manifestations, associations with CD4 counts, and outcome of its various presentations in a 5-year prospective hospital-based study.

**Methods:** All HIV-infected patients attending the Infectious Disease clinic for various neurological manifestations between 2004 and September 2009 were included in the study. Their clinical details, treatment received, response to treatment, outcomes were accessed and analyzed.

**Results:** During this period, 56 patients had some neurological manifestations: CNS toxoplasmosis (17), cerebral lymphoma (7), progressive multifocal leukoencephalopathy (3), cryptococcal meningitis (2), fungal meningitis indeterminate (1) and viral encephalitis indeterminate (6), dementia (1), tuberculosis (19). Median patients’ age was 32 years. Mean CD4 count was 126/mm3. Only 5 patients were using HAART before clinical manifestations.

**Conclusion:** Opportunistic infections were the leading cause of neurological disorders in our study population. Apart from central nervous system (CNS) tuberculosis, other CNS diseases were good predictor of the advanced HIV infection (CD4<200/mm3).
Background: To assess prospectively all newly diagnosed cases of HIV infection performed at our reference centre, which serves around 800,000 inhabitants of the Bologna metropolitan area.

Methods: All patients with a newly diagnosed HIV infection were initially assessed according to several demographic, epidemiological, diagnostic, clinical, and laboratory features.

Results: From June 2006 up to December 2008 (31 months), 162 patients were first diagnosed with HIV disease (mean 5.2 novel cases per month), and 78 of them were judged to have a recent infection (as established on the ground of a specific “avidity” serologic testing). Males greatly prevailed over females (93 versus 69 cases), while homosexual exposure (53 cases) was prevalent over heterosexual one (38 patients), and only two novel cases were registered among i.v. drug users. The median age at diagnosis was 36.2 years, while the main laboratory parameters showed a mean CD4+ count of 502 cells/µL, and a mean HIV-RNA load of 8.21x10^4 copies/mL. Although subtype B of HIV greatly prevailed (141 cases: 87%), also subtypes A-A1, and recombinant HIV virions were found among newly infected patients. When conducting a genotypic resistance assay including all available antiretroviral agents, the overall prevalence of primary mutations accounted for 13% of newly infected patients: 11.1% of them had one or more mutations of the reverse transcriptase gene, and 9.3% of subjects had one or more mutations of the protease inhibitor gene (including one case of multiple mutations, probably conferring resistance extended to the third-generation protease inhibitor tipranavir). The majority of patients with recent infection (50 out of 78: 64.1%) were asymptomatic or paucisymptomatic, while a full-blown AIDS or a symptomatic disease were present in 18 and 10 cases respectively.

Conclusion: Notwithstanding the massive prevention campaigns of the last two decades, HIV infection continues to spread predominantly via sexual route, and may increasingly involve immigrants. A delayed-missed recognition of HIV infection poses patients at a very high risk to develop HIV-related disorders (since these subjects could not take advantage from antiretroviral therapy). Non-subtype B viruses, recombinant viruses, and HIV strains already encoding for resistance against different antiretroviral compounds are of significant concern. A permanent, active monitoring of this phenomenon and its correlates is strongly warranted.
The two most recent, fixed associations of antiretroviral nucleos(t)ide analogues. A prospective appraisal of their therapeutic perspectives in the treatment of HIV disease.

**R. Manfredi**
University of Bologna, Bologna, Italy

**Background:** The introduction of novel, fixed NRTI combinations (emtricitabine-tenofovir, E-T, and lamivudine-abacavir, L-A), expanded the available spectrum of antiretroviral formulations, and indirectly increased patient's adherence, since both these combinations are taken as a one pill-once daily regimen.

**Methods:** A prospective survey of the use of these two fixed NRTI combinations was performed in our cohort of over 1,700 HIV-infected patients (p).

**Results:** During 12 consecutive months, 334 p received for the first time E-T (262 cases), or L-A (72 p). Among the 88 p naïve to all antiretrovirals, E-T was given to 66 p (75.0%), mostly associated with efavirenz (51 p), or different PI combinations (15 p), whereas L-A was administered to 22 p only (in 18 of them in association with PI). In the remaining 246 p, E-T or L-A therapy replaced a prior regimen, predominantly associated with PI (141 cases p), versus efavirenz (48 p), or other combinations (57 p). Among the 246 pre-treated p, E-T (194 p), still prevailed over L-A (50 p), and the therapeutic change was due to failure and resistance (89 p), and in the majority of cases to toxicity or poor tolerability (146 p). Both fixed NRTI combinations were well tolerated, with only three cases of L-A suspension due to abacavir hypersensitivity, and two cases of E-T interruption due to kidney abnormalities.

**Conclusion:** From our preliminary experience, a major role seems played by E-T in first-line treatments (preferably among “compact” regimens based on efavirenz), while the apparently increased L-A prescription to pre-treated p is attributable to the different genetic barrier of abacavir (which is often introduced in association with PI). The present availability to two more fixed NRTI combinations advantaged by once-daily administration strongly encourages further “head to head” studies in both first-line and experienced p, to better exploit and target their therapeutic potential and their convenience features.
The “AIDS Presenters” after twelve years of availability of potent, combined antiretroviral therapy

R. Manfredi
University of Bologna, Bologna, Italy

**Background:** Notwithstanding the availability of potent, combined antiretroviral therapy (cART), AIDS notifications continue to occur, with increasing prevalence for patients (p) who missed or neglected their condition, or refused or took with insufficient compliance the recommended antiretroviral medications.

**Methods:** All cases of AIDS notified since the year 2001 were compared with those found in the decade preceding cART availability (1986-1995).

**Results:** Compared with the pre-cART era, a significant drop of frequency of overall AIDS cases occurred: from a mean 58.3±11.2 patients-year observed in the decade 1986-1995, to 13.7±6.0 patients-year during years 2001-2008 (p<.001), together with an increased mean age (p<.002), female gender (p<.01), sexual vs i.v. transmission (p<.001), and proportion of immigrant versus native p (p<.02). In the cART era, the most evident drop of frequency interested opportunistic diseases linked to a CD4+ lymphocyte count below 50-100 cells/µL, while a proportional rise of tuberculosis, pneumonia, lymphomas, and other neoplasms was observed. The frequency of both *Candida* esophagitis and *Pneumocystis carinii* pneumonia remained stable, as the first two most frequent AIDS-related conditions. After cART availability, the following diagnoses in crude frequency were represented by neurotoxoplasmosis, wasting syndrome, AIDS-dementia complex, and non-Hodgkin’s lymphomas. P with multiple AIDS-defining diseases, and also AIDS diagnoses made only at or after death, even showed a paradoxically increased frequency and absolute number during the cART era versus the prior decade (p<.001 and p<.03), while no difference was found as to the grade of HIV-associated immunodeficiency. Surprisingly, an underlying anti-HIV therapy was a more common event until 1995, versus p observed in the cART era (p<.001), since during recent years AIDS notification tends to be increasingly associated with the first diagnosis of HIV infection.

**Conclusion:** When facing p with some form of opportunism, clinicians should maintain an elevated suspect for an advanced (but missed-untreated) HIV disease. A continued level of attention will help a more rapid recognition and an appropriate management of p who could not take benefit from cART, since they remained unaware of their disease, or refused controls and treatment during the previous years.
The changing role of fusion inhibitors during salvage antiretroviral therapy. A seven-year experience with enfuvirtide

R. Manfredi

University of Bologna, Bologna, Italy

**Background:** The need of rescue antiretroviral regimens is progressively increasing, due to the unavoidable long-term emerging of multiresistant HIV strains.

**Methods:** An open-label study featuring the administration of the fusion inhibitor enfuvirtide (T-20) as a part of salvage anti-HIV regimens in a cohort of hardly pre-treated and multiresistant patients (p) with advanced HIV disease, followed until at least three consecutive years, is presented.

**Results:** The efficacy and safety parameters of enfuvirtide adjunct to an optimized background were assessed monthly in 21 severely compromised p, with a baseline viremia ranging from 64,000 to over 500,000 HIV-RNA copies/mL, and a CD4+ lymphocyte count ranging from 11 to 213 cells/µL. At the time of enfuvirtide introduction, the background antiretroviral therapy was modified according to both genotypic-virtual phenotypic resistance assays, but only 15 of 21 p could rely on at least one *in vitro* effective drug (during the first years of our experience, raltegravir, maraviroc, etravirine, rilpivirine, and also tipranavir and darunavir were not still available). Anyway, a rapid and significant drop of viremia (at least one Log10 HIV-RNA copies/mL), associated with a 30-280% increase of CD4+ cell count versus baseline values was observed in all p, although 13 our of 15 p who could rely on an optimized background had a sustained response (12-36 months). In 11 p, a surprising dissociation between a favorable virological response and a progressive loss of CD4+ cells was observed. Although frequent, local injection site adverse effects never represented the major cause of enfuvirtide interruption.

**Conclusion:** Expectations and concerns on the use of enfuvirtide as a novel anti-HIV compound in daily practice are still debated, since no specific recommendations have been produced (especially with regard with the novel, available compounds), when excluding the assumption that enfuvirtide appears significantly more effective when administered concurrently with at least 1-2 other active antiretrovirals, although the reported experiences often included p on very advanced salvage therapies. The management of the frequent site injection reactions represents an adjunctive concern for these multi-problematic HIV-infected p.
Reduced HIV fitness and replication induced by administration of lamivudine alone, in extensively antiretroviral-resistant HIV-infected multiexperienced patients, as a "bridging" strategy towards optimized salvage regimens

R. Manfredi
University of Bologna, Bologna, Italy

Background: HIV-infected patients harbouring a lamivudine-resistant virus, seem to take benefit from a continued lamivudine monotherapy, versus combined antiretroviral treatment (cART) interruption, since a reduced HIV replication is selected by the maintenance of lamivudine-related M184 mutation. The mid-term outcome of isolated lamivudine therapy in multi-drug-resistant patients with very restricted therapeutic options, waiting for novel drug classes, is reported.

Methods: Six patients aged 23-49 years (4 males and 2 females, one of them with perinatal infection), with HIV disease treated since 13.8±6.2 years with 10.3±4.7 therapeutic lines, experienced repeated virological-immunological failures due to an extensive HIV genotype resistance, which finally led to a complete 3-class resistance, and no residual therapeutic options, when excluding the use of a fusion/integrase/co-receptor inhibitors, without the possibility to optimize the therapeutic background. A concurrent toxicity was also present: combined lipodystrophy syndrome, dyslipidemia, and insulin resistance (3, 2, and one patients, respectively).

Results: At the time of lamivudine monotherapy initiation, the median viremia was 36,000 HIV-RNA copies/mL, while the median CD4+ count was 344 cells/µL. Despite a previous diagnosis of AIDS in 4/6 patients, at the time of therapeutic switch the clinical situation was stable. During the monthly follow-up with lamivudine monotherapy, ranging from 8 to 24 months (mean 9.9±5.2 months), no HIV-associated signs-symptoms occurred, previous cART-associated laboratory toxicity significantly ameliorated, and no significant differences were found as to virological-immunological markers of HIV disease. A fluctuating viremia was noticed in all cases, with a median value at the end of follow-up of 44,000 HIV-RNA copies/mL, while no significant loss of CD4+ count occurred (median final levels: 322 cells/µL). Two-four nucleos(t)ide mutations, and 2-5 protease mutations were deselected during the follow-up, but the M184 mutation remained. All these patients were allowed to reintroduce a cART with novel drug classes, according to the availability of an optimized therapeutic background in the subsequent months.

Conclusion: When extensive HIV resistance does not leave therapeutic options, lamivudine monotherapy performed with a strict monitoring in clinically stable patients with no compromised virological-immunological figures, is a potentially safe choice. Waiting for the novel cART associations, the exploitation of lamivudine resistance on HIV replication-fitness represents an ultimate therapeutic approach to these difficult-to-manage subjects.
Morbidity related to HIV disease, thirteen years after the introduction of highly active antiretroviral therapy (1996-2009)

R. Manfredi
University of Bologna, Bologna, Italy

Background: After the availability of combined antiretroviral therapy (cART), we quantified the consequences on the general morbidity rates, and HIV-related hospitalization rates, in the period 1992-2008.

Methods: HIV-associated hospitalizations were assessed according to three different periods of time: before cART introduction (1992-1995), immediately after first cART availability (1996-1998), and the last one, referred to the fully established cART era (1999-2008).

Results: During the three examined periods, an undetectable viremia was never detected in any patient in the pre-cART era, in 21% of cases in the first years of cART, and in 41% of patients in the last years of cART \((p<.0001)\). In parallel, the mean CD4+ T-lymphocyte count in the three study groups tested 27.2±11.3 cells/µL, 39.3±14.6 cells/µL, and 89.6±38.2 cells/µL, respectively \((p<.001)\). During time, an increased frequency of hospitalization of heterosexual and female patients occurred, while the frequent of IVDA had a significant drop (from 69% in the pre-cART period, to 57% during initial cART era, to 39% at the time of consolidated cART era; \(p<.0001\)). The patients with a prior diagnosis of full-blown AIDS represented 86%, 57%, and 33%, respectively \((p<.0001)\), while hospitalized inpatients who experienced a diagnosis of AIDS concurrently with the first detection of HIV infection (the so-called “AIDS presenters”), showed an evident temporal increase (11%, 21%, and 39%, respectively; \(p<.0001\)). Among concurrent illnesses, a huge rise of chronic liver diseases was registered from the pre-cART time (18%), to the first years of cART availability (29%), to the current time of advanced cART (48%) \((p<.001)\), while an increased mortality due to hematological and solid malignancies also occurred, although at a lesser extent (8.2%, 11.7%, and 17.8% respectively; \(p<.001\)).

Conclusion: The introduction of cART profoundly acted on the general morbidity for HIV infection and AIDS, although the epidemiological-clinical-laboratory scenario significantly changed over time. These modifications need a careful monitoring, in order to ensure a timely diagnostic and clinical disease recognition by all involved health caregivers who face HIV-infected patients, and to plan an adequate allocation of available resources, funding, structures, and dedicated personnel.
Assessment of situation of people that live with HIV/AIDS in Isfahan, Iran
M. meshkati¹, K. tayeri², E. etedali²
¹MEDICAL UNIVERSITY, ISFAHAN, Iran, Islamic Republic of, ²medical university, ISFAHAN, Iran, Islamic Republic of

Background: In Iran like as other country AIDS is a significant threat to people and specially for women. Isfahan is a large city in center of IRAN, it is a religious city. Until March 2008 we recognized 384 HIV/AIDS cases. But we estimate we have about 1500 cases. Prevalence of HIV/AIDS in Iran is concentrated in IDUs. Surveillance of HIV is very important in epidemiology survey.

Methods: In Isfahan, we performed a survey (cross – sectional) for all recorded HIV-positive cases between 1985 till 2008. The data was gathered using detailed questionnaires filled from archive or interviewed patients directly.

Results: In Isfahan until June 2009, 391 HIV/AIDS cases were recognized. The major of cases are male (93%), in between 25-34 years old (48%). 47% of them are singles and 37% of them are married. In male the most common transmitted way is IDUs (80%) and in women is sex (75%) that in 76% of them their husband was HIV positive and in 90% cases their husband were IDUs. We have 2 children under 15 years old that their parents are HIV positive. To be mention 2 years ago in same time prevalence of HIV/AIDS in women was lower than now.

Conclusion: On base of result we must notice bridge community and their role to spreading HIV infection in general population so we have faced risk of third episode of HIV/AIDS from IDU to sexual contact in Iran right now. We need to HIV prevention programs for vulnerable groups especially delivering counseling and harm reduction services. We must educate all of people specially young people and spouses of drug abusers (injectors and non injectors). We have to mention to women and as leader of HIV/AIDS campaign.
Cerebral toxoplasmosis in patients with HIV/AIDS in Romania

E. lazuranu¹, T. moisil², V. musta¹, A. crisan³, E. nicoara³, N. niculescu¹, R. laza³, G. cornea³
¹university of medicine and pharmacy, timisoara, Romania, ²clinical hospital for infectious diseases, timisoara, Romania, ³university of medicine and pharmacy, timisoara, Romania

Background: Infection with toxoplasma gondii is in numerous studies the second most frequent opportunistic infection, after pneumonia with pneumocistis carinii, at patients with HIV/AIDS. The growing number of this patients induces an increase of diagnosticated opportunistic infections, especially with the help of imagistic test(CT, MRI)

Methods: We have done a prospective study on 187 patients, followed-up in the II Clinic of Infectious Diseases Timisoara, Romania.

Results: The studied patients have between 16 and 62 years, most of them are in stages B and C of the disease (89%). We found 3 cases of cerebral toxoplasmosis at patients who had neurological disorders (including seizures) and the diagnosis was confirmed trough CT/RMI and positive serology for toxoplasma gondii. They were treated with cotrimoxazol and had favorable evolution.

The first patient has 30 years, diagnosticated with HIV in 2006, being admitted in the hospital for pulmonary tuberculosis. CD-4 count was 46cel/ml. At the same time he developed a meningoencefalitis with toxoplasma gondii. The other two patients, 38 and 43 years old, were diagnosticated with HIV in stages B3 and C3 of the disease. They begun then HAART and developed cerebral toxoplasmosis after 3 respective 4 years of treatment.

Conclusion: Cotrimoxazol remains efficient, also it was highly used in the last 10 years. All patients had favorable evolution, under treatment with cotrimoxazol associated with pathogenic and symptomatic treatment.

Using imagistic test (CT and MRI) is essential in diagnostic and in follow-up.

Seizure syndrome can be a debut symptom of cerebral toxoplasmosis at patients with HIV/AIDS.
A preliminary analysis of thrombophlebitis among HIV positive injecting drug users
M. Czarnecki1, W. Kwiatkowska2, J. Gasiorowski1, H. Gerber3, A. Gladysz1
1Wroclaw Medical University, Wroclaw, Poland, 2Province Hospital Wroclaw, Wroclaw, Poland, 3Wroclaw Medical University, Wroclaw, Poland

Background: Venous diseases often occur in injecting drug users (IDU). IDUs are also at risk for HIV infection. The aim of the pilot study was to evaluate the incidence of thrombophlebitis among HIV positive IDUs comparing with those uninfected and to answer a question if this health problem can influence quality of life.

Methods: Anonymous questionnaire.

Results: The questionnaires were filled by 70 IDUs (30 HIV positive and 40 HIV negative). Twenty four (80%) patients required antiretroviral therapy. No drug injections were performed in sterile conditions (special room), sometimes sterile needles were used. Thrombophlebitis occurred in 14 (46,7%) HIV positive and in 11(27,5%) HIV negative patients. HIV positive individuals were more often hospitalized because of thrombophlebitis comparing with uninfected IDUs. Five (83,3%) HIV positive versus 1 (16,7%) HIV negative men were admitted to the hospital. Thrombophlebitis influenced quality of life of both HIV positive and HIV negative patients: in 23 (32,95%) caused disability of living activity, in 16 (22,9%) impaired access to employment, in 6 (8,6%) impaired access to drug abuse therapy in rehabilitation centres and in 4 (16,7%) persons difficulties in access to antiretroviral treatment.

Conclusion: The above preliminary results highlight health and social problems concerning thrombophlebitis among IDUs, especially those HIV positive. Due to the observation, we consider that the program of harm reduction is insufficient in Poland. There is a need to extend needle exchange and organize clean rooms for injections as well as to extend drug substitution in order to take more care and prevent HIV infection and it’s consequences.
Background: HIV prevalence rate is very high in sub-Saharan Africa with highest in women of child-bearing age. Despite the high risk of mother to child transmission in absence of PMTCT intervention, some HIV positive mothers are neglecting or showing indifferent attitude towards their status even though they are aware of mother to child transmission (MTCT). Many factors contributes to poor adherence to clinic visit and drug intake. These include stigma, discrimination, fear of consequences of disclosure, and poverty. Home visit was initiated as a strategy to enhance effective and qualitative management to provide services at the clients’ door step. This involves various aspect of ongoing counseling in HIV management which has been successfully.

AIM: To determine the factors that are preventing the women from coming to the clinic and finding solutions to them.

Methods: At Clients first clinic visit detailed information and specific home addresses were taken from the clients and permission to visit them at home when necessary, their phone numbers were also collected. Defaulters were traced using the ANC recruitment and clinic visit registers, and were followed at home having got their permission and address. Home visit questionnaires were designed and administered during the home visit from 2005 to 2008.

Results: Nine hundred and seventy-nine homes were visited during the period. Outcome: Eight hundred and seventy-three, (85.1%) were back at the clinic to continue with their HIV care, treatment and support. Eighty-two declined coming back for several reasons, 16 relocated, 25 gave wrong address while 23 died. Reasons for default were stigma (48.3%), fear of the consequences of Disclosure (23.8%), denial of HIV status (15.5%), and lack of transport money (12.4%).

Conclusion: Tracking and home visit is an effective way of ensuring good adherence to clinic visit in PMTCT programs. This will improve the quality of care HIV positive women receive and invariably reduce MTCT of HIV.
Clinical features and outcome of tuberculosis (TB) in HIV infected adults
A. Olczak, E. Grabczewska
Collegium Medicum The N. Copernicus University Poland, Bydgoszcz, Poland

Background: The aim of the study was evaluate clinical presentions HIV/TB coinfection.
Methods: We obtained retrospective review of medical records for cases of tuberculosis in patients with HIV infection treated at the Department of Infectious Diseases in Bydgoszcz (Poland) from January 2001 to September 2009
Results: During the study period 49 cases (91.8% males, mean age 38.1; IVDU - 70%) of tuberculosis in HIV infected adults were recognized. The mean CD4 cell count was 110.5 cells/mL (range: 0-650/mL), mean HIV RNA was 4.6x10^5 (range >50-3.52x10^6) copies/mL. In 7 (14.3%) cases the diagnosis of TB and HIV were done at the same time. Clinical presentation included: 26 had pulmonary TB, 11- disseminated TB, 12 - had extrapulmonary TB (3-meningitis, 9 - lymph nodes). In 4 cases tuberulosis was recogonized as immune reconstruction inflammatory syndrome (IRIS) with the onset of fever within 2 - 4 weeks after antiretroviral treatment (ART) initiation. The PPD skin test was negative for 2 of 5 patients with CD4 cell count > 200 cells/mL and for 7 of 31 patients with CD4 cell count <100 cells/mL. Fever, night sweats, lost of weight and malaise were noted in all cases. The most common radiological findings in the chest X-Ray were middle or lower lobe infiltrates, miliary infiltrates, hilar adenopathy. Normal X-Ray was found in 21% patients with pulmonary TB. In all cases TB was confirmed microbiologically, but only in 2 cases acid fast bacilli were seen in sputum. 4.1% of patients were on ART for more than one year before TB, 86% commensed ART during TB treatment, which was associated with paradoxical worsening (TB-IRIS) in 2 (4.1%) cases. 12 patients with CD4 cell count <50 cells/mL at the time of TB diagnosis developed subsequent AIDS-defining diseases. We found a mortality rate of 16.3% (8 cases).
Conclusion: In our region tuberculosis poses an increasing problem in population of HIV - infected patients.
Is task shifting a needed health innovation?

E. KOOMSON
GHANA HEALTH SERVICE, CAPE COAST, CENTRAL, Ghana

**Background:** Ever since 1986 when the first two cases of AIDS were reported, shortages of health staff –mostly caused by ‘rapture’ – (a phenomenon of trained health staff seeking greener pastures outside Ghana) –have also been a bottleneck in the provision of HIV/AIDS services. To arrest this situation, in 2007, the Central Regional Health Directorate-(one of the 10 regional health directorates in Ghana), decided to institute task shifting of midwives as counsellors to perform HIV antibody testing to reduce the high burden of laboratory technicians and other clinicians involved in HIV/AIDS control.

**Methods:** Midwives were trained as counsellors and also taught to perform HIV antibody testing for all clients who accessed HIV/AIDS services. By the end of 2007, sixty-nine (69) midwives had been trained to serve in the 13 health districts. They were also tasked to treat opportunistic infections, and strengthened the TB/HIV collaboration which hitherto was very weak. The 69 trained midwife counselors worked continuously at their respective health facilities and were supervised periodically by facility managers.

**Results:**
The outcome of the program created a huge assess for HIV and AIDS clients who needed care, support and treatment. The laboratory technicians, clinicians and other related staff had extra time to concentrate on equally important health issues within their facilities. The demand for the services provided by the midwives led to higher utilization of health care services, PMTCT services coverage increased by 85%, TB /HIV became much stronger, -putting 100% of the clients on treatment,- and the health staff became advocates for similar health initiatives.

**Conclusion:** Task shifting is more than a needed health innovation; it has the capacity to cause excessive entropy of program efficiency, if harnessed properly.
Calcitonin and alendronate in HIV-infected with bone mass loss

A. Bazarra-Fernandez
A Coruña University Hospital Trust, Culleredo, La Coruña, Spain

**Background:** Osteoporosis is a worldwide condition which can affect HIV-infected persons. Objective: Determining if the combined use of calcitonin and alendronate influences on bone mass loss.

**Methods:** We studied for 6 months 21 women who were 44 to 64 years old at base line, were within 2 and 11 years of menopause, and had a bone mineral density at the lumbar spine between 145 mg/cc and 50 mg/cc measured by the QBMAP system with a spiral CT Picker PQ-S densitometer at L2, L3, L4 and L5. Of all the women, 10 were assigned to 10 mg of alendronate, 800 IU of vitamin D3 and 1 g of calcium carbonate supplementation. 11 were treated with 10 mg of alendronate, 200 UI of intranasal calcitonin, 800 IU of vitamin D3 and 1 g of calcium carbonate supplementation. The SPSS programme was used for statistical analysis.

**Results:** The characteristics of the women recruited for both groups were similar. Mean mineral bone density at the lumbar spine was between 1 and 3 DS below the mean value for 30 years old normal premenopausal women. After a treatment of 12 months no statistically significant difference was found among both groups as for the bone mineral density at the lumbar spine.

**Conclusion:** It is necessary to carry out a wider and longer study, among VIH-patient, but it seems that alendronate contribute advantages to decrease bone mass loss, at least, at lumbar spine, without calcitonin. Osteoporosis is a multifactorial disease, maybe its best treatment and prevention is combining several drugs and attitudes. It would be good to test several adjusted doses to decrease side effects. These results can be interesting for HIV-infected, who have a lot of medication.
Background: Over the past few years, a number of anecdotal reports have appeared regarding the possible connection between HIV-induced immunodeficiency and cervical neoplasia. To date, increased rates of cervical intraepithelial neoplasia (CIN) have been reported in women with this infection compared to those in the general population, with current estimates suggesting that a woman with HIV is more likely to develop CIN than those not infected.

Objective: Determining prevalence of CIN in cervicovaginal smears among HIV-seropositive and HIV-seronegative women in our area.

Methods: We have investigated cervicovaginal smears in a cohort of 84 women under age 44. Of these, 35.7% (n=30) were HIV-seropositives and 64.3% HIV-seronegatives. The route of contamination was IV drug injection in 53% of the women, sexual in 25%, both sexual in association with IV drug addiction in 20%, and others 2%. Human papillomavirus was investigated. Colposcopic evaluations, and when necessary, colposcopically directed cervical biopsies were performed.

Results: 1.8% of HIV-seronegative women had CIN. The prevalence of CIN was 31.2% in HIV-seropositives. Human papillomavirus was present in 43.5%. Biopsies performed under colposcopy in patients with CIN showed no case of invasive cervical carcinoma. In the entire cohort of CIN, 58% was low grade CIN and 42% high grade CIN. No hormonal change was found.

Conclusion: Despite the apparent high prevalence of cervical neoplasia in HIV-infected women, only a few cases of invasive cervical cancer have been reported. It is clear that HIV infections is a powerful predictor of cervical abnormality and that these patients need regular screening. There is no any relation to hormonal status of women.
The use of potential social structures and entities for HIV prevention education: The role of Queen mothers in Ghana

E. KOOMSON, M. AIDOO
GHANA HEALTH SERVICE, CAPE COAST, CENTRAL, Ghana

Background: Stigma, misguided beliefs in causes and effects of chronic diseases in cultural settings and other health seeking behaviours made the incorporation of HIV and AIDS control program into the health care delivery system in Ghana very difficult. We decided to use queen-mothers to be forces of sexual behavioural change for health action. One of the available resources of human capital structures in the health systems and communities is the queen-mother entity.

Methods: The Central Regional Health Directorate decided to use 22 queen-mothers to implement HIV and AIDS prevention education and sexual behavioural change for a two year period. They mobilized the sexually active, and in and out of school youth in their communities to learn the importance of HIV and AIDS prevention to health and wealth creation. I, Ebenezer Koomson, led the design and the implementation of this program as the regional HIV/AIDS Coordinator in this region.

Results: Three hundred and two (302) community meetings were organized during the period under review. Ten (10) community durbars and cultural displays on responsive reproductive health practices to combat HIV infections, associated myths, stigma and misconceptions were organized. One hundred and fifty nine (159) parents joined the clubs to give social support and motivation to strengthen the youth to accept the concept of involving the youth in decision making for their healthy sexual lifestyles. Forty-seven (47) patients and their partners of were treated for sexually transmitted diseases.

Conclusion: Utilization of potential social structures for health communication and promotion is necessary to support the efforts of health organizations. The benefits could be visible during evaluation and subsequent re-adjustment done or otherwise, especially in limited resourced settings in sub-Saharan Africa.
Seroprevalence and predictors of human herpes virus 8 (HHV8) infection in HIV positive and negative adults in Zaria, Nigeria

D. Ogoina1, G. Onyemelukwe2
1Ahmadu Bello University teaching, Zaria, Kaduna, Nigeria, 2Ahmadu Bello University Teaching Hospital, Zaria, Nigeria

Background: HHV8 infection is aetiologically linked to Kaposi's sarcoma (KS) and has been implicated in promoting progression of HIV to AIDS. Although, both HHV8 and HIV infections are endemic in Africa, studies of HHV8-HIV co-infections from Nigeria are lacking. This study evaluated the seroprevalence and predictors of HHV8 infection in HIV positive and negative adults from Zaria, Northwestern Nigeria.

Methods: A cross sectional study undertaken in Ahmadu Bello University Teaching Hospital Zaria, Nigeria in 2007 consecutively enrolled 85 healthy HIV-negative adults with low risk of past sexually transmitted diseases (STD), 71 HIV-positive patients without KS and 20 AIDS-related KS (AIDS-KS) patients. Demographic and clinical data were documented. Patients were staged into early HIV (WHO stage 1 or 2) and late HIV (WHO stage 3 or 4) diseases. Anti-lytic HHV8 antibodies were determined by ELISA. Predictors of HHV8 were expressed in odds ratio with 95% confidence interval.

Results: Of the 85 healthy adults, 19(22.4%) reported no previous sexual contacts while other healthy adults and all HIV-positive adults had one or more past heterosexual contact. The HHV8 seroprevalence was 85%, 61.9% and 25.9% in AIDS-KS patients, HIV patients without KS and healthy controls respectively. Among HIV-positive patients without KS, an unconditional logistic regression adjusted for age, gender, marital status, past blood transfusion, antiretroviral status and CD4 cell counts revealed past history of STD (OR=4.67 CI=1.33-16.4, p=0.016) and late HIV disease (OR=4.37,CI=1.24-15.5, p=0.022) as independent predictors of HHV8 infection. In healthy controls, none of the evaluated variables was significantly associated with HHV8 infection. However, 7 of 19 healthy participants who had no previous sexual contact or past blood transfusion were also HHV8 seropositive.

Conclusion: HHV8 infection is endemic in Zaria, northern Nigeria but more prevalent in HIV infected patients. Its high prevalence in AIDS-KS and its association with late HIV disease is supportive of an adverse association between HIV and HHV8. Its association with STD is consistent with a predominant sexual route of transmission in sexually active adult Nigerians. However, non-sexual routes of transmission may also be operative especially in young sexually naïve adults.
Hematologic abnormalities among HIV infected children on HAART, in Jimma University Specialized Hospital, Southwestern Ethiopia

M. Yimer
National University of Ireland, Galway, Galway, galway, Ireland

Background: In individuals infected with human immunodeficiency virus, hematological abnormalities are associated with increased risk of disease progression and death. However, the magnitude and severity of hematological abnormalities in those patients who are taking antiretroviral drugs is not known in Ethiopia. Hence this study was conducted to determine the magnitude and severity of anemia, neutropenia and thrombocytopenia in HIV infected children who are taking highly active antiretroviral therapy in Jimma University Specialized Hospital.

Methods: A cross-sectional study was conducted from August to November, 2007 on 64 HIV infected children who have been taking highly active antiretroviral therapy for more than two months in the study hospital. Data were collected using structured questionnaire that included variables related to socio-demographic characteristics, immunohematological profiles and clinical conditions of the study individuals. Data was analyzed using SPSS for Windows version 12.0.1.

Results: The prevalence of anemia, thrombocytopenia and neutropenia among the study children was 21.9%, 7.8% and 4.7%, respectively. Severe life threatening anemia was seen in 2(14.3%). The mean level of hemoglobin, thrombocyte count and CD4 count showed statistically significant increment from the baseline (p-value <0.05).

Conclusion: Hematologic abnormalities were common problems among the children taking highly active antiretroviral therapy. Therefore, clinicians need to routinely investigate and treat hematological abnormalities before and after treatment and additionally large scale and longitudinal studies are recommended to strengthen and explore the problem in depth.
Detection of *Cryptosporidium* sp. in positives HIV patients attended in a city of the Colombian Caribbean

**M. L. Raciny Aleman**¹, A. M. Castro Cordero¹, L. R. Ramos Hernandez¹, A. B. Muñoz Delgado²

¹Universidad de Cordoba, Monteria, Colombia, ²Universidad del Sinu, Monteria, Colombia

**Background:** *Cryptosporidium* sp. is the causative agent of criptosporidiosis, which presents a wide symptoms range, these symptoms acquire greater relevancy in patients with cellular immunosuppression of diverse origin. The patients infected with Human Immunodeficiency Virus are part of this group. Because of this, *Cryptosporidium* sp. and its related risk factors in positive HIV patient attended in a city of the Colombian Caribbean were detected.

**Methods:** A descriptive and prospective study between August 2007 to September 2008, in positive HIV patients attended in a city of the Colombian Caribbean was carried out. The samples were taken by convenience and fecal samples were collected, they were analyzed by the modified Ziehl Neelsen stain and micrometric measurement. Demographic and epidemiological data were obtained and was made review of clinic histories. The analysis of the information was made by means of the descriptive statistics.

**Results:** Were studied 151 HIV seropositive patients and equal number of fecal samples. 103 (68.2%) were men with an average age of 35 years, from the rural zones in majority. The fecal samples were diarrheic in a 4.6%. The Ziehl Neelsen coloration and the micrometric measurement permitted to detect the presence of oocysts of *Cryptosporidium* sp. in a 2%, of which 66% were women originating from rural zone. These patients had little access to drinking water, an improper mechanism for the disposal of their excretes and lacking personal hygiene.

The infected patients were located in the clinic categories B3 and C3. The patients in B3 category had a greater frequency of oocysts with regard to the C3 category. These patients had specific characteristics of AIDS phase as diarrhea and abdominal pain and a lymphocyte TCD4 count < 200 cel/mm3.

**Conclusion:** It is suggested that the lacking sanitary hygienic conditions of this immunosuppressed population be in favour of the acquisition of the infective form of *Cryptosporidium* sp., which is behaved as marker of AIDS in positive VIH patient with a strong immunosuppression.
Final Abstract Number: ISE.175  
Session: International Scientific Exchange

Screening of hepatitis B & C and HIV in male population of Karachi, Pakistan  
G. Fatima1, S. Sherwani2, S. Kazmi3  
1Civil Hospital Karachi, Pakistan, Karachi, Pakistan, 2Federal Urdu University, Karachi, Pakistan, 3Immunology and Infectious Disease Research Laboratory- Department of Microbiology, Karachi, Pakistan

Background: Hepatitis B & C are common infections nonetheless HIV infection is the new emergence in our society due to high proportion of risk related behaviors particularly using of recycled/used syringes, injecting illegal drugs, by common use of hypodermic needle sharing and unprotected sexual relations. No precise data is available so far in Pakistan that reflects absolutely the magnitude and extent of these serious problems.

Methods: In this study, a total of 914 blood samples were collected by staff of CHK Central laboratory, Civil Hospital from a particular group of people working in single premises in a cosmopolitan city Karachi Pakistan. Blood samples were collected aseptically in 5 ml red top vacutainers and left to clot. Sera specimens were separated after centrifugation, aliquoted into 2 ml eppendorf tubes and stored at -20°C until the time for assay. The samples were screened for Hepatitis B & C. The quantitative detection of Hepatitis B surface antigen (HBsAg) and anti HCV were carried out by Chemiluminescence Micro particle Immunoassay –CMIA (Abbott Architect i1000 SR). Detection of antibodies to HIV-1 and HIV-2 were done by HIV-chromatography kit (KAPLAS, USA).

Results: For Hepatitis B, 42 (9.2%) of male were found positive while 82 (17.94%) were found having Hepatitis C. None of the case of HIV was found positive. Moreover, the ratio of both Hep B and Hep C were found more in an age group between 30-40

Conclusion: Our study indicates the investigation of increment at such an alarming rate of this seropositive rate of Hepatitis B & C in male population of Karachi is really worrisome and a matter of serious health concern. One of the plausible reasons of HBV and HCV in Pakistan can be unsafe blood, injection, sex and other such habits is more common in male gender than their counterparts. However, this could be prevented through preventive strategies like immunization, awareness health education and counseling.
Peripheral lymph nodes biopsy as a useful tool to diagnose opportunistic diseases in HIV-infected patients: Preliminary Results

C. RAMOS, L. GOLDANI
UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL, PORTO ALEGRE, Brazil

Background: Peripheral lymphadenopathy is a common clinical manifestation in patients with HIV infection. This finding could be present in any stage of HIV infection. There is a variety of differential diagnosis, which includes follicular hyperplasia, micobacteriosis, fungal infections, lymphoma and Kaposis' sarcoma. However, there are few data about the use of lymph node biopsy as a diagnostic tool in this population.

Methods: This is a retrospective study of the peripheral lymph node biopsy of patients with HIV infection in a tertiary care hospital in Brazil. The data was obtained by reviewing the records of lymph nodes biopsies performed between January to May of 2004.

Results: A total of 21 peripheral lymph node biopsies were performed in patients with HIV infection. The age median of patients was 30 years old (18-40); 13 (61.9%) were males, CD4 lymphocyte mean count was 136.6 (SD 111.3) cell/mm3. The main sites of biopsy were cervical region 13 (61.9%), following, by supraclavicular region 4 (19%); inguinal 2 (9.5%) and axillary 1 (4.8%). Mycobacteriosis was diagnosed in 15 (71.2%) patients.; 5 (33.3%) were Mycobacterium tuberculosis and 10 (66.7%) were Mycobacterium sp.; fungal infection in 3 patients (14.29%), including histoplasmosis and criptococosis, follicular hyperplasia in 2 patients (9.5%) and Kaposis' sarcoma in 1 patient (4.76%). The biopsy was the main diagnostic tool in 16 (76.2%) patients.

Conclusion: Peripheral lymph node biopsy is an important diagnostic tool in patients with HIV infection. Opportunistic diseases such as tuberculosis, atypical mycobacteriosis, fungal diseases and HIV related neoplasia can be often diagnosed in this setting.
Factors affecting condom use among HIV patients taking highly active antiretroviral therapy (HAART) in resource limited settings

P. Athieno
Mulago -Mbarara Teaching Hospitals Joint AIDS Programme, kampala, kampala, Uganda

**Background:** The burden of HIV/AIDS is enormous and continues to increase in the developing countries. Increased access to HAART has markedly improved quality of life, HIV infected persons now live longer, healthier and more sexually active lives. Unprotected sex by people living with HIV increases risk of transmitting to serodiscordant partners and re-infecting themselves with new drug resistant strains of the virus.

At MJAP (Mulago-Mbarara Teaching Hospitals Joint AIDS Program) a PEPFAR funded ART Program, patients receiving HAART are counselled on adherence and preventive measures especially condom use and are encouraged to disclose their serostatus to their partners.

In spite of the above intervention, a number of patients still do not use condoms hence the need to assess the factors affecting condom use among these patients.

**Methods:** A retrospective analysis of clinic data of 4746 adult (18 years+) patients initiating HAART between August 2005 and August 2008 was done.

Sexual activity, HIV serostatus disclosure, condom use adherence to HAART, educational level, marital status were assessed.

**Results:** During the study period 4746 patients were enrolled on HAART, 12% were aged <24 years and 88% 25 years and above.

60% females

47% had attained primary level education, 39% secondary level, 8% tertiary and 6% had no education.

69% were married, 17% divorced, 8% widowed, and 6% never married.

Males were 61% more likely to use condoms compared to females (p=0.001).

Older patients were 61% more likely to use condoms compared to younger ones (p=0.0001)

Widowed, divorced and never married patients were more likely to use condoms compared to married ones (p=0.0001)

Those with some level of education were more likely to use condoms compared to those with no education (p=0.0001)

Patients who had disclosed serostatus to their sexual partners were 3.2 times more likely to use condoms compared to those who had not disclosed.

**Conclusion:** Female gender, younger age, being married, low education level, and non-disclosure of serostatus were independently associated with less likelihood of using condoms. Emphasis on individuals with the above characteristics may hold better condom use and hence better prevention of further HIV spread.
HCV- infection, genotypes and related fibrosis in HIV positive patients in Georgia

M. Karchava, L. Sharvande, L. Gatserelia, N. Dvali, L. Dzigua, T. Tsertsvadze
Infectious Diseases, AIDS and Clinical Immunology Research Center, Tbilisi, Georgia

Background: The progression of hepatitis C virus (HCV)-related liver disease is accelerated in patients infected with HIV. The aim of this study was to evaluate risk factors for the development of fibrosis in co-infected patients at baseline visit.

Methods: In a prospective analysis of 249 HCV co-infected patients, associations between liver fibrosis score, and liver enzyme levels, HCV viral loads, HIV viral loads, HCV genotypes, CD4 counts were assessed. All analyses were done on patients at baseline visit before ART initiation.

Measurement of HIV and HCV RNA viral load was done by COBAS TaqMan 48 analyser. HCV genotyping was done by reverse hybridization line probe assay using VERSANT HCV Genotype kit 2.0 respectively. Transient elastography was performed by Fibroscan (Echosens, Paris, France). The median value of 10 successful acquisitions, expressed in kilopascal (kpa) with a success rate of at least 60% is used for liver stiffness measurement for BMI <28 and 35% for the liver stiffness measurement in case of BMI >28.

LS<5.5 kpa was considered as fibrosis stage F0-F1 by Metavir, 5.5 -8.0 kpa – fibrosis stage F2, 8.0-10.0 kpa – fibrosis stage F2-F3, 10.0-12.5 kpa – fibrosis stage F3, 12.5-14 kpa – fibrosis stage F3-F4 and LS>14.0 kpa – fibrosis stage F4 by Metavir.

Results: Statistical analysis demonstrated a significant correlation between both ALT and AST levels and HIV viral loads with at least mild fibrosis. Higher number of HIV viral load, length of HIV infection was associated with the high number of LS. Study revealed no correlations between CD4 cell counts, HCV viral loads or different HCV genotypes with fibrosis.

Conclusion: Our study revealed correlation of HIV viral loads ALT and AST levels with liver fibrosis. These findings suggest a direct role for HIV in development of liver fibrosis as well as high liver enzyme levels in HCV co-infected individual. This findings support the need to maintain low HIV viral loads and along the need for initiation of HCV treatment in order to minimize HCV disease progression among HIV infected patients.
The wishes of the stigmatized few: The voices of people living with HIV in some rural and urban settings in Ghana

E. Koomson1, J. Awam2
1Ghana Health Service, Cape Coast, Central, Ghana, 2Ghana Health Service, Cape Coast, Ghana

Background: The formation of people living with HIV (PLHIV) associations in communities in the Central region of Ghana had been linked with the health facilities where they seek treatment. We decided to tailor the service provision to the acceptable wishes of the HIV clients in the light of quality health care in 2008. This paper highlights the findings of this quantitative study.

Methods: A survey was organized to assess the wishes of the patients to assess their wishes they think must be given to make them have healthy life chances. Only those who were prepared to participate were allowed. By the end of the survey, 300 clients from 12 antiretroviral treatment centres in 15 health districts had been contacted for their wishes.

Results: It was made up of 150 women and 150 men with an age range of 18-56 years, and standard deviation of 3.4. The responses given were as follows: 24 of the respondents (8%) who were unmarried indicated that they wished to marry any moment from now; however, it was very difficult for them because of discrimination and stigma. 255 of them (85%) indicated that they should be given free transportation to the treatment centres. All of them (100%) said they should be given free treatment and not to be discriminated or stigmatized for their conditions. Five (15%) said they would commit suicide one day if no cure is found for the disease. 285 of them (95%) mentioned the need of privacy and confidentiality as wishes they long for. 225 of them(75%) stated that their children should be given free education of their choice to the university level.

Conclusion: The consumers of every health commodity in any environment have valuable wishes which could shape the better health outcomes.
Creating demand for a valuable health action and its outcomes
E. KOOMSON\textsuperscript{1}, J. Awam\textsuperscript{2}
\textsuperscript{1}GHANA HEALTH SERVICE, CAPE COAST, CENTRAL, Ghana, \textsuperscript{2}GHANA HEALTH SERVICE, CAPE COAST, Ghana

\textbf{Background:} The need for creating demand for health actions use to dance on the drawing boards for a long time, or could not survive the turbulent trends of competing forces in the health market. A similar trend started to emerge in a health region with a population of two million. A decision was taken to create demand for a valuable action by establishing five additional anti-retroviral centres in other health district hospitals. This research team decided to monitor the outcome for this initiative for the one year.

\textbf{Methods:} Six district hospital based teams were trained to offer antiretroviral treatment services for people living with HIV in their districts. The teams were made up of clinicians, prescribers, laboratory technicians, counsellors, and data managers. The duration for the training was two weeks. Community mobilization and organization structures were instituted to sensitize clients and their relatives, and the general population to let them participate fully towards the success of the program. Monthly data collection of services provided was aggregated to assess the effectiveness of the program. Feedback reports were sent to their respective facilities as motivation to sustain the program.

\textbf{Results:} In the previous year (2007), five centres were providing service. By the end of 2008, 899 clients who were put clinical care. Anti-retroviral treatment was given to 347 clients. There was the need to change regimen for 17 clients due to drug toxicity. Co-trimoxazole was given to 899 clients. Though 184 ART clients were screened, 43 were found to be positive and were placed on treatment. Only one person was put on second line drug. Five clients died during the course of treatment.

\textbf{Conclusion:} Demand creation is a critical initiative to create a better access for consumer participation in health care delivery. The outcomes are well appreciated when the provider is motivated to contribute his quota in the spirit of quality health care delivery.
Cryptococcal meningoencephalitis in adult HIV / AIDS

M. Hurtado¹, N. E. Frassone²
¹Hospital Rawson, Cordoba, Argentina, ²Hospital Rawson, Cordoba, Argentina

Background: Meningoencephalitis is the most common clinical manifestation of cryptococcosis in HIV/AIDS, it is for the 4th opportunistic infection in order of frequency and the 2nd leading cause of neuroinfection.

Methods: Retrospective descriptive study conducted with HIV patients attended at the Hospital Rawson, during a period from 01/12/2000 to 01/04/2009.

Inclusion criteria:
- HIV diagnosis confirmed
- Age ≥ 15 years
- CSF culture isolation of Cryptococcus spp.

Results: We included 57 patients.
- 84% male (48/57).
- Average age is 34.16 years.
- In 68.4% (39/57) was presented as the first disease marker.
- 36.8% (21/57) presented another marker associated disease at diagnosis, begin the most common CMV retinitis and Pneumocystis jiroveci. Predominant symptoms: headache (78.9%), fever (63.1%) and vomiting (63.1%).
- Predominant neurologic exam findings: meningeal signs (59.6%), altered consciousness (40.3%) and cranial nerve disease (21%), mainly seventh nerve condition.
- 75.4% (43/57) of patients had CD4 count <100 cells / ul.
- CSF physicochemical: protein levels: 70.2% (40/57); hypoglycorrhachia: 75.4% (43/57); pleocytosis: 56.6% (34/57); normal physicochemical profile: 8.8% (5/57).
- India ink stain positive: 70.2% (40/57).
- Antigenorraquia was positive in 87.5% of cases presenting Indian ink staining with negative results (7/8).
- Positive blood cultures: 47.4% (27/57).
- CT brain: cerebral edema: 31.7% (13/41).
- Fundus signs of intracranial hipertensión (IH): 25.6% (10/39).
- The amphotericin B treatment was performed in 93% of cases (53/57). Mortality: 35% (20/57); during first episode 29.5% (13/44) and during episodes of recurrence 58.3% (7/12).
- The main risk factors associated with mortality during the first episode were: impaired consciousness (OR: 4.82; CI-95: 1.08 to 22.94; p= 0.01), CT brain with cerebral edema (OR: 5.14; CI-95: 0.91 to 31.45; p= 0.02), fundus signs of IH (OR: 5.25, CI-95: 0.80 to 38.20, p= 0.03).

Conclusion: Increased prevalence in young male.
- High incidence of disease presentation as 1st marker.
- Frequent association with other diseases marker, mainly CMV and PJP.
- High sensitivity of India ink and antigenorraquia.
- Prevalence in patients with advanced immunosuppression.
- Low percentage of normal physicochemical CSF.
- Increased mortality, especially in relapsed.
New treatment of cutaneous herpes zoster and control of neuralgia

N. Muthotho
King Baudouin Foundation Kenya, Nakuru, Kenya

**Background:** As Kenya faces AIDS epidemic, the herpes zoster infection is on the increase in general population especially sexually active youth thus this ointment has come at the right time. The antiviral drugs (acyclovir) and analgesics are very expensive and are not available. Hence herpes acute pain and post-herpetic neuralgia are a major cause of HIV/AIDS patient morbidity. To reduce this problem herb extracts were tested for their efficacy.

**Methods:** As Kenya faces AIDS epidemic, the herpes zoster infection is on the increase in general population especially sexually active youth thus this ointment has come at the right time. The antiviral drugs (acyclovir) and analgesics are very expensive and are not available. Hence herpes acute pain and post-herpetic neuralgia are a major cause of HIV/AIDS patient morbidity.

**Results:** SAP was found to have polyphenolic compounds, tannins. Coagulum, volatile oils, gum and non-toxic cardiac glycosides. This extract inhibits the growth of viruses when is diluted to 1:32. When it was applied on the patient’s blisters 3 times, the culture from vesical fluid were negative within 3 days. The acute zoster pain was eliminated within 10 minutes also patients did not experience post herpetic neuralgia after 10 after days treatment with the extract while those who were treated with antiviral drugs continued to have post herpetic neuralgia pain for 5 months. This treatment has become standard treatment for herpes zoster cases at CBHC in Kenya. This milky extract from plumeria alba has polyphenolics which kills the viruses and also eliminates neuralgia during active infection and post herpetic neuralgia.

**Conclusion:** The health workers have observed all those patients who have been treated for the last 15 years with primeria alba preparations, do not have recurrent herpes zoster infection or suffer from post herpetic neuralgia thus shows maybe these polyphenolics compounds when they penetrate through the blisters eliminate the virus from the neurons. Patients do not need admission in the Hospital because after 15 minutes the pain is eliminated and they have to go home and continue with their normal work.
Prospective microbiological surveillance at a metropolitan Hospital of Bologna, Italy. Changing epidemiological features, and \textit{in vitro} antimicrobial susceptibility trends

\textbf{R. Manfredi}

University of Bologna, Bologna, Italy

\textbf{Background:} An active bacteriological surveillance project is part of the mandatory knowledge on the local microbial isolation and their antimicrobial resistance pattern. An active, prospective microbiological monitoring may significantly add to the knowledge of local epidemiological figures and antimicrobial sensitivity trends, and plays a role of paramount importance when selecting and planning chemoprophylaxis and therapeutic strategies, on a local and regional basis.

\textbf{Methods:} The trend of microbial isolations from patients admitted in the last year 2008 (January 1, 2008-December 31, 2008) at our Hospital is reported on quarterly basis, together with updated antimicrobial sensitivity testing.

\textbf{Results:} As a whole, Gram-negative agents showed an increasing trend of isolation, regardless of the examined clinical specimens, while the epidemiology of Staphylococci remained somewhat unchanged, and their methicillin resistance rate remained under control (around 39\% of overall isolates from blood cultures). When considering Enterococci, the active surveillance of VRE strains successfully acted against the potential nosocomial spread of these organisms: the only 7 cases of “Van A” \textit{Enterococcus faecalis} strains were not related with each other, and glycopeptide resistance remained limited to less than 3\% of overall Enterococci. An increasing number of ESBL-producing Enterobacteriaceae was noticed (with a 29-36\% quarterly rate for \textit{Escherichia coli}, and up to 41\% for other organisms, as a whole). The overall resistance rate against fluoroquinolones is on steady increase: the last quarterly report shows a 47.3\% rate for \textit{E. coli}, 30.8\% for Enterobacteriaceae, and 42.6\% for \textit{Pseudomonas aeruginosa}.

\textbf{Conclusion:} An active, prospective microbiological monitoring may significantly add to the knowledge of local epidemiological figures and antimicrobial sensitivity trends, and plays a role of paramount importance when selecting and planning chemoprophylaxis and therapeutic strategies, on a local and regional basis.
Established, real-time microbiological surveillance in a teaching Italian hospital. Microbial isolations and in vitro antimicrobial susceptibility levels over time

R. Manfredi
University of Bologna, Bologna, Italy

Background: A prospective microbiological surveillance of microorganisms isolated at a reference hospital and their antimicrobial susceptibility, is of paramount importance in the awareness of evolving local epidemiology.

Methods: The trend of microbial isolations from patients (p) hospitalized in the last year 2008 (January 1, 2008-December 31, 2008), is reported on quarterly basis, together with the related antimicrobial sensitivity testing. Surveillance cultures and multiple isolations of the same organism(s) from one p within one month of hospitalization, were excluded.

Results: 4,906 overall evaluable pathogens were isolated in the last 12 mo, with E.coli (1,279), E.faecalis (596), P.aeruginosa (430), and S.aureus (365), as prevailing organisms. Among blood cultures (1,421 isolates), a major role was played by Staphylococci as a whole (688), followed by Enterobacteriaceae (253), and Enterococci (77). With regard to the overall susceptibility rates, methicillin-resistant S.aureus accounted for a mean 42%, while methicillin resistance was greater for S.epidermidis (>70%), with a slight reduction compared with the year 2007 figures. Substantially ameliorated sensitivity levels were found among Enterococci, with only 7 “VRE” strains recorded (versus 17-21 strains per year, during 2005-2007); a slight increase of resistance towards glycopeptides was found, reaching 3.1% of isolates in the last 3 mo. A 25-38% resistance rate to macrolides was found among streptococci, without appreciable temporal variations. Among Gram-negative organisms, extended spectrum beta-lactamase production regarded 31.8% of overall E.coli isolates, and 39.6% of other Enterobacteriaceae, with a slight increase compared with the year 2007. P.aeruginosa showed an stable resistance pattern to penicillins-cephalosporins (including those protected by beta-lactamase inhibitors), carbapenems, fluoroquinolones, and aminoglycosides (ranging from 55% to 75% of strains), but remained full susceptible to colistin. Stenotrophomonas maltophilia confirmed its extensive resistance spectrum, but remained 90-100% sensitive to cotrimoxazole and colistin, as well as Acinetobacter spp., which showed a favorable susceptibility rate (60-100%) to aminoglycosides, piperacillin-tazobactam, and colistin.

Conclusion: An active bacteriological surveillance may notably add to the knowledge of local epidemiological figures and antimicrobial sensitivity trends, and plays a major role when planning surveillance measures, chemoprophylaxis, and empiric antimicrobial treatment, on both local and regional basis.
Vascular catheter infection pattern. A temporal surveillance study of 581 consecutive episodes in a tertiary-care Hospital

R. Manfredi
University of Bologna, Bologna, Italy

**Background:** A prospective microbiological surveillance program is ongoing at our tertiary-care Hospital located in Northern Italy, with special focus on central vascular lines.

**Methods:** The trend of microbial isolations from patients admitted during the last calendar year (January to December 2008), with a clinically- and microbiologically-confirmed central venous catheter (CVC) infection, is regularly reported on quarterly basis.

**Results:** The trend of CVC infections monitored among our inpatients moderately varied during the observation period (128 cases in January-March, 147 episodes in April-June, 117 cases in July-September, and 113 episodes in October-December). Among the most frequent organisms, *Staphylococcus epidermidis* accounted for the majority of isolates (148 cases of 505: 29.3%), followed by *Escherichia coli* (43: 8.5%) and *Staphylococcus aureus* (43: 8.5%), *Pseudomonas aeruginosa* (36: 7.1%), *Klebsiella pneumoniae* (32: 6.3%), *Enterococcus faecalis* (30: 5.9%), *Enterobacter cloacae* (23: 4.6%), and *Enterococcus faecium* (16: 3.2%), and while the yeast *Candida albicans* accounted for a minority of episodes (11 only: 2.2%). When analyzing the available figures according to calendar months, no increasing incidence was observed over time for all retrieved pathogens, save a slight increase of *Proteus mirabilis* isolates (5 strains in the last 2008 quarter, compared with 0-2 strains in the first three quarters of 2008), and the appearance of a few *Candida glabrata* strains (4 cases only in the year 2008).

**Conclusion:** A prospective microbiological monitoring may notably add to the knowledge of local epidemiological figures and antimicrobial sensitivity trends of CVC infection (which represent relevant causes of hospital-related morbidity-mortality), and plays a highly significant role in the selection and planning of chemophrophylactic and therapeutic choices, on both local-regional settings. Although the major causative agents of CVC-related infection among hospitalized patients remain staphylococci as a group, however the progressive emerging of Gram-negative pathogens is appreciable also over a proportionally short (12-month) observation period, and deserves major attention by Microbiologists and Clinicians.
Prospective, systematic microbiological surveillance in a tertiary care metropolitan hospital: Data from a four-year survey

R. Manfredi
University of Bologna, Bologna, Italy

Background: A microbiological surveillance program is prospectively performed at our tertiary-care Hospital.

Methods: The temporal trend of microbial isolates from patients admitted during the last four calendar years (2005 to 2008), is assessed according to the main bacterial and fungal cultures. The same pathogens cultured more than once from the same patient within one month, have been considered only once.

Results: On the whole, the main pathogen group remained that of Enterobacteriaceae (7,025 isolations of 20,363: 34.5%, with *Escherichia coli* retrieved in 60-75% of cases), with no significant difference over time. Staphylococci (3,200 isolates), and Enterococci (3,197 isolates), were the two largest groups after Enterobacteriaceae, but Staphylococci significantly declined in the four-year period (from 23.5% to 15.7%; \( p < .001 \)), mainly due to a reduced isolation of coagulase-negative Staphylococci, while a very slight increase of Enterococci occurred (from 15.1% to 15.7%). Based on the frequency of isolation, Gram-negative oxydase-positive organisms accounted for 1,827 episodes, followed by other aerobe Gram-positive organisms other than Staphylococci-Enterococci (633 isolates), and anaerobes (521 isolates): no significant temporal variations occurred over time for these last microbial groups.

With regard to Gram-negative oxydase-negative microorganisms (611 isolates), non-beta-hemolytic Streptococci (435 cases), and beta-hemolytic Streptococci (285 isolates), a significant trend towards a reduction of frequency occurred from the year 2005 to 2008 (\( p < .05 \) to \( p < .001 \)). Finally, fungal infections accounted for less than 800 overall episodes, in 671 cases represented by the yeast *Candida albicans*.

Conclusion: A prospective microbiological monitoring is expected to significantly contribute to the knowledge of local epidemiological figures and antimicrobial sensitivity profile of hospital infections, and plays a relevant role in the selection of both chemoprophylaxis and treatment, especially on local-regional basis. Although the major causative agents of inpatient infection remain Enterobacteriaceae, however a significant decline of coagulase-negative Staphylococci occurred (including potential contaminants belonging to *S. epidermidis* group), followed by all Streptococci, and Gram-negative oxydase-negative organisms occurred over the examined four-year period, while Enterococci showed a very mild increase over time.
Background: A prospective microbiological surveillance monitoring including culture and systematic in vitro antimicrobial susceptibility studies of all relevant pathogens, is ongoing at our Hospital. Particular attention has been deserved to Pseudomonas aeruginosa, as a leading Gram-negative organism, often testing multiresistant in hospital settings.

Methods: The temporal variations of in vitro antimicrobial sensitivity rates of all isolated Pseudomonas aeruginosa strains were collected for all suitable isolates, during the four-year period ranging from January 2005, up to December 2008. The same pathogen cultured more than once from the same patient within one month, was considered one time only.

Results: Among Pseudomonas aeruginosa isolates (1,991 evaluable tested strains), the best performance was obtained by the old colistin (colimycin), with a sustained 100% susceptibility rate, followed by imipenem (76.3-80.6% of tested strains), amikacin (73.2-80.4%), piperacillin-tazobactam (70.7-79.1%), ceftazidime (68.6-77.5%), and tobramicin (65.1-72.3%). On the other hand, gentamicin (55.5-67.1% of tested strains), aztreonam (57.9-64.9%), ciprofloxacin (56.2-64.3%), ticarcillin-clavulanate (53.9-61.0%), and mezlocillin (49.0-53.6%), proved less affordable. A significant temporal trends towards a reduced antibiotic sensitivity was found for the majority of tested molecules, but it resulted significant for aztreonam, ciprofloxacin (p<.005), ticarcillin-clavulanate (p<.03), and mezlocillin and tobramicin (p<.05).

Conclusion: A prospective monitoring of antimicrobial susceptibility rates of a major hospital-associated organism like Pseudomonas aeruginosa is relevant, to add to local and national guidelines of antibiotic treatment and prophylaxis. Despite a significant increase of resistance rates against the majority of compounds which usually test active against Pseudomonas aeruginosa, however amikacin, carbapenems, piperacillin-tazobactam, amikacin, imipenem, and ceftazidime still maintain a reliable role in eventual, empiric regimens to be added pending microbial isolation and in vitro sensitivity assays, since they remained active in at least 70% of hospital isolates of the last four years (2005-2008). Colistin, which maintains full in vitro activity against all Pseudomonas strains, remain as a possible component of combined antimicrobial strategies, when multiresistant pathogens are of concern.
Microbiological features of *Enterococcus faecalis* and *Enterococcus faecium* assessed according to an Hospital-based prospective surveillance program: *in vitro* antimicrobial susceptibility profile, and temporal trend

**R. Manfredi**
University of Bologna, Bologna, Italy

**Background:** The increased temporal rate of antimicrobial resistance among Gram-positive cocci (including Enterococci) is a major concern, especially in hospital-based settings.

**Methods:** The temporal trend of the *in vitro* antibiotic susceptibility rates was investigated for all *Enterococcus faecalis* and *Enterococcus faecium* strains, isolated at our tertiary-care Hospital during the year 2008. The same pathogen isolated more than once from the same patient within one month, has been considered once.

**Results:** Among *Enterococcus faecalis* isolates (638 strains tested on the whole), the greater activity rate was achieved by linezolid (100% of tested strains), followed by teicoplanin (98.8-100.0%), vancomycin (87.5-100%), nitrofurantoin (94.4-97.9% of strains), while appreciable, but irregular variations of sensitivity occurred over time for penicillin, ampicillin, gentamicin, streptomycin, and tetracyclines (11.5-28.0% of strains). With regard to *Enterococcus faecium* strains (140 strains), both linezolid quinupristin/dalfopristin maintained a 100% *in vitro* activity, followed by teicoplanin (90.0-100.0%), vancomycin (77.8-100% of strains), streptomycin (50.0-90.9%), gentamicin (50.9-88.9%), and tetracyclines (52.4-61.8%), while negligible efficacy was shown by ampicillin (6.3-26.7% of tested strains) and penicillin (6.3-26.7%). Only seven strains of vancomycin-resistant Enterococcal (VRE) strains were detected (three of them in the January-March 2008 period). No significant temporal modifications of antimicrobial sensitivity rates were observed during the one-year follow-up, save the absence of VRE strains in the last three months of 2008 (October to December 2008).

**Conclusion:** A prospective surveillance monitoring of *in vitro* antimicrobial susceptibility rates of some relevant hospital-associated organisms like Enterococci represents an useful tool to address antibiotic treatment and prophylaxis, on local and regional basis. The emerging of resistance to the reference compounds like glycopeptides may be also well targeted on these basis, in order to preserve the clinical use of the majority of molecules which still guarantee effective activity of these difficult-to-treat Gram-positive cocci.
Background: A prospective microbiological surveillance study of bacteremias is ongoing at our Hospital since the year 2005.

Methods: The temporal trend of microbial isolates from blood cultures of inpatients hospitalized during the last four calendar years (2005 to 2008), was evaluated according to the main bacterial and fungal isolates. The same pathogens cultured more than once from the same patient within one month, have been considered only once.

Results: Of 4,168 overall episodes, *Staphylococcal epidermidis* remained the leading organism (761 cases: 18.3%), but a dramatic drop in its frequency occurred during the observation time (from 26.1% of cases in 2004, to 18.3% in 2008; \(p<.0001\)). The second causative agent of bacteremia was *Escherichia coli* (465 episodes: 11.2%), followed by *Staphylococcus aureus* (309 cases: 7.4%), *Enterococcus faecalis* (223 episodes: 5.4%), *Pseudomonas aeruginosa* (179 cases: 4.3%), *Klebsiella* spp. (143 episodes: 3.4%), and *Enterococcus faecium* (104 episodes: 2.5%). When excluding the above-mentioned changes is staphylococcal isolations, significant time-based modifications occurred only for *Pseudomonas aeruginosa* (temporal increase: \(p<.04\)), and *Klebsiella* spp. (temporal increase: \(p<.01\)). Among fungi, *Candida albicans* was the most represented organism, with 104 episodes (2.5%), without changes in its frequency in the 2005-2008 period.

Conclusion: A prospective microbiological monitoring is expected to significantly add to the awareness of local epidemiological figures and antimicrobial sensitivity profile of hospital infections, including bacteremias, which are responsible for considerable morbidity and mortality rates among inpatients. Although the main etiological agents of inpatient bacteremias are still represented by coagulase-negative Staphylococci, these microorganisms significantly declined during the four-year study period, thus confirming a positive trend toward a progressively reduced incidence of contaminated blood cultures. On the other hand, an appreciable increased frequency occurred over time for *Pseudomonas* and *Klebsiella* spp. A major, persisting role as agents of hospital bacteremic episodes is still exerted by *Escherichia coli* among Gram-negative pathogens, and *Staphylococcus aureus* among Gram-positive ones.
Klebsiella infection in neonatal intensive care unit a national hospital

A. Tarazona, E. Aguilar, V. Gonzales, J. Arbizu, J. Mendoza
Hospital Nacional Sergio E. Bernales, Lima, Peru

**Background:** The objective is to determine the epidemiological, clinical and microbiological characteristics of the Healthcare Associated Infection (HAI) caused by Klebsiella in the neonatal intensive care unit (N-ICU) of the HNSEB.

**Methods:** A retrospective, descriptive, transversal. Population: newborns (NB) admitted to the N-ICU in November and December 2008. Data are collected from medical records, be booked on schedule established. Is processed in Excel 2007. We used statistical frequency.

**Results:** NB 60, 17 of them infected with Klebsiella pneumoniae. 13 male, 12 Pre terms. 04 less than 1500 gr, 06 less than 2500 gr, 07 more than 2500 gr. childbirth dystocia 12. Hospitalization average: 20.8 days. attack rate 30%, prevalence 28%, 29% lethality. Diagnoses: sepsis (15), pneumonia (01), and urinary tract infection (01). Combine: hyaline membrane disease and respiratory distress (09), pneumothorax, volvulus, Omphalocele, Meckel diverticulum, necrotizing enterocolitis (01 each one).

Maternal factors: severe pre-eclampsia (04), rupture of membranes (5), urinary tract infection (05), home delivery (01), without prenatal care (02).

Devices and other: mechanical ventilator (08), all with venous catheter and probe oral gastric, abdominal surgery, lumbar puncture and thoracic drainage (01 each one).

Three cases were also isolated S. aureus, S. epidermidis and Acinetobacter ywoffii.


Studying sources this resistance pattern was found in the K. pneumoniae isolated from the hands of doctors, nurse technique, suction tube and feces of infected NB. Control intervention: to reduce overcrowded of service, early isolation, strengthening of standard precautions and intensification of microbiological monitoring. Favorable results

**Conclusion:** There is dystocia and preterm birth as a factor, high attack rate and mortality, Sepsis as the main clinical; Multiresistant bacteria.
Rectal adenocarcinoma endocarditis
K. Duraku¹, D. Kraja², N. Como³, E. Muco¹, A. Kica¹
¹HUC, Tirane, Albania, ²Faculty of Medicine, Tirane, Albania, ³University Hospital Centre "Mother Theresa", Tirana, AL, Albania

Background: The biodiagnostic techniques have extended the etiological spectrum of infective endocarditis improving this way the quality of their treatment

Methods: Identification of correlation between rectal cancer and infective endocarditis and subsequent therapeutic problems.

Results: The patient H.B, 56 years old, was hospitalized as F.U.O. He was not sensitive to Ciprinol, Trimethoprim-sulfamethoxasol, and Amoxiclav. Anamnesis showed episodes of fever (4-5 days) during the last 5 months and diarrheic, sometimes bloody stools during the last 8 months which were treated with Antihemorrhoidales, Loperamide and Doxycycline. Anamnesis vitae: prolapse of mitral valve without endocarditis. Objective examination: systolic noise in apex, Fc 125 m/min. BP 95/65 mmHg and hepatosplenomegaly. The solution of this FUO with hepatosplenic syndrome required several bloodcultures, which resulted positive to Streptococcus Bovis. TTE suspected an infectious mitral verrucos endocarditis, confirmed with TEE. The case was considered as an infectious endocarditis from Streptococcus Bovis and was treated with Ampicillin and Gentamicin, which dominated fever on the third day or treatment. The presence of this bacteria in blood and the disturbances of defecation, required the exploration of the digestive tract where it was found a rectal adenocarcinoma. It was decided to intervene by surgical procedures initially in colon and then in heart, under antibacterial treatment. Both procedures were successfully realized.

Conclusion: This case represents a major interests on the apprehensive aspect. It testifies the possibility of endocarditis from an atypical strain, which needs to be considered for the etiological treatment. It also shows the possibility of Infective Endocarditis caused by rectal cancer. The protocol was not easy to determine, each procedure has its own importance. Our choice was proven to be successful.

The first intervention should be performed in colon or in heart?
Incidence of nosocomial urinary tract infection (NUTI) in pediatric intensive care unit (PICU) at the University Hospital Center (UHC) of Tirana

I. Kasmi, G. Kasmi, S. sallabanda, E. kola, I. bakalli, F. Zavalani, R. Llukaj, E. celaj, A. koja
University Hospital Centre "Mother Theresa", Tirana, AL, Albania

Background: Urinary Tract Infection (UTI) is the most common type of nosocomial infections of UHC.

Methods: The study is of a prospective nature. The data regarding the incidence, etiology and antimicrobial resistance of the urinary isolates in PICU were collected during the period February 2007 - January 2008. NUTI was defined according CDC criteria as the occurrence of any UTI beginning at least 48 h after admission.

Results: Out of 484 patients 20 resulted NUTI positive with etiological pattern as follow: 
Escherichia coli 40%, Pseudomonas aeruginosa 10%, Enterobacter sp 10%, Enterococcus sp 10%, Staphylococcus epidermidis 10%, Klebsiella sp 5%, Proteus sp 5%, Candida albicans 5%.

The antibiogram indicates presence of vankomycine resistant Enterococcus sp and E.coli aminopenicilline and co-trimoxazol resistant.

It was observed a significant correlation with the usage of urinary catheters and the NUTI appearance. 94 patients was exposed to urinary catheters, out of them 12 had NUTI with a RR > 6. Comparison of the average duration of urinary catheters in patients with (3.1 days) and without (1.5 days) NUTI, by the way of Student test for one simple turned out to be significant (p< 0.01).

Conclusion: Incidence of NUTI was 4%. These data show the correlation between the extrinsic factors and the appearance of NUTI. Multiresistant strains pose major difficulties in managing NI.
Impact of outcome surveillance on central line-associated bloodstream infection rates in 11 intensive care units in 2 cities of Colombia: findings of the International Nosocomial Infection Control Consortium (INICC)


1San Ignacio University Hospital, Pontificia Javeriana University, Bogota, Colombia, 2Buenos Aires, Argentina, 3Santa Maria Medical Center, Sucre, Colombia, 4Simón Bolivar ESE Hospital, Bogota, Colombia, 5Clínica Nueva Private Hospital, Bogota, Colombia, 6La Victoria Hospital, Bogota, Colombia, 7La Sabana Medical Center, Sucre, Colombia, 8El Tunal ESE Hospital, Bogota, Colombia

Background: To determine the effect of outcome and process surveillance (intervention) on the rate of Central Line-Associated Bloodstream (CLAB) infection in 11 intensive care units (ICUs) from 2 cities of Colombia.

Methods: An open label, prospective cohort, active CLAB surveillance, sequential study was conducted on adult and neonatal patients admitted to tertiary-care ICUs. Rates of CLAB were recorded by applying the definitions provided by CDC-NNIS. The protocol, forms, and outcome and process surveillance methodology used were developed by the INICC. Data were collected from patients with and without device associated infection (DAI). Forms were designed to continuously prompt surveillance officer to suspect DAI by providing a panoramic view of outcomes for each patient (eg, vital signs, invasive device use, cultures, antibiotic use, etc); this is useful when no cultures have been done, because DAI could otherwise be wrongly omitted. Data were collected in ICU. Data uploading and analysis were done at INICC office analyzing DAI rates, microbiological profile of isolates, bacterial resistance, LOS, extra mortality. The CLAB rates during baseline were compared to the rates during an intervention period. Statistical analysis was performed using Chi-square test. P <0.05 was considered significant.

Results: The baseline period included the first three months of each medical center’s participation in the study; the intervention period lasted a mean of 24.5 months (range 6-54 months). During the baseline period, 620 ICU patients were enrolled, and 5,516, patients were enrolled during the intervention period. Patients’ characteristics were similar over the two periods (Patient Gender, P: 0.3271; Patient Age, P: 0.6744; Cancer, P: 0.1032; Renal Failure, P: 0.4458; Hepatic Failure, P: 0.5380; Thoracic Surgery, P: 0.5161; Trauma, P: 0.6332; Previous Infection, P: 0.5982; Stroke, P: 0.2445; Immune compromise, P: 0.6788). The rate of CLAB per 1,000 CL days during the intervention period was significantly lower than during the baseline period, 15.4 (52/3,376) vs. 10.6 (277/26,171) CLAB per 1000 CL days (RR, 0.69; 95% CI, 0.51-0.92; P 0.0125).

Conclusion: Outcome and process surveillance resulted in a significant reduction of the CLAB rate.
Background: Bacteremia is a complex problem, particularly due to high degree of multi-resistant bacterial strains found at increasing rate among the isolates, thus further endangering lives of the affected. The aim of this study was to describe the most common causes of bacteraemia in patients treated in Clinical Centre Kragujevac during June 2008- July 2009 period, as well as their sensitivity to antimicrobial agents.

Methods: The research data were extracted from official reports produced by Microbiological Laboratory in Clinical Centre Kragujevac. Isolation and identification of the causes were performed with standard microbiological methodology. Sensitivity to antimicrobial medication was tested using disc diffusion, on Mueller-hinton agar as well as 5% cow's blood with guidelines of US Clinical and Laboratory Standards Institute (CLSI). A descriptive epidemiological approach was used in the research. The collected data were processed using the appropriate software application.

Results: Amongst the processed samples, a significant presence of Staphylococcus spp. was found (coagulasa-negative 35.8% and coagulasa-positive 11.7%). Over 60% of Staphylococcus aureus were resistant to meticillin. Enterococcus spp. isolated in 11.7% of all isolates, in sensitivity of 90%. The isolated Klebsiella spp strains produced high degrees of Extended Spectrum β-Lactamases (ESBL) and showed resistance to third-generation cephalosporins, aminoglycosides and ciprofloxacin, with 100% sensitivity to carbapenem. Pseudomonas spp and neither pathogens were exempt to antimicrobial multiresistence.

Conclusion: The research indicated that causes of hospital infections should be continuously monitored. In addition, a multidisciplinary team of physicians in charge of continuous monitoring and controlling antibiotics application should be formed.
The prevalence of infectious pathology in patients accepted in the ICU at the clinic for infectious diseases in Macedonia

P. Stojovska¹, Z. Milenkovic², K. Grozdanovski¹, V. Kirova-Urosec⁴, M. M. Cvetanovska¹, R. Kalamaras⁴, R. Stojovski¹, K. Georgieva¹, I. Demiri¹, A. Kalamaras¹, V. Stojovski¹
¹Clinic for infectious diseases, Skopje Macedonia, 1000, Macedonia, ²Clinical center-Scopje, Scopje, Macedonia, ³Clinic of infectious diseases and febrile conditions, Skopje, Macedonia, ⁴Institute for transfuziology, Skopje, Macedonia

Background: The aim of study: The spectrum of infectious diseases in patients accepted in the ICU was studied in a five year period (2005-2009)

Methods: The clinical records of all patients accepted in the ICU were revised from the past five years. The cases were classified by their diagnose, relayed on their clinical symptoms, etiological agents and lab-biochemical findings. Statistical analyses was done

Results: A total of 872 cases were attended in the ICU during five year period and a total of 705 were discharged. Lethal outcome was in 167 (19 %) patients. Meningoencephalitis was diagnosed in 104 (11,9 %); encephalitis in 53 (6,07 %); meningitis purulenta in 40 (4,58%); meningitis serosa in 3 (0,34 %); bronchopneumonia massiva in 153 (17,5 %); sepsis in 145 (16,6%); hepatal comma in 26(2,9%); hepatitis in 36 (4,1%); toxicosis in 23(2,63%); enterocolitis in 101 (11,5%); endocarditis in 18(2,06%); tetanus in 3(0,34%). Other cases were with no significant frequency.

Conclusion: Bronchopneumonia massiva, sepsis and meningoencephalitis were the most frequent pathology in the ICU in the past five years (2005-2009).
Exploring anti-pseudomonal potential of Aloe Vera (Aloe barbadensis Miller) isolated from different pyogenic infections

A. Bashir¹, S. Sherwani², M. Aziz¹, F. Farooq³, S. Kazmi⁴
¹University of Karachi, Karachi, Pakistan, ²Federal Urdu University, Karachi, Pakistan, ³University of Karachi, Karachi, Pakistan, ⁴Immunology and Infectious Disease Research Laboratory - Department of Microbiology, Karachi, Pakistan

**Background:** Aloe vera has been one of the most important plants used in folk medicine. The Egyptians referred to aloe as the “plant of immortality” and included it among the funerary gifts buried with the pharaohs. The healing benefits of aloe were recognized in the ancient Indian, Chinese, Greek, and Roman civilizations. It is traditionally used to heal wounds, relieve itching and swelling, and is known for its anti-inflammatory and antibacterial properties.

**Methods:** A total of 100 pus discharge was collected aseptically from patients suffering from pyogenic infections (wound, diabetic, acne, burns) from different pathological laboratories of Karachi and cultured on different media including Blood, Nutrient and MacConkey’s agar. The predominant etiologic agent was selected and later identified by conventional (Biochemical), rapid (QTS 24) and molecular (PCR) method targeting ompf gene. The aqueous extracts of Aloe vera (gel and leaf) was prepared and its antibacterial effect along with the antibiotic susceptibility profile to a panel of eight different antibiotics were also determined by Kirby-Bauer method against clinical isolates.

**Results:** Conventional methods, QTS 24 and molecular identification results confirmed Pseudomonas aeruginosa (Pure growth of Pseudomonas with green pigmentation isolated from nutrient and blood agar in more than 50% processed clinical specimens. Antibiotic susceptibility studies indicated that etiologic agent was resistant to one or more antibiotics particularly Tetracycline (68%), Erythromycin (80%), Ampicillin (40%) Vancomycin (10%) so in case of fluoroquinolone category of antibiotics resistance has been indicated in the order of ofloxacin (20%) and ciprofloxacin (10%). However, the Aloe Vera gel possesses inhibitory effect against most of the more than 60% clinical isolates and almost no significant activity of aqueous leaf extract was found against *Pseudomonas aeruginosa.*

**Conclusion:** The present study has revealed the importance of natural products to control antibiotic resistant bacteria, which are being a threat to human health. Numerous plants indigenous to Pakistan in general have been found with amazing medicinal properties as the results of this study indicate that Aloe vera potential has got enormous potential against Pseudomonas aeruginosa and could serve as an alternative therapeutic tool provided extensive research has to conducted in this area.
The Future of Hospital-acquired infection control: Anticipating the emergence and reducing the impact of MRSA in the UK hospital environment

A. Dyal
St George's University, St George's, Grenada

**Background:** Hospital-acquired infections, specifically antibiotic resistant strains, are a serious health concern and a leading cause of avoidable death in healthcare establishments. Although some progress has been made in the United Kingdom (UK), the rates of Methicillin Resistant Staphylococcus Aureus (MRSA) are much higher than that of other European countries such as The Netherlands. Hospital-acquired infections, specifically antibiotic resistant strains, are a serious health concern and a leading cause of avoidable death in healthcare establishments. Although some progress has been made in the United Kingdom (UK), the rates of Methicillin Resistant Staphylococcus Aureus (MRSA) are much higher than that of other European countries such as The Netherlands.

**Methods:** The infection control policies of the UK, as exemplified by Dudley Primary Care Trust (PCT), were compared to the Dutch MRSA control policy and a new protocol has been developed. This protocol incorporates proven infection control protocols, new methods to reduce the emergence and effects of MRSA and measures to increase staff compliance.

**Results:** The new MRSA control policy includes measures pertaining to carrier isolation, active surveillance, culturing & identification, procedural protocols, guided antibiotic use, outbreak control, risk identification & classification, leadership engagement, compliance, hand hygiene and cultural transformation.

**Conclusion:** This protocol should lead to a 25% reduction in cases, a 52% reduction colonisation and can be implemented quickly and cost effectively with significant results being achieved within one year. This new policy can be applied in its entirety to the National Health Service (NHS) and other international healthcare systems.
Assessment and development of integrated disease surveillance program in Pakistan
S. M. M. Mursalin
National Health Information Program, Government of Pakistan, Islamabad, ICT, Pakistan

Background: Communicable diseases remain the most important health problem in Pakistan. The commonest causes of death and illness in the country are acute respiratory tract infections, diarrhoeal diseases, malaria, tuberculosis, HIV/AIDS/STIs and vaccine preventable infections. Epidemic-prone diseases such as meningococcal meningitis, cholera, hepatitis and viral hemorrhagic fevers are also prominent health threats in the country. A functional disease surveillance system is thus needed for priority setting, planning, resource mobilization and allocation, prediction and early detection of epidemics and monitoring and evaluation of intervention programmes. Most of the current disease surveillance systems in Pakistan are neither working effectively to measure the health impact of the major diseases nor adequately evaluating current disease control programs

Methods: 1. Joint review Pre-assessment workshop with key stakeholders
1. Development and finalization of a coded questionnaire.
2. Focus Group Discussions with field and supervisory staff.
3. Data Collection from the field hospitals, supervisory / managerial levels.
4. Data Analysis and Development of Final Assessment Report

Assessment Framework

Results: Considerable interest, enthusiasm and willingness at all levels to improve surveillance, disease prevention and control, and outbreak response. AFP/Polio surveillance system is excellent - works at every level from grass roots to federal. A unit in charge of surveillance and disease prevention/control activities at each level Resource sharing among programs Roles and responsibilities at different administrative levels Functional public health laboratory network Transition Data analysis and conversion into useful information that leads to timely action Systematic approach to training Involvement of hospitals, private, academic sector, other stakeholders Preparedness for epidemics and disasters Legal framework

Conclusion: Establish a surveillance unit at federal, provincial and district levels that is responsible for surveillance activities including disease detection and response. Surveillance and response activities must be functionally integrated across programs Development of public health laboratory network linked with other components of surveillance. Training for improved surveillance, disease prevention / control, and outbreak response Promote use of surveillance information for public health interventions Legal framework Identify team to develop National Action Plan Prioritization exercise Needs assessment for training, resources, infrastructure Technical assistance available if requested Consensus building on design of surveillance system. National Action Plan for Public Health Surveillance System Development in Pakistan.
The potentials of community human capital in urban health interventions: The case of cholera control in Ghana

E. KOOMSON
GHANA HEALTH SERVICE, CAPE COAST, CENTRAL, Ghana

Background: This abstract highlights the collaborative community based activities initiated by the Central Region Health Directorate of the Ghana Health Service in July 2006 to control cholera outbreaks in coastal urban communities in a health district. The Ministry of Health was concerned that the numerous human capital and material resources invested in health promotion activities have not been able to eliminate cholera in the Central Region.

Methods: The Regional Health Unit of the Central Regional Health Directorate of the Ghana Health Service organized monthly participatory data collection processing activities at all the 48 health facilities through from July to December 2006, involving community members and school teachers. 142 people were trained on social communication techniques, qualitative data analysis, participatory development, community based surveillance system, monitoring, reporting of health interventions and demand for better hygiene and sanitation.

Results: Cholera has been virtually eradicated since 2007. Community members have been able and continue to recognize high-risk behaviors and the beliefs that supported them. The training program has also improved decision making on health promotion and social sustenance against ill health and infectious diseases.

Conclusion: Notions of entitlement, standard “one-size-fits-all” designs, or outsiders’ judgments about what people need and ought to pay in terms of health care decision making is not important. Learning process approaches which result in decision making for environmental health investments and services based on individual, neighborhood and community demand is among the priority hallmarks in public health policy.
Strengthening of surveillance system for detection of pulmonary tuberculosis cases, Punjab 2009

P. kumar
Field epidemiology and laboratory training program islamabad pakistan fellow, Rawalpindi, PUJAB, Pakistan

Background: Tuberculosis is reemerging. Pakistan ranks sixth among the highest burden of disease. The incidence is 177/100,000 /year, its means 280,000 new cases in each year. Prevalence is 263/100,000 /year. Multiple drug resistance rate is 3 %. Major risk factors are delay in diagnosis, and issues of management of pulmonary tuberculosis cases. Case detection rate at present according to World Health Organization (WHO) is 67 %. The target of WHO for case detection rate is 70% of estimated cases. Treatment completion rate is 70% while WHO target is 85%. The target of WHO can only be achieved by developing a effective surveillance system for case detection.

Methods: At present passive surveillance system, Health Information Management System (HIMS) is working in health system. HIMS covering from basic health unit up to teaching hospitals. In this system general screening of all patient carry out for tuberculosis without the reason for attending the health facility. Data collected for surveillance evaluation by interviewing the key informant persons and focus group discussion of health staff. High missing rate of tuberculosis is a major short coming and responsible for high burden of disease. This can be overcome by addition of active surveillance component to the existing surveillance of health system by involving the other stakeholders in this process. By this we can increase case detection rate and have a better control of disease. At present private clinic, nursing homes, homeopathic clinics, hakeems, private teaching hospitals, quacks clinics, private laboratories are not providing any kind of tuberculosis patient data to district TB control authorities. On the other side TB control authority also not have any kind of surveillance system to collect the data from these sites

Results: Existing surveillance system for tuberculosis are evaluating by using Centre for Disease Control and Prevention (CDC) Atlanta Updated Guideline and founds system attributes simplicity, acceptability, and stability are good, data quality, sensitivity, PVP poor and timeliness, flexibility are average

Conclusion: Surveillance system based upon active and passive case detection by involving all stake holders in the surveillance process is a best fit model in our culture.
Syphilis vertical transmission: Knowing to intervene

S. Coelho¹, V. N. Oliveira¹, G. C. Palermo¹, C. A. A. Ferreira¹, R. E. M. Biagolini¹, V. Souza Pinto²
¹Sao Camilo University, Sao Paulo, SP, Brazil, ²Emilio Ribas Institute for Infectious Diseases, Sao Paulo/SP, Brazil

Background: Syphilis is a systemic and chronic infectious disease which varies on its primary, secondary, latent and tertiary phases and it is caused by Treponema pallidum. The disease is still considered a major problem on public health all over the world due to the great number of infected people and the vertical form of transmission – congenital syphilis (CS). Accordingly World Health Organization (WHO) there are more newborns affected by CS than any other neonatal infection. In 1993 the Brazil Ministry of Health propose a project called ‘The Elimination of Congenital Syphilis Project’ determining the goal of an incidence rate of ≤ 1 case per 1,000 born alive. That goal was not reached and CS remains a public health problem. 

Objective: It is a descriptive study with the purpose to identify the major reasons for high incidence rates of CS in Brazil.

Methods: The bibliography research was used to gather data for a better understanding of related matter.

Results: Brazil has health programs and grants for the pregnant mothers avoiding the vertical transmission of CS, but however the incidence rates are still high. Tracking and diagnosis are made with low-cost exam — the Venereal Disease Research Laboratory test (VDRL), and the Syphilis Treponema pallidum hemmagglutination test (TPHA) for laboratory services of Brazilian Health System (SUS). Treatment is made with a low-cost drug, the penicillin benzathine taking to the cure supposing treating appropriately. The high incidence rate of CS is an important marker of prenatal service quality. Nursing team and other healthcare workers exert an important role regarding consciousness and treatment both the pregnant and sexual partner, with low socioeconomic level and poor education. Cases must be reported to take place monitoring tasks for vertical transmission of syphilis. The northern region is the most affected with an incidence rate of 2.3 per 1,000 born alive in 2007; but this data is low according to the estimated data, demonstrating an important not reported number of cases.

Conclusion: Nursing team and all healthcare workers must up-to-dating and inform population concerning syphilis and being moved to work for decreasing this disease.
Improving disease surveillance with Electronic Integrated Disease Surveillance System (EIDSS)

A. BURDAKOV, T. Wahl
Black & Veatch, Moscow, Russian Federation

Background: Biological Threat Reduction Program implemented by Defense Threat Reduction Agency (DTRA) of the U.S. DoD to achieve the goal of improving the capacity to detect, diagnose and report bioterror attacks and potential pandemics, recognized that existing paper-based surveillance systems required improvement with timeliness, accuracy and analysis capabilities. Importance of zoonotic diseases also called for integration of animal and human surveillance. Application of rapid diagnostic methods required integration of clinical and laboratory components.

Methods: Review of 75 electronic disease surveillance systems indicated that there was no solution addressing all established requirements. In 2005 after successful prototyping, the development of Electronic Integrated Disease Surveillance System (EIDSS) began. The development is based on expertise from U.S. institutes such as CDC, WRAIR, and others (more than 75,000 man-hours of expertise incorporated). Currently deployed EIDSS version 2 is a distributed database system with a hierarchical architecture consisting of three primary levels including the Central Data Repository, regional level epidemiological offices and diagnostic laboratories, district level public health offices, and other mobile installations. The information set is synchronized amongst all EIDSS sites within a country in near-real time.

EIDSS provides flexibility, localizability and security in compliance with the international standards. Development of the core is paid for the U.S. and is free for the participating countries. EIDSS also provides electronic integration with WHO and OIE (2010).

EIDSS Architecture

Results: EIDSS is deployed and sustained at numerous sites in the Republics of Kazakhstan, Uzbekistan, Georgia and Azerbaijan. Azerbaijan, for example, has more than 150 sites with 250 plus health professionals trained and using EIDSS; the database has 2000+ real cases with daily growth to achieve full-scale operations in early 2010 and de-facto status of the national disease surveillance system.

EIDSS development budgeted for the next five years includes versions 3,4&5 accommodating new requirements and deployment in the US, FSU and globally.

EIDSS Deployment

Conclusion: EIDSS is a solution that improves the capacity to detect, diagnose and report bioterror attacks and potential pandemics and supports bioresearch. It strengthens both regional and global disease surveillance with plans for expansion into African and Asia regions and globally.
Campylobactrioses in Oppland and Hedmark counties, Norway, 1990 - November 15, 2009

V. Hasseltvedt
Sykehuset Innlandet Trust, Lillehammer, Norway

Background: Campylobactrioses, caused by Campylobacter jejuni and Campylobacter coli, are notifiable to the Norwegian Notification System for Infectious Diseases (MSIS). Whereas salmonelloses mostly are imported infections in Norway, a rather high proportion of campylobactrioses are domestically acquired. Significant risk factors comprise consumption of contaminated surface water, and imported poultry, especially chicken – as well as close contact with dogs and cats. The last two risk factors have significant odds ratios in some case control studies but are not always reproducible in other studies.

Methods: The Laboratory for Medical Microbiology, Sykehuset Innlandet Trust, Lillehammer, Norway diagnoses campylobacter using standard bacteriological cultivation/identification methods. The cases are then notified to the Norwegian Notification System for Infectious Diseases (URL: http://www.msis.no), with name and personal identification data.

Results: Campylobactrioses in Oppland and Hedmark counties by year 1990 – November 15, 2009 (year and number of cases)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>29</td>
<td>13</td>
<td>16</td>
<td>57</td>
<td>45</td>
<td>47</td>
<td>56</td>
<td>40</td>
<td>78</td>
<td>93</td>
</tr>
<tr>
<td>2000</td>
<td>107</td>
<td>108</td>
<td>104</td>
<td>139</td>
<td>128</td>
<td>144</td>
<td>195</td>
<td>162</td>
<td>218</td>
<td>168</td>
</tr>
</tbody>
</table>

The total number of cases was 2 052. Oppland had 1 033 notifications, whereas Hedmark had 1 019 cases - throughout the time span described above. Most cases occurred in July and August – whereas January, February, March and December had fewer cases notified. Approximately 34 percent of the cases were imported. The rest of the infections were domestically acquired or the place/country of acquisition of campylobactrioses remains unknown.

Conclusion: The trends in Oppland and Hedmark counties, reflect that of the Norwegian situation - in general. The increased incidence in the years 1990-2000 co-incides with very heavy rainfall in the Scandinavian setting. In some meteorological stations, in Scandinavia, the highest rainfall data, during the last 80 to 100 years, was recorded. The continuously high incidences throughout the period from 2000 to 2009 compared to 1990 through 1999 may, partly, be due to increased awareness of campylobactrioses – as well as more systematical testing for campylobacter – in the microbiological laboratory setting.
Misdiagnosis of hidden causes of respiratory infections in children

Misdiagnosis of hidden causes of respiratory infections in children


1Public Health Institution of Canton Sarajevo, Sarajevo, Bosnia and Herzegovina, 2Pediatrics Clinic Sarajevo, Sarajevo, Bosnia and Herzegovina, 3General Hospital Sarajevo, Sarajevo, Bosnia and Herzegovina, 4Pediatrics Clinic Sarajevo, Gracanica, Bosnia and Herzegovina, 5Public Health Institution of District Brcko, Brcko Maoca, Bosnia and Herzegovina, 6Clinical Medical Center Sarajevo, Sarajevo, Bosnia and Herzegovina, 7Pediatrics Clinic Tuzla, Tuzla, Bosnia and Herzegovina, 8Public Health Institution of Canton Bihac, Bihac, Bosnia and Herzegovina, 9Public Health Institution of Canton Travnik, Sarajevo, Bosnia and Herzegovina, 10Public Health Institution Travnik, Travnik, Bosnia and Herzegovina

Background: Infections of the upper respiratory tract are very common in childhood. Children are extremely susceptible to respiratory infections. Colds go away by themselves and antibiotics are used only if there is a bacterial complication. These are many other medical conditions that may possibly cause respiratory infections.

Methods: Data were collected on all children who were aged six months to six years old and had upper and lower respiratory tract infection symptoms during a similar two to three months winter period at four five of pediatrics departments from the different Canton of Bosnia and Herzegovina. The reported number of episodes of pneumonia, colds or influenza, and wheezing or whistling in the past weeks was used to identify respiratory tract infections.

Results: There was a higher proportion of one to two years aged children among case prescool patients than among control subjects in the original and current study. There were correlations between invasive pneumococcal disease and seasonal respiratory syncytial virus, influenza virus, and human metapneumovirus activity. The respective burden of each respiratory virus was also derived by dividing the two weeks aggregates by the total number of individual kids patient samples submitted for testing during the same time period.

Conclusion: An immunodeficiency disorder involving low blood gamma globulin levels which results in an increased susceptibility to infections. Serologic assays are not reliable for diagnosis. Sinusitis, serous otitis media or acute lower respiratory infections are common complications following nasopharyngitis. For respiratory infections pediatricians make misdiagnosis one of the most common types of medical mistakes. There are various ways to prevent a misdiagnosis such as seeking a second opinion or a pediatrician referral.
Studies of communication techniques in the integration of the community to monitoring the Leprosy

O. M. Suárez-Moreno
Instituto Pedro Kouri “IPK”, Ciudad de La Habana, Cuba

**Background:** The fight against leprosy is necessary to strengthen the set of actions that make the location of new cases early and identify those at risk. If you have a medical coverage only remains for us to support us in the community who will be responsible for detecting the relative, friend and neighbor to present some of the features that characterize the Leprosy. It is therefore essential that this community has cognitive level that allows recognizing the early symptoms and signs of the disease to detect in time

**Methods:** In this paper we discuss different communicative and educational methods employed to achieve increased perception Hansen's disease in their citizens. For this, we use educational lectures, training the staff of primary health care, skills assessment surveys and distribution of posters, loose and pliable with messages to the population.

**Results:** The results show the interpretation of the effects caused by these messages, based on the perception of the disease in the community where they were provided.

**Conclusion:** It shows the incorporation of new techniques in the projections of the investigation and calls for researchers on the incorporation of communities in monitoring infectious diseases.
Mycotic infections in diabetic foot

A. FATA1, S. FATA1, H. Modaghegh2, R. E. Faizì3, M. J. Najafzadeh4, M. Ghasemi3, M. Meshkat5

1Mashhad University of Medical Sciences, Mashhad, Iran, Islamic Republic of, 2Mashhad Vascular & Endovascular Surgery Research center, Mashhad, Iran, Islamic Republic of, 3Azad University of Mashhad, Mashhad, Iran, Islamic Republic of, 4University of Amsterdam, Amsterdam, Netherlands, 5Islamic Azad University, Mashhad Branch, Mashhad, Iran, Islamic Republic of

Background: Diabetic foot is the result of uncontrolled Diabetes and imperfect sanitary care which leads to Necrotic lesions, gangrene and finally amputation. Secondary Mycotic infections play a principal role to produce chronic lumpy lesions. This study was designed to investigate the incidence of fungal pathogens in diabetic foot infections, over a 2 years period at the Department of Vascular surgery and Department of Mycology, Emma Reza Hospital, Mashhad University of Medical Sciences, Mashhad, Iran.

Methods: The study population included 120 consecutive diabetic patients who were hospitalized in the Department of Vascular surgery due to Diabetic Foot during 2006-2008. A questionnaire containing demographic and clinical information was completed for each patient. Direct fresh smear with 10% KOH and fungal culture was performed for each patient.

Results: The ages of the patients were between 32 to 86 years old. Of those 86 (71.7%) individual were male and 34 (28.3%) were female. Fungal contaminations were mycologically confirmed by direct microscopy and/or culture. Direct examinations in 10% potassium hydroxide were positive for fungal element in 25 (20.8%) cases, but cultures were positive in 30(25%) cases. Candida sp. was the most predominantly isolated fungus (23 patients). Dermatophytic infection due to Trichophyton mentagrophytes was observed in 3 cases. The isolated opportunistic molds were known as Acremonium sp., Aspergillus fumigatus and Scopulariopsis sp. A significant correlation was found between infection, gender and the age of the patients (male older than 60years more frequently infected).

Conclusion: This study shows that fungal infection can be observed in about more than 20% Of Diabetic foot and cause a lesion with poor prognosis. The most common cause of Mycotic diabetic foot is different species of Candida, especially C. albicans.
Use of RAPD-PCR in diagnosis of *Tricophyton Violaceum* isolates in Iran
A. Ghalyanchi Langeroudi
Faculty of Veterinary Medicine, Tehran, Iran, Islamic Republic of

**Background:** Infection of the keratinized tissues (skin, hair and nails) in man and animals by keratinophilic fungi (dermatophytes) result in dermatophytosis (also known as tinea or ringworm). *Tricophyton Violaceum* is an anthropophilic dermatophyte in Iran. Mostly causing tinea Capitis, Tinea Corporis and Onychomycosis. As conventional laboratory procedures for the identification of dermatophytes are either slow or lack specificity, improved diagnostic methods are required. The application of nucleic acid amplification technology has made rapid and precise identification of dermatophytes possible.

**Methods:** In recent study after Isolation *Tricophyton Violaceum*, were used two arbitrarily primers (*opu13*, *P10*) in Random Amplification of polymorphic DNA (RAPD) -PCR 15 Isolates.

**Results:** It was shown that a random primer *opu13* produced bands of 0.4, 0.7, 1.3 kb and primer *p10* amplified these bands 0.3, 0.9, 1.8 kb. Results comparing of RAPD-PCR analysis and morphological study on these samples indicated that pigment isolates with primer *p10* produced 3kb band and 1.4 kb band was obtained from primer *opu13*.

**Conclusion:** Therefore it seems that RAPD-PCR using *opu13*, *P10* primers could be used in diagnosis of *Tricophyton Violaceum* by their PCR Band Pattern (Spesific Bands).
Background: Invasive mycoses in intensive care patients are commonly due to yeasts. During the past years, fungemia with non-albicans species and uncommon yeasts has gained importance. *Saccharomyces cerevisiae*, a supposedly apathogenic yeast used in human food production is indistinguishable from *Saccharomyces boulardii* which has a role in the treatment of persistent diarrhea. We present three cases of fungemia with *Saccharomyces cerevisiae*. Two of these cases occurred during treatment with *Saccharomyces boulardii*.

Methods: Case reports

Results: Cases:
(1) A 61 years old male was treated with *Saccharomyces boulardii* for diarrhea because of complicated hemicolectomy. On day 24, a septic shock with acute renal failure occurred. On this same day, *Saccharomyces cerevisiae* was isolated from three arterial blood cultures. Therapy with fluconazole for 13 days was successful.
(2) A 69 years old female who had been admitted for septic agranulocytosis, was treated with *Saccharomyces boulardii* for diarrhea. On day 15 of this therapy, a sepsis occurred and *Saccharomyces cerevisiae* was cultured from several blood specimens. Therapy with fluconazole led to defervescence and stabilisation.
(3) Seven days after the onset of *Saccharomyces* sepsis in the second case, a 76 years old female who was in intensive care after cardiopulmonary resuscitation, became septic. As the causal agent, *Saccharomyces cerevisiae* was identified in a blood culture and from the central venous line. This patient had not been treated with *Saccharomyces boulardii*. After initial application of fluconazole which turned out to have an increased MIC, therapy was changed to voriconazole and the patient improved.

Conclusion: In each case, a bloodstream infection with *Saccharomyces cerevisiae* was proven by several cultures. A causal relation to the therapy with *Saccharomyces boulardii* is plausible in two cases. In the third case, there must have been another source of infection. Given the temporal association with the second case, a transmission by health care personnel appears possible. Susceptibility testing of *Saccharomyces cerevisiae* seems necessary.

The use of probiotic agents in critically ill patients should be considered carefully.
Ringworm in Anambra State of Nigeria: Investigating the role of barbers in disease transmission  

F. Emele¹, C. A. Oyeka²  
¹Nnamdi Azikiwe University, Nnewi, Anambra, Nigeria, ²Nnamdi Azikiwe University, Awka, Anambra, Nigeria  

Background: Ringworm, infection of keratinized parts of the body by dermatophytic fungi, continues to be problem all over the world, particularly in developing countries, where poor living conditions and massive un-enlightenment prevail. Although it has no obvious fatal consequences, ringworm can be unsightly and can have far-reaching social, economic and psychological impacts on the afflicted individual. Transmission of ringworm can be by direct person to person contact, or indirectly by shared formites, including barbing equipment. In our earlier report, barbing shop was noted as the most frequently incriminated probable source of ringworm disease in Anambra State of Nigeria, and necessitated investigation on the role of barbers in the transmission of the disease.  

Methods: A total of 78 randomly selected barbers from different parts of Anambra state were recruited into this survey, during 2005 and 2007. Interviewer administered, semi-structured questionnaires were served to the barbers in order to determine their knowledge and attitudes toward ringworm infection, as well as means of decontaminating their clippers between use. Disinfectant agents used by barbers on their clippers were tested for activity against fungi.  

Results: Of 78 barbers interviewed, 74(95%) were aware that their barbing clippers could transmit ringworm infection from an infected person to others. Majority of the barbers (65 or 83%) would accept clients with scalp ringworm, but would protect subsequent clients by application of chemical agent on the barbing clipper; the most commonly applied chemical agent was methylated spirit (73%), followed by domestic bleach (37%), hydrogen peroxide (8%), among others. Evaluation of the chemical agents for fungicidal activity showed that sodium hypochlorite (domestic bleach) was the most effective clipper disinfectant, with a minimum disinfectant contact time of 5min. Flaming of clippers with methylated spirit or petrol, did not inactivate spores on clippers.  

Conclusion: Based on the results, it is recommended that the state government makes a legislation mandating barbers to properly and appropriately disinfect their clippers soon after use on each client. Search should continue for fungicidal disinfectant that would be more clipper-friendly than sodium hypochlorite.
**Background:** Azoles target the ergosterol synthesizing enzyme lanosterol 14alpha-demethylase and are a widely applied class of antifungal agents. Unfortunately azoles are generally fungistatic, and resistance to fluconazole is emerging in several fungal pathogens. In contrast to the increasing number of agents for the treatment of invasive fungal infections, discoveries of new antifungal agents with therapeutic value in dermatomycoses are reported only rare. Attention has been drawn to the antimicrobial activity of plants and their active principles due to the challenge of growing incidences of drug-resistant pathogens. Eugenol and methyl eugenol were reported to possess antimycotic properties. To further explore the antifungal activity of these compounds, in vitro studies were conducted on various Candida isolates. Insight studies to mechanism suggested that both eugenol and methyl eugenol exerts their antifungal activity by targeting sterol biosynthesis. Furthermore, it was also observed that additional methyl group to eugenol increases its antifungal activity. The observed fungicidal characteristics of both eugenol and methyl eugenol indicate that both the compounds might be promising antifungal agents defining a new class of antimycotics.

**Methods:** Attention has been drawn to the antimicrobial activity of plants and their active principles due to the challenge of growing incidences of drug-resistant pathogens. Eugenol and methyl eugenol were reported to possess antimycotic properties. To further explore the antifungal activity of these compounds, in vitro studies were conducted on various Candida isolates. Insight studies to mechanism suggested that both eugenol and methyl eugenol exerts their antifungal activity by targeting sterol biosynthesis.

**Results:** Furthermore, it was also observed that additional methyl group to eugenol increases its antifungal activity.

**Conclusion:** The observed fungicidal characteristics of both eugenol and methyl eugenol indicate that both the compounds might be promising antifungal agents defining a new class of antimycotics.
Fungal etiology in gastroenteritis. *Candida albicans* most frequent

**M. Ordoñez Smith, E. Danies Ordoñez**  
Microbiology Institute of Colombia, Bogota, Colombia

**Background:** Gastroenteritis is very common in our tropical country, Colombia. The infectious acute diarrhea (IAD) constitutes an important health problem affecting a large number of children worldwide; with mortality index of 3.2 millions per year. Fungal's incidence is not usually studied and our purpose is to investigate the frequency. This study wants to be ahead of it. Even though, there are other etiologies that causes diarrhea: as parasites, virus and bacterial enteropathogens.

**Methods:** The feces were smeared onto Sabouraud Dextrose Agar and Dermasel Agar, in order, to search fungal colonies. They were incubated at 22°C for 30 days. The research was done with 80 patients from 3 months to 75 years old, who had diarrhea for more than a week, mean of 25 days. Their feces were also studied for parasites (*Entamoeba histolytica*, *Strongyloides*, *Giardia*, *Trichuris*, *Ascaris*, etc) and enterobacterial pathogens: *Escherichia coli*, *Yersinia*, *Shigella*, *Salmonella*, *Proteus*. Virus, anaerobic and microaerophilic, *Campylobacter*, were not studied.

**Results:** This study showed as a unique etiology cause: *Candida albicans* with an incidence of 41.2% (33 of 80), *Candida no albicans* 21.2%, *Aspergillus* 5.0%, and *Penicillium* 1.2%. *Candida albicans* with parasites 8.7%, *Candida no albicans* with parasites 7.5%, *Candida albicans* and *Penicillium* 1.2%, *Candida albicans* with enteropathogens 1.2%, *Candida no albicans* with enteropathogens 6.2%, *Candida albicans* with parasites and enteropathogens 2.5%, and 1.2% (1 of 80) had: *Candida albicans* with *Penicillium* plus a parasite; *Candida albicans* with *Geotrichum* plus an enteropathogen, and *Candida no albicans* with parasites and enteropathogen bacteria.

**Conclusion:** It should be stand out that in gastroenteritis the fungal etiology must be studied. In our study, *Candida albicans* was the most comon agent found with an incidence of 41.2%. Therefore, when the enteritis has been for more than a week and the patient had an antibiotic therapy, it most be search for a fungal etiology.
The rise of Rhizopus

A. Shahzad¹, B. Nseir², D. Patel³

¹Ochsner Medical Center, Kenner, LA, USA, ²Ochsner Clinic Foundation, New Orleans, LA, USA, ³Ochsner Medical Center, Kenner, LA, USA

**Background:** As of 2007, 24 million in the US have diabetes and poor control can predispose to opportunistic infections. Mucormycosis is a rare but fatal disease that requires aggressive surgical and antifungal treatment.

**Methods:** A 21 year-old male with past medical history of uncontrolled type 1 diabetes and heroine abuse presented with three days of constant crampy abdominal pain starting in the right flank, which progressed to diffuse abdominal pain. On physical exam, the patient had a pulse of 109 bpm, with diffuse upper quadrant tenderness to palpation. He had an elevated WBC count of 15.24 K/ul, and was initially placed on broad spectrum antibiotics. Diabetic ketoacidosis was diagnosed following the initial work up revealing an elevated glucose of 361 mg/dl, bicarbonate of <5mEq/L, and an anion gap of 23. Urinalysis showed >1000mg/dl glucose and >80mg/dl ketones. CT scan and renal ultrasound showed three focal parenchymal abscesses within the right kidney.

**Results:** Using CT guidance, 2 cc's of thick greenish material was drained. Material sent showed Rhizopus species. Antibiotics were discontinued and replaced with intravenous amphotericin and oral posaconazole. Following one week of therapy, repeat CT of the abdomen revealed an increase in size of previously identified abscesses. An uncomplicated right nephrectomy was performed. Patient was then discharged home with a six week course of intravenous amphotericin B.

**Conclusion:** The mucormycosis are a class of fungi that can cause a variety of infections particularly in immunocompromised patients, those with diabetes mellitus and drug users. Diabetes mellitus has been reported in approximately 36% of the reported cases of mucormycosis since 1940, making it the most common risk factor. Ketone reductase, an enzyme found in Rhizopus organisms allow them to thrive in high glucose, acidic conditions. The infection can involve the lungs, GI tract and skin, but it is probably best known for its rhinocerebral presentation. Isolated involvement of the kidneys with mucormycosis has been reported and is thought to occur via seeding of the kidneys during an episode of fungemia. Treatment of mucormycosis involves a combination of surgical debridement of involved tissues and antifungal therapy.
Isolated cerebral Mucormycosis refractory to Amphotericin-B with good response to Posaconazole

F. Abbasi¹, M. Mardani ², S. Korooni Fardkhani ², A. Faghihi ³
¹Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of, ²Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of, ³Shiraz University of Medical University, Shiraz, Iran, Islamic Republic of

**Background:** Mucormycosis is a rare opportunistic infection, usually associated with immunocompromised states. Several conditions such as hematologic malignancy, solid organ transplantation, diabetes mellitus, corticosteroid therapy, or chemotherapy predispose patients to infection. It can produce an aggressive and sometimes fatal infection. Cerebral mucormycosis is an acute life-threatening disease. Early infiltration of the infectious agent into the central nervous system may result in septic thrombosis of the cavernous sinus, mycotic meningoencephalitis, brain infarctions as well as intracerebral and subarachnoidal hemorrhages.

**Methods:** The patient was a 46 year-old woman known case of diabetes mellitus with chief complaint of headache, fever and swelling of right posterior auricular area with erythema and hotness. Brain CT scan was performed that showed a brain abscess in right temporoparietal lobe. Smear of drained abscess showed broad nonseptated hyphae and culture result was mucoral agent. Amphotericin B was started.

**Results:** Despite several days after amphotericin B infusion, fever continued and ESR did not changed. Amphotericin B discontinued and posaconazole was started. Fever disappeared and ESR decreased and the patient was discharged with good general condition.

**Conclusion:** Isolated cerebral mucormycosis is a rare and life threatening presentation of mucormycosis. Resistant to Amphotericin-B is increasing in mucoral agents. Mocurmycosis has a good response to posaconazole.
The role of combination antifungal therapy in the treatment of invasive aspergillosis: A systematic review

**M. Garbati, F. Alasmari, I. M. TLEYJEH**

King Fahad Medical City, Riyadh, Riyadh, Saudi Arabia

**Background:** Invasive aspergillosis (IA) is associated with high mortality in patients with immunosuppression. Treatment includes use of combination antifungal agents. A systematic review of these evidences is presented.

**Methods:** Literature from MEDLINE, EMBASE, WoS, Cochrane Database and Scorpus up to October 2008 for Randomized Controlled Trials (RCT) and Cohort studies were reviewed. Assessment of eligibility and quality was done by two independent investigators. A formal meta-analysis could not be performed due to clinical between-study heterogeneity.

<table>
<thead>
<tr>
<th>Results: Reference</th>
<th>Population</th>
<th>Sample Size</th>
<th>Females N (%)</th>
<th>Age-Range or Mean (yrs)</th>
<th>Study Design</th>
<th>Treatment Combination</th>
<th>Monotherapy</th>
<th>Follow-up (Days)</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Popp et al, 1999</td>
<td>Hematologic malignancy</td>
<td>21</td>
<td>8 (38)</td>
<td>44.95</td>
<td>Cohort</td>
<td>AmB 1mg/kg/d + Itraconazole 400mg/d</td>
<td>AmB 1mg/kg/d</td>
<td>NR</td>
<td>No adjusted analysis</td>
</tr>
<tr>
<td>Marr et al, 2004</td>
<td>Hematologic malignancy</td>
<td>47</td>
<td>29 (61.7)</td>
<td>16-66</td>
<td>Cohort</td>
<td>Voriconazole 6mg/kg q12h for 1 d, then 4mg/kg q12h + Caspofungin 70mg/day 1 then 50mg/d</td>
<td>AmB 1mg/kg/d + LFAB 5mg/kg/d</td>
<td>90</td>
<td>Reduced mortality [adjusted HR 0.28, 95% CI (0.28-0.92)]</td>
</tr>
<tr>
<td>Konto yianu et al, 2005</td>
<td>Hematologic malignancy</td>
<td>179</td>
<td>112 (62.6)</td>
<td>30-66</td>
<td>Cohort</td>
<td>Lipo-AmB 5mg/kg/d + Itraconazole 200mg loading BID, then 200mg/d</td>
<td>LipoAmB 5mg/kg/d</td>
<td>85</td>
<td>No adjusted analysis</td>
</tr>
<tr>
<td>Singh et al, 2006</td>
<td>Organ transplant recipients</td>
<td>87</td>
<td>36 (41.4)</td>
<td>19-68</td>
<td>Cohort</td>
<td>Voriconazole 6mg/k q12h for 1 day, then 4mg/kg q12h + Caspofungin 70mg/day 1 then 50mg/d</td>
<td>LipoAmB 5.2mg/kg/d</td>
<td>90</td>
<td>Trend to lower mortality [adjusted HR 0.58, 95% CI (0.030-1.14)] p=0.117</td>
</tr>
<tr>
<td>Upton et al, 2007</td>
<td>Bone marrow transplant recipients</td>
<td>405</td>
<td>146 (40.7)</td>
<td>42.2</td>
<td>Cohort</td>
<td>Voriconazole + caspofungin Before 1996: AmB 0.5mg/kg/d. After 1996: LipoAmB 5mg/kg/d</td>
<td>LipoAmB 5mg/kg/d</td>
<td>90</td>
<td>Trend to higher mortality [adjusted HR 2.3, 95% CI (0.6-9.4)]</td>
</tr>
<tr>
<td>Raad et al, 2007</td>
<td>Hematologic malignancy</td>
<td>143</td>
<td>24 (16.8)</td>
<td>43.7</td>
<td>Cohort</td>
<td>HD-LPD/AmB &gt;7.5mg/kg/d + Caspofungin 70mg day 1, then 50-100mg/d</td>
<td>Posaconazole 400mg q12h or 200mg q6h or 800mg q24h</td>
<td>90</td>
<td>Better outcome [adjusted HR 4, 95% CI (1.1-14.5)]</td>
</tr>
<tr>
<td>Caillot et al, 2007</td>
<td>Hematologic malignancy</td>
<td>30</td>
<td>9 (30)</td>
<td>16-75</td>
<td>RCT</td>
<td>Lipo-AmB 3mg/kg/d + Caspofungin 70mg day1, then 50mg/d</td>
<td>LipoAmB 10mg/kg/d</td>
<td>90</td>
<td>More favorable responses (67% versus 27%) p=0.028</td>
</tr>
</tbody>
</table>

Seven studies that enrolled 822 patients were reviewed (Table). Limitations: Inclusion of patients with refractory infections and those intolerant of first-line antifungals in the same study, inconsistent definition of refractory fungal infection, inclusion of diverse host groups, and inclusion of a diverse spectrum of pathogens with different susceptibilities.

**Conclusion:** The efficacy of combination antifungal therapy for the treatment of IA is unfounded based on cumulative evidence. Rigorous randomized controlled trials are urgently needed.
Clinical study on therapeutic effect of mycocidine in treatment of ringworm in cattle

J. Akbarmehr
Islamic Azad University, Sarab, Iran, Islamic Republic of

Background: Ringworm or dermatophytosis is an infectious and zoonotic disease caused by different species of ringworm fungi. Many species of animals including humans are susceptible to ringworm infection. Cattle, horses, cats, dogs and domestic livestock are the most commonly affected animals. Lesions of ringworm is usually found on the head, muzzle, ears, neck, trunk and particularly around the eyes of infected animals. These lesions are generally circular and oval in shape. Gray and dry to red and crusty hairless patches are typical of ringworm.

This study was conducted to determine the therapeutic effect of mycocidine (plant extracted antifungal drug) in treatment of ringworm in cattle.

Methods: 150 infected cattle with skin lesions of ringworm were treated by mycocidine. Skin scales were collected by scraping of the lesion using a sterile scalpel in to a petri dish. Samples were used for direct microscopic examination and culture on sabarouds dextrose agar for isolation of ringworm fungi. All animals in this study were divided in two age groups (under 2 years old and over 2 years old). Infected animals were subjected for treatment with two times daily applications (locally and topical) of mycocidine.

Results: Our results showed that rapid and effective cure in the most affected animals occurred 4-5 weeks after use of drug. Moreover there was no significant difference in therapeutic rate of two different age groups. Overall mycocidine was effective in both age groups. %78 of cattle in over 2 years age and %81 those under 2 years age were cured completely after 5 weeks application of mycocidine.

Conclusion: In conclusion the present study revealed that mycocidine is more effective in treatment of ringworm and its application should be recommended.
Trichosporon asahii in critically ill patients
G. Mircevska
Institute of Microbiology and Parasitology, Skopje, Macedonia

Background: Trichosporon species are opportunistic pathogens, which cause rare infections but have been associated with a wide spectrum of clinical manifestations. During the last 5-month period, in our laboratory, the Trichosporon asahii isolates from ten patients have been analyzed. The aim of the study was to present our first experience in identification and final mycological diagnosis of Trichosporon asahii infections in intensive care and surgical patients treated at the University Clinics in Skopje, Macedonia. Further evaluation of microbiological features of yeasts in primarily sterile specimens, we consider as the basic challenge in our future routine practice.

Methods: Specimens from urinary and respiratory tract of ICU and surgically treated patients have been mycologically examined. All specimens were examined by standard microbiological methods. Trichosporon yeasts were preliminary identified by colony appearance. Final confirmation was performed by the use of a biochemical card of the VITEK 2 automated system (bioMerieux, France). In vitro susceptibility testing for fluconazole was performed using the E-test system (AB bioMerieux, France).

Results: All infections were associated with prior broad spectrum antibiotic therapy and most of them with intensive care unit admission (80%). A total of 19 isolates of T. asahii were detected in 1-2 clinical specimens of each of ten patients, most frequently in urine, and sputum. In 5 patients, T. asahii was isolated in more consecutive urine samples (4 in 1 pt; 3 in 2 pts; 2 in 2 pts). The main predisposing conditions were antibiotic therapy, mechanical ventilation, urethral catheterization, corticoids and surgical procedures. All strains were susceptible to fluconazole (MIC 4 mg/ml).

Conclusion: We report patients with T. asahii urinary and respiratory tract infections. To the best of our knowledge, these are the first reports of infection caused by T. asahii in our patients. T. asahii may cause invasive trichosporonosis and is an emergent pathogen in patients with immunodeficiency. Its presence in these type hosts can rarely be considered colonization, as there is an important risk of invasive infection. Therefore, in susceptible patients to develop trichosporonosis it is advisable to take into consideration this pathogen, especially in intensive care units. Microbiologists should be more aware of this opportunistic yeast pathogen and further evaluate patients’ specimens toward this species.
Fluconazole-containing antifungal therapy without surgical valve replacement for Candida endocarditis: A meta-analysis

R. Smego¹, H. Ahmad²
¹The Commonwealth Medical College, 18510, PA, USA, ²The Commonwealth Medical College, Scranton, PA, USA

Background: The treatment of Candida infective endocarditis generally involves infected valve removal accompanied by antifungal therapy with amphotericin B or a lipid-based derivative. While often used as chronic suppressive therapy in these patients, the precise role for FLU has not been established.

Methods: Meta-analysis of 64 literature cases of Candida endocarditis whose management did not include valve replacement but who received FLU, alone or concurrently or in sequence with one or more other antifungal drugs.

Results: Forty-nine (77%) patients were cured or improved, four (6%) relapsed, and 11 (17%) failed (ten of these died). Fluconazole was administered as sole antifungal therapy in 19 of the 64 (30%) patients; 11 (58%) were cured or improved. In contrast, among 45 (70%) patients who received one or more other antifungal agents in addition to FLU 38 (84%) were cured or improved ($p = 0.02$). Other antifungal agents included amphotericin B (28 cases), liposomal amphotericin B (8), amphotericin B colloidal dispersion (1), amphotericin B lipid complex (2), flucytosine [5-FC] (9), caspofungin (12), and miconazole (2). Nineteen of 22 (86%) patients with native valve infection were cured or improved compared to 13 of 19 (68%) subjects with prosthetic valve endocarditis. Twelve of 14 (86%) patients aged < 4 years were cured or improved compared to eight of 11 (73%) subjects > 60 years (note: six out of these elderly subjects had prosthetic valve infection and five of six of them had successful outcomes). There were no differences in outcome according to sex or Candida species. The mean duration of all FLU-containing treatment regimens was 116 days, for successful FLU regimens, 134 days, and for failed FLU regimens, 59 days. Among 20 patients who received FLU as chronic suppressive therapy (defined as terminal antifungal treatment for > 6 months), 19 (95%) were cured.

Conclusion: Acute treatment with fluconazole combined with amphotericin B (with or without flucytosine) followed by prolonged, perhaps indefinite fluconazole suppression is effective in patients with Candida endocarditis not undergoing valve resection.
Our experience in treatment of warts in women with Condylin and Aldara

N. Como1, D. Kraja2, M. Qato3, N. Gjermeni3, A. Kica3, K. Duraku3
1University Hospital Centre "Mother Theresa", Tirana, AL, Albania, 2Faculty of Medicine, Tirane, Albania, 3HUC, Tirane, Albania

Background: Choosing the right treatment in HPV infection is very important. Our objectives are the highlighting of therapeutic power of Condylin and Aldara in treatment of warts in women. The material consists in 130 subjects (women), with age 15-50, from years 1998-2008.

Methods: We analysed warts in women, based on the epidemiological aspect, noso-topographic variant and therapy response.

Results: Epidemiological aspect:

<table>
<thead>
<tr>
<th>Age group</th>
<th>number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-25</td>
<td>42</td>
</tr>
<tr>
<td>26-35</td>
<td>62</td>
</tr>
<tr>
<td>36-40</td>
<td>20</td>
</tr>
<tr>
<td>41-50</td>
<td>6</td>
</tr>
</tbody>
</table>

from which 86 were citizens and 44 were country women.

Immunity status:

Immuno competent 107
Immuno depressed 23 (HIV+ 19; immunosuppresor therapy 3; thyrotoxicosis 1).

Through years 1998-2002 we had 5-9 cases/year, while through years 2003-2008 we had 13-17 cases/year.

Noso-topographic variant:

<table>
<thead>
<tr>
<th>variant</th>
<th>number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>separated</td>
<td>21</td>
</tr>
<tr>
<td>accumulated</td>
<td>71</td>
</tr>
<tr>
<td>dense</td>
<td>38</td>
</tr>
</tbody>
</table>

Topographic variant:

<table>
<thead>
<tr>
<th>variant</th>
<th>number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>labia major</td>
<td>10</td>
</tr>
<tr>
<td>i.minor</td>
<td>19</td>
</tr>
<tr>
<td>clitoris</td>
<td>14</td>
</tr>
<tr>
<td>meatus vulvae</td>
<td>21</td>
</tr>
<tr>
<td>meatus urethra</td>
<td>9</td>
</tr>
<tr>
<td>perianal</td>
<td>12</td>
</tr>
<tr>
<td>rectal</td>
<td>5</td>
</tr>
<tr>
<td>fingers</td>
<td>5</td>
</tr>
<tr>
<td>breast</td>
<td>5</td>
</tr>
<tr>
<td>neck</td>
<td>7</td>
</tr>
<tr>
<td>labium inferior</td>
<td>5</td>
</tr>
</tbody>
</table>

Therapy response: We treated 102 cases with Condylin (sol. 0.5%-3.5ml) and we identified: healing in 44 cases, (1 in the first cycle; 2 in the second; 14 in the third; 20 in the fourth; 7 in the fifth cycle); improvement: 36 cases (2 in the second cycle; 18 in the third; 12 in the fourth; 4 in the fifth cycle); failure: 22 cases.

We treated 28 cases with Aldara (cream 0.5%): In 10 patients, who were treated up to 7 weeks, we identified: healing: 6 cases; (1 in the fourth cycle; 1 in the fifth; 2 in the sixth; 2 in the seventh cycle); improvement: (2 cases in the fifth cycle; 2 in the seventh); failure: 2 cases. 18 patients abandoned the therapy in the fourth cycle; (improvement 4 cases, failure 14 cases).

Conclusion: 1. HPV infections are more frequent during 2003-2008 69.23%
2. The most frequent locations were in labia minor 14.61%; meatus vulvae 16.15%; perineal 10.76%
3. Warts were more frequent in immunocopetents (82.30%)
4. The efficacy of Condylin is more evident in the third and fourth cycle 77.27%
5. The efficacy of Aldara is more evident in the sixth and seventh cycle 66.66%
6. Condylin acted faster than Aldara.
The Data on STIs/HIV/AIDS in forced migration settings in Georgia

N. Gulua
Georgia Health and Social Projects' Implementation Centre, Tbilisi, Georgia, Georgia

Background: Links between migration and vulnerability to sexually transmitted infections (STIs) including HIV/AIDS is well documented. Poverty, powerlessness, and social instability affect the spread of STIs and HIV. These conditions are characteristic of the lives of most refugees and internally displaced persons. Evidence indicates that internally displaced people in Georgia are at high risk regarding distribution of socially hazardous infection STIs and HIV/AIDS.

Methods: Our study among internally displaced people in Georgia were conducted in 28 IDP camps in Georgia. The goal of the study was identification of awareness of STIs and HIV/AIDS prevention, among internally displaced people, morbidity, living condition, income, employment, financial access barriers and affordability of health care services and problems. Interviews with the relevant policy makers and analysis of official data, revision of the existing literature.

Results: Demographic trend in the IDP population of Georgia is alarming. Significantly lower birth rates and slightly crude death rates among IDP compared to the rest of the Georgian population, which persisted over the years, has led to the erosion of the foundation of the age pyramid and subsequent demographic tree fall in IDPs. The increasing problem of STIs among IDPs has been in numbers of reports. Poor social-economic conditions of IDPs, crowded in dilapidated collective centers create a favorable environment for the spread of socially hazardous infection. IDPs, as the rest of the Georgian population, suffer from overwhelming financial access barriers to health services and face considerable poverty risk due to unexpected health expenditures. Despite being a major source of ongoing infection, these populations often stigmatized, have limited access to prevention, care and treatment services. Data shows, that IDPs have lower levels of knowledge about prevention of STIs and HIV/AIDS then other key population groups and there is evidence of HIV risk behavior.

Conclusion: Our study has revealed a high prevalence of STI symptoms and gaps in sexual health knowledge and HIV/AIDS in this displaced population. Data of socially hazardous infection (STIs and HIV/AIDS) should be disaggregated by displacement and access to prevention and treatment services for displaced persons monitored to improve universal access.
Background: The information gap on HIV/AIDS/STD among the adolescents, adults and general population including people with risk behavior is high in Bangladesh in the world. About 88% of the male's adults do not know about the prevention need and 96% female adults are also ignorant of prevention need.

Methods:
At least 80,000 sex workers operate in Bangladesh. The number of street workers and call girls may make this figure even higher than 110000 approximately 120000 truckers operate on long routs and most have unsafe sex during travel halt. Many adults and adolescents have premarital sex than is commonly believed. Many gets infection on the onset of their first day in sex. A large number of workers migrate in annually out of Bangladesh and involve in unsafe sex. There are approximately 15000 injecting drug users. Approximately 220000 units of blood are required per year of which 75 percent comes from professional donors, injecting users constitute 20% of the professional drugs. A large of 250000 street children in Bangladesh are sexually abuse.

Results: There is a deep three-fold linkage of STD with HIV/AIDS. This should be brought home to all of everywhere so that no further infection is occurred and the already infected persons are serious in effective treatment with pledge to no further. Now Bangladesh is a low prevalent area. It can be made no HIV zone if no further infection is allowed to happen. This can be done through a thrust of accurate appropriate and effective messages to all in a short time frame.

Conclusion: The government of Bangladesh on being convinced of the need of such message thrust have been pleased to accord approval to printing & distribution of 5,000,000 book all over the country.
So now is the time to transmit the message of everywhere the tools:
1)AIDS-Okal Mrityu
2)Social groups from among the community.
Subacute toxicity of *Acanthus sulphate ester*, a compound isolated from the aqueous extract of leaves of *Acanthus montanus* (Acanthaceae) in female rats

C. T. Aphrodite  
University of Yaoundé I - Cameroon, Yaoundé, CM, Cameroon

**Background:** *Acanthus montanus* (Acanthaceae) is a plant used in traditional medicine in many African countries to treat many illnesses including epilepsy, rheumatism, cough and some soil-transmitted Helminthiases. This work was carried out to study the subacute toxicity of *Acanthus Sulphate ester* in female albino rats.

**Methods:** The subacute toxicity study was carried out in female rats, after which the fractionation was done in which six compounds were obtained. Among the compounds isolated was *Acanthus Sulphate ester*. *Acanthus Sulphate ester* was given by intravenous route to 5 groups of 6 female rats at the doses of 0, 0.25, 0.5, 1, 2 mg/kg/day respectively during thirty days. During the treatment, clinical signs, food and water intake, body weight and rectal temperature of the animals were recorded daily. After thirty days of administration, glycaemia was measured, then, animals were sacrificed and blood samples collected. Different organs were isolated and weighed. Different biochemical toxicity markers were measured in serum and organ homogenates.

**Results:** Animal behaviour was not affected, except the reduced sensibility to touch which was observed at 1 and 2 mg/kg/day of *Acanthus Sulphate ester*. *Acanthus Sulphate ester* did not have a significant effect on body weight, food and water intake and rectal temperature of rats. Also, the compound did not affect the absolute and relative organ weight. Biochemical parameters (MDA, glutathione, proteins, cholesterol, creatinine levels and the activity of SOD, catalase and transaminases) were not affected by *Acanthus Sulphate ester*. Additionally, the integrity of liver and lung was intact whereas integrity of kidney was affected at 1 and 2 mg/kg/day as shown by glomerulosclerosis and the presence of crystals in distal tubes.

**Conclusion:** These results suggest that *Acanthus Sulphate* ester, obtained from the aqueous extract of *Acanthus montanus* (Acanthaceae) leaves is slightly toxic in female rats.
Genetic susceptibility factors in brucellosis

M. Rasouli¹, S. Kiany², M. Kalani², A. Moravej²
¹Shiraz University of Medical Sciences-Clinical Microbiology Research Center, Shiraz, Iran, Islamic Republic of, ²Immunology Department, Clinical Microbiology Research Center- Shiraz University of Medical Sciences, Shiraz, Iran, Islamic Republic of

Background: Brucellosis is a zoonotic disease caused by the genus *Brucella*. It is now clear that infection with *Brucella* spp promote cell-mediated immune reactions. Physicians have long been aware of the markedly different immune responses of seemingly similar individuals to the same inflammatory or infectious agents. The role of individual genetic differences as an explanation for these observations has been the subject of much speculation. Several studies have identified some polymorphisms in cytokine gene regulatory regions that correlate with inter-individual variations of cytokine production in immune response against pathogens. Hence, we tried to find any probable association of genetic factors with susceptibility to the disease.

Methods: Hundred and ninety-six patients with brucellosis and 81 healthy farmers (controls) who owned infected animals and consumed their contaminated dairy products were included in this study. IL-1B, IL-4, IL-6, IL-8, IL-10, IL-12, IL-15, IL-18, IFN-γ, TNF-α, TLR-4 and CD14 genotyping were carried out for all the subjects using PCR-RFLP and allele specific PCR (AS-PCR).

Results: Genotypes and/or alleles frequencies of IL-10 (-592A/C and -819T/C, \(P=0.034\)), IL-8 (-251A/T, \(P=0.005\)), IL-4 (-590C/T, \(P=0.034\)), IL-12 (+1188 A/C, \(P=0.01\)), IL-18 (-137G/+113T/+127C, \(P=0.000022\)), IL-18 (codon 35/3C, \(P=0.00185\)), IL-18 (-656G/-607C, \(P=0.0441\)), TNF-α (+252 A/G, \(P=0.0004\)), IFN-γ (+874 A/T, \(P=0.026\)), were significantly different between patients and the controls.

Conclusion: Based on our findings, we can consider IL-10 (-592 C and -819C), IL-8 (-251A), IL-4 (-590T), IL-12 (+118C), IL-18 (137G/+113T/+127C/-656G/-607C/codon 35/3C), TNF-α (+252G), IFN-γ (+874A) as genetic susceptibility factors for brucellosis.
Temporal trends in quality and strength of evidence of the Infectious Diseases Society of America Clinical Practice Guidelines

A. KHAN¹, S. KHAN¹, L. M. BADDOUR², I. M. TLEYJEH¹
¹KING FAHD MEDICAL CITY, RIYADH, Saudi Arabia, ²MAYO CLINIC COLLEGE OF MEDICINE, ROCHESTER, MN, USA

**Background:** The Infectious Diseases Society of America (IDSA) has been issuing clinical practice guidelines since March 1994. These guidelines have been regularly updated and revised. The objective of this study is to examine for temporal trends in the quality and strength of evidence of these guidelines since their inception until current date.

**Methods:** Recommendations were retrieved from the clinical practice guidelines issued/endorsed by IDSA between March 1994 and July 2009. Guidelines which had at least one pre-existing guideline were evaluated to see the changes between the first version and the latest one. IDSA uses the IDSA–United States Public Health Service Grading System for ranking recommendations in clinical guidelines. In this system, the letters A–E signify the strength of the recommendation for or against a preventive or therapeutic measure, and Roman numerals I–III indicate the quality of evidence supporting the recommendation. The guideline versions were compared to assess the changes in the number of recommendations and their distribution across the various classes (A–C) and the levels of evidence (I–III). The changes in recommendations ranking proportions between guideline versions are expressed as changes in relative risk. The median and inter-quartile range of the changes in relative risk is also reported.

**Results:** Out of 44 guidelines, 13 had at least one previous version as of July 2009. The number of recommendations increased in them from 1219 to 1519 (+24.6%). The mean time between the publication of a new version and the previous version was 5.8 years. Results are summarized in the table.

<table>
<thead>
<tr>
<th>Level of Evidence</th>
<th>Number of Recommendations</th>
<th>Change in Distribution of Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>First Guideline n (%)</td>
<td>Current Guideline n (%)</td>
</tr>
<tr>
<td>I</td>
<td>354 (73.5)</td>
<td>528 (76.1)</td>
</tr>
<tr>
<td>II</td>
<td>362 (90.0)</td>
<td>522 (75.0)</td>
</tr>
<tr>
<td>III</td>
<td>695 (55.8)</td>
<td>742 (58.5)</td>
</tr>
<tr>
<td></td>
<td>+61 (%)</td>
<td>+77 (%)</td>
</tr>
<tr>
<td></td>
<td>12.8%</td>
<td>2.4%</td>
</tr>
<tr>
<td></td>
<td>-47.3%</td>
<td>-1.7%</td>
</tr>
<tr>
<td></td>
<td>11.7%</td>
<td>0.7%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class of Recommendation</th>
<th>Number of Recommendations</th>
<th>Change in Distribution of Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>378 (75.8)</td>
<td>534 (38.5)</td>
</tr>
<tr>
<td>B</td>
<td>486 (42.8)</td>
<td>610 (43.8)</td>
</tr>
<tr>
<td>C</td>
<td>330 (21.8)</td>
<td>244 (17.2)</td>
</tr>
<tr>
<td></td>
<td>+156 (%)</td>
<td>+56 (%)</td>
</tr>
<tr>
<td></td>
<td>35.1%</td>
<td>25.1%</td>
</tr>
<tr>
<td></td>
<td>-24.2%</td>
<td>-23.7%</td>
</tr>
</tbody>
</table>

**Conclusion:** The increased number of recommendations in updated guidelines is supported by an equivalent increase in evidence. The majority of the guidelines continue to be based on lower level III evidence. The guidelines issued by IDSA are moving towards a more robust evidence base, but still a lot of effort and research is required to expand the evidence base of the infectious diseases clinical practice guidelines.
Phylogenetic analysis of the 56 kDa protein genes of *Orientia tsutsugamushi* in the Southwestern part of Korea

**D.-M. Kim**
Chosun University College of Medicine, Gwangju, Korea, Republic of

**Background:** Scrub typhus is an acute febrile disease caused by *Orientia tsutsugamushi* (*O. tsutsugamushi*). This study was conducted to determine which genotypes were present in the southwestern part of Korea.

**Methods:** Nested PCR targeting the *O. tsutsugamushi*-specific 56-kDa protein gene was performed with the samples of blood and eschar taken from the patients who visited Chosun University Hospital. The DNA sequences were compared with nucleotide sequences of *O. tsutsuganushi* registered in the GenBank for sequence homology analysis. Phylogenetic analysis of the isolates and some published sequences from 67 previously isolated strains were carried out by neighbor-joining method with the Clustal X software.

**Results:** Of the 69 PCR-positive samples, 61 formed clusters with Boryong strain that was previously isolated in Korea. CUH 4-6 showed a sequence homology of 100% for Kato or Omagari strains, and CUH 4-3 showed a sequence homology of 99.8% for Kato strain and formed Kato cluster. CUH4-57, CUH4-31, CUH4-142 and CUH4-324 showed Kawasaki cluster. CUH4-271 showed a sequence homology of 100% for Jecheon strain isolated in Korea and formed Karp cluster. CUH4-117 showed a homology of 99.8% for Neimeng-65 strain and Gilliam cluster.

**Conclusion:** The most common genotype of *O. tsutsugamushi* in the southwestern part of Korea was the Boryong genotype. We identified the Kato, Neimeng-65 and Kawasaki genotypes that had not been identified before in the southwestern part of Korea. Thus, the results of the present study confirm that various genotypes including the Boryong, Kato, Neimeng-65, Kawasaki and Gilliam strains are present in this area.
Differences in the clinical features according to genotypes of Orientia tsutsugamushi

D.-M. Kim1, S.-H. Lee2

1Chosun University College of Medicine, Gwangju, Korea, Republic of, 2 Seonam University College of Medicine, Namwon, Korea, Republic of

Background: Scrub typhus is an acute febrile illness caused by Orientia tsutsugamushi (O. tsutsugamushi) transmitted by bites of trombiculid mites. The aim of this study was to investigate whether there are any differences in clinical features and severity between the Boryoung and Karp genotypes.

Methods: Nested polymerase chain reactions (PCR) were performed with the blood buffy coats or eschars of patients with suspected scrub typhus who visited six hospitals from September to December 2006. We compared the clinical features and severity of illness in patients confirmed by nested PCR to have the Boryoung and Karp genotypes.

Results: Of 191 patients definitively diagnosed with scrub typhus, 168 were positive for nested PCR. Of these 168 patients, 133 were clustered as having the Boryoung genotype and 19 as having the Karp genotype. In this prospective study, the eschar detection rate was extremely high because of the thorough physical examinations carried out. Eschars and rashes were observed in 97% and 94% of the patients in the Boryoung group, but in only 73.7% and 68.4% of the patients in the Karp group, and the differences were statistically significant. However, there were no significant differences in complication rates, need for intensive care or mean lengths of hospital stay.

Conclusion: Our data indicate that the frequency of occurrence of eschars and rashes may depend on the genotype of O. tsutsugamushi.
Final Abstract Number: ISE.226
Session: International Scientific Exchange

The Examination about the treatment for the orbital complication with the sinusitis: When do you decide the operative indication?
H. Yoshinami, T. Takahashi, H. Nakada, I. W. Wada, O. Shibasaki, M. Nakasima, Y. Kasse
Saitama Medical University, Saitama, Japan

**Background:** We sometimes happen to meet the case who has orbital pain and swelling, or has a diplopia or the visual disorder with the sinusitis.

**Methods:** We had experienced many orbital complications with the sinusitis. About the orbital complications in the minority (less than 19 years old), we weighed a difference with the adult (older than 20 years old) this time. The objects examined in retrospective study for 38 orbital complications caused by sinusitis. (the 14 minority cases and 24 adult cases.) The examination items are about the affection paranasal sinus, the condition of a patient, hospitalization, and treatment.

**Results:** There were many men in both minority and adult. Except one maxillary sinus independent case in the adult, it was accepted the affection of the ethmoid sinus for all cases in the adult and the minority. It was recognized that the term of the hospitalization was more shorter in the cases of the group _,_, slight illness group in the classification of Chandler significantly than in the seriously illness group, number _,_, with the minority. However, we did not recognize significant difference for disease severity and hospitalization in the adult.

In part, as for the reason, it seems that the merger of underlying diseases such as the diabetes in adult cases and. is that antimicrobial is easy to shift by abundant bloodstream in the affected part in the infant in the one of the reasons.

In the adult, we needed the operations for five cases equal to 20% of the whole adult in group _, of the slight illness group. Even if it is slight illness group in the adult, there are a lot of poor cases for the conservative treatment. When the improvement is not provided enough however that takes conservative treatment of around 1 week, we think that the case should be enforced surgical treatment positively.

**Conclusion:** In addition to the conventional indications, we think it should be the indication of the surgery even for the light case that conservative treatment of about 1 week without the improvement.
The two cases of the persistent sinusitis with the ciliary movement imperfection after the endoscopic sinus surgery that have improved by the Caldwell Luc surgery

T. Takahashi, H. Yoshinami, H. Nakada, I. W. Wada, O. Shibasaki, M. Nakasima, Y. Kasse
Saitama Medical University, Saitama, Japan

Background: We reported that we experienced the two cases of the persistent chronic maxillary sinusitis after the endonasal sinus surgery (ESS) had surprisingly improved by the Caldwell Luc surgery. 

Methods: Case 1 66 year-old woman
Chief complaint: purulent nasal discharge
Existing history: She had continued to have purulent nasal discharge having cured in the commencement of the practice clinic. Then she came to our institution, the department of the otolaryngology, Saitama Medical University, January, 2007.
She was diagnosed the right fungal maxillary sinusitis by CT image. February 2007, we performed the ESS to open the right maxillary sinus. After the ESS, it was recognized the purulent pooling liquid ware at the floor of the maxillary sinus and we tried conservative treatment in about two years, but it did not improve. She was performed the radical operation Caldwell Luc surgery. Then her nasal symptom had improved.

Case 2 76 year-old woman
Chief complaint: consistent pururent post nasal discharge
Existing history: She continued the purulent post nasal discharge though she was cured taking macrolide antibiotics. December 2005, she came to our institution. Under diagnosed the both maxillary sinusitis, she took the both ESS to open the osteomeatal complex, but it did not improve after ESS. December 2008, she took the Caldwell Luc surgery. Then her symptom had improved.

Results: These 2 cases resistant to the ESS took the Caldwell Luc surgery and extracted a morbid mucous membrane and then these symptoms have healed. There are persistent maxillary sinusitis that cannot be treated with the ESS. Some of them have the local mucous membrane disorder with the ciliary movement imperfection.

Conclusion: We thought there are some cases necessary to extract a morbid mucous membrane however improve the ventilation, and the excretion of the sinus, even now when an operation in the ESS became the mainstream.
Orphans turned entrepreneurs: A case masters of Drum Rakai District

**J. BASHIR**
MAKERERRE UNIVERSITY, KAMPALA, Uganda

**Background:** Following the havoc wrecked by HIV/AIDS in Rakai district since, government and NGOs have made varied responses to address the pandemic. Children orphaned since the 1980s attracted both sympathy and empathy yet very few turned around their misfortune to opportunity. This paper will explore the experiences of a unique group of youth. Five of them orphaned to HIV/Aids in the 1980s but held on to a skill--druming-- passed on by their parents. They went ahead to recruit and train other orphans and the number is now 74 and they are called Masters of drum. They collectively prepare performances to raise tuition fees for each other at school.

**Methods:** Community awareness
Entertainments
Conferences in schools

**Results:** Through these performance the group raise tuition for the children to go to school. Performances are used as a channel for HIV/AIDS awareness.
Entertainment where infected and others people come to enjoy themselves.

**Conclusion:** It is viewed that sharing the experiences (successes and Challenges) of the Masters of Drum would be advisory to policy makers, donors and implementers of projects concerning those affected by HIV/AIDS.
Antibacterial activity of *Punica granatum* extract against bacteria isolated from infected burn wounds and comparison with selective antibiotics in-vitro

M. M. Attarpour Yazdi  
Shahed University, Faculty of Medicine, Tehran, Iran, Islamic Republic of

**Background:** Burns are suitable for antibiotics resistant infections. Thus search for effective drugs against these problems is necessary. Medical herbs with anti microbial activity have always been important in traditional medicine. The aims of this study was to determine the antibacterial activity of hydro extract from fruit of *Punica granatum* against bacteria isolated from infected burns and their comparison with selective antibiotics in vitro.

**Methods:** At first a sample of hydro extract of fruit of *Punica granatum* was prepare and then its antibacterial activity against 2 bacterial isolates obtained from 100 samples of infected burns was tested for the determination of MIC(minimum inhibitory concentration) using well diffusion and agar serial dilution assays. Also the antibacterial activity of 6 antibiotics (Amikacin, Ceftazidime, Ciprofloxacin, Imipenem, Penicillin and Vancomycin) was tested by the disk diffusion method.

**Results:** Statistical methods were useing to analyze the data. The results demonstrated that the *Punica granatum* hydro extract been effective against all of 80 *Pseudomonas aeruginosa* with MIC=20mg/ml and had not been effective against 20 *Staphylococcus aureus*. *Pseudomonades* isolated were resistant to Imipenem (10%), Amikacin (40%) and Ceftazidime (42.5%). *Staphylococci* isolated were sensitive to Penicillin (5%), Ciprofloxacin (60%) and Vancomycin(100%).

**Conclusion:** This study demonstrates that a hydro extract of *Punica granatum* have excellent anti bacterial activity against *P.aeruginosa* isolated from infected burn wounds and its effect is even better than selective antibiotic. Further investigations will be necessary.
Kimura disease in an 18 year-old-man, a case report
F. Abbasi1, S. Aminiafshar2, M. Khalili-azad2
1Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of, 2Shaheed Beheshti Medical University, Tehran, Iran, Islamic Republic of

**Background:** Kimura disease is a rare idiopathic chronic inflammatory disease, characterized by subcutaneous nodular lesions in the head and neck area. It is an indolent chronic inflammatory disease common in Asians and characterized by angiolymphoid proliferation with eosinophil infiltration, peripheral blood eosinophilia and elevated serum immunoglobulin E levels. The clinical course of the disease is thought to be benign

**Methods:** The patient was an 18 year-old man with bilateral inguinal masses. In physical examination no significant finding was detected except inguinal lymphadenopathy. In laboratory evaluation Wright, 2ME, coomb’s wright, HIV antibody (Ab), anti toxoplasma Ab, anti EBV Ab, anti CMV Ab and CRP were negative.

**Results:** Lymph node biopsy was performed that showed Kimura disease.

**Conclusion:** Kimura disease should be considered in patients with lymphadenopathy. Surgical excision and pathological study is necessary for diagnosis.
Characteristics of dermatoses on strongly pigmented skin

S. Schmidt
Bundeswehr Medical Office, Munich, Germany

Background:
This paper focuses on the clinical characteristics of dermatoses on strongly pigmented skin and the difficulties encountered by differential diagnosis in evaluating skin diseases.

Methods: Descriptive analysis

Results: Due to the growing influx of migrants from regions which are ethnologically, socio-economically and climatically different from Central Europe, dermatologists are increasingly confronted with patients with strongly pigmented skin. Ethnic factors, socio-economic conditions in the country of origin, climate, nutrition and even pre-treatment can distort the picture of the original disease. In addition to new clinical aspects of ubiquitous skin diseases, dermatologists should also reckon with exotic diseases. Under the influence of ultraviolet radiation, which induces pigmentation, melanosome complexes are increasingly developed within melanocytes. The absolute number of melanocytes is not an indicator of racial differences.

Conclusion: The clinical picture of a skin disease, e.g. measles, is different when it is encountered on strongly pigmented skin. A fair-skinned person from Central Europe has far fewer melanosome complexes than a black person has.
Genetic polymorphism of immune-response gene (interferon gamma) may mediate resistance in Sahiwal cattle for tick infestation
M. E. Babar, M. Javed, A. Nadeem, R. Jabeen
Institute of Biochemistry & Biotechnology, University of Veterinary & Animal Sciences, Lahore, Pakistan, Pakistan

Background: Genetic variability in cattle in its response to a wide range of infectious diseases can help in the enormous task of selecting resistant animals for future breeding. Infectious disease challenges from viruses, bacteria, acto and endoparasites need strong immune response for an animal to survive. The Sahiwal breed and its crosses have been used extensively for breed improvement programs in various parts of the world as they are both relatively good milk yielder and have good tolerance to harsh climates. Tick-resistance (Boophilus microplus) is another important feature of this breed and Sahiwal crosses are resistant to the tick infestation.

Methods: Keeping in view the variation of immune response as genetic, this study aimed to explore interferon gamma (IFNG) gene in Sahiwal cattle to identify the SNP and validate the potential markers of the IFN-gene associated with tick resistance. We examined the whole portion of bovine interferon gamma (BoIFNG) and sequenced its all four axon and three introns.

Results: Some novel variants were identified by comparing the PCR amplicon of two cattle breeds (Sahiwal and Friesian). The Single nucleotide polymorphisms were found in functionally important region (axon 1 and axon 2). A G-T transversion in the coding region (axon 1) causes Gly to Val exchange in final protein product of gene. Another A-T Transversion in coding region (axon 2) was found silent.

Conclusion: These SNPs will be useful in association studies of population (Composite/segregating) resulting from crosses of tick resistant (Bos Indicus) and tick susceptible (Bos Taurus) species of cattle.
Study and identification of three *Bacillus* probiotics strains found in mice intestine
C. Wang¹, Y. Tan¹, G. Dai², J. Wu³
¹Zhengzhou University, Zhengzhou, CN, China, ²zhengzhou University, Zhengzhou, Henan, China, ³Zhengzhuo University, Zhengzhou, CN, China

**Background:** Probiotics can improve the balance of microorganism in intestines, and generates a beneficial effect on host health. It can inhibit the growth of many malignant bacteria and improve the organismic health and productive performance, which can replace the partial use of antibiotics. So probiotics are going to be the focal point for avoiding issues such as drug resistance and double infection caused by abuse of antibiotics. Thus the research was carried out to get and identify *Bacillus* which could be used as anti-infective probiotics in livestock breeding.

**Methods:** The high temperature and some other restrictive conditions were used to screen some *Bacillus* strains. Then the bacterial culture was added to forage, which was used to feed chicken, by which the *Bacillus* strains’ growth-promoting capacity were evaluated. Physiological characteristics were also inspected. Inhibition zone test was applied to study the bacterial growth inhibition ability of these *Bacillus* strains. Finally morphological observation, physiological biochemical test and 16S rDNA sequence analysis were done to identify these *Bacillus* strains.

**Results:** 3 *Bacillus* strains were screened from healthy fresh mice intestine feces. Those strains had excellent property of probiotics and stability. When added in the chicken forage, the growth rate was accelerated 14% to 16% compared with the blank control row. Simultaneously the diarrhea rates were all reduced at least 40%. These 3 strains also were stable physiologically, which had resistance of high temperature, acid resistance, bile salt, pepsin and trypsin. These *Bacillus* could all inhibit the growth of some bacteria, including *Escherichia coli*, *Staphylococcus aureus* and *Salmonella typhi*, which are the popular pathogenic bacteria causing some deseases such as diarrhea, purulent infection and typhoid. Based on the physiological biochemical test and 16S rDNA sequence analysis, 3 *Bacillus* strain were all indentified to *Bacillus licheniformis*, as is a known probiotic used in many probiotics products.

**Conclusion:** These 3 new obtained *Bacillus licheniformis* had the capacity to be used as probiotics. For their bacterial inhibition, they could take the place of some antibiotics to prevent bacterial infection in the livestock production to avoid double infection and drug resistance caused by abuse of antibiotics.
Background: To evaluate the antibacterial effect of 12 plant essential (volatile) and 6 plant fixed oils on the growth of MRSA and Extended-Spectrum Beta-Lactamase (ESBL)-producing Klebsiellae.

Methods: The tested oils were screened against different isolates of methicillin-resistant Staphylococcus aureus (MRSA: 1, 2, 3, 4, 5 and 6) and different isolates of ESBL-Klebsiella (Klebsiella Pneumonia, Klebsiella oxytoca, Klebsiella rhinoscleromatis and Klebsiella ornithiolytica) using disc diffusion method. MIC of the most active oils were tested. The toxic effect of the oils were tested.

Results: Eight out of twelve essential oils tested (lavender, peppermint, anise, clove, olibanum, pine, rose and lemon oils) and four out of six fixed oils namely almond, castor, cactus and black seed oils showed antibacterial activity against the growth of some Gram positive and Gram negative bacteria under test. Mustard, linseed, sesame, fennel, caraway and cumin oils did not show any antibacterial activity. The most active oils against the Gram positive and Gram negative bacteria used were lavender and pine oils, whereas the black seed oil proved to be the most active fixed oil used only against MRSA. Almond and castor oils showed the least inhibitory effect against the tested bacteria. Pine, lavender and clove oils respectively showed a significant inhibitory effect against Gram negative bacteria used, whereas, black seed and lavender oils showed a significant inhibitory effect on the growth of MRSA. Upon testing the toxicity of the most promising oils, there was a significant increase in the body weight gain in rats treated with the pine oil, no significant changes in the body weight gain in rats treated with lavender oil, peppermint oil and blackseed oil. A significant increase in the serum glucose, blood urea nitrogen and alkaline phosphatase concentrations in the pine, lavender, peppermint oils treated rats and a significant decrease in cholesterol, aspartate aminotransferases (SGOP-AST), triglyceride, uric acid and _-glutamyltranspeptidase (_-GT) concentrations in the plasma of pine, lavender, peppermint and blackseed oils treated rats were detected.

Conclusion: Majority of the tested oils showed antibacterial effect against the tested bacteria. Pine, lavender, peppermint and blackseed oils are a good source of antibacterial agents against MRSA and Extended-Spectrum Beta-Lactamase (ESBL)-producing Klebsiellae.
Immunomodulatory effects of *Khaya grandifoliola* (meliaceae), *Entada africana* (Mimosaceae) and *Xylopia phloiodora* (Annonaceae) CH2CL2/CH3OH bark extracts on rat peritoneal macrophages

**V. B. owona ayissi**  
University of Yaounde I, Yaounde, Cameroon

**Background:** The chemotactic and phagocytic activities of macrophages are very essential as a first line defense of living organisms against infectious agents. *In vitro* immunomodulatory activities of CH2CL2/CH3OH extracts of *K. grandifoliola*, *E. africana* and *X. phloiodora* on rat immune system was investigated.

**Methods:** The appropriate conditions for cell suspension in the laboratory were assayed. Studies on chemotactic and phagocytic activities of different concentrations (0.01, 0.1, 1, 10 and 100 µg/ml) of the plant extracts were done using the saccharomyces cerevisiae model.

**Results:** It was observed that macrophages used in these studies can suspend better in DMEM medium for 6h with significant viability (92.48±0.487%). In terms of immunostimulation, *K. grandifoliola* induced the most efficient activity on both chemotactic (EC50=0.33±0.06 µg/ml) and phagocytic activity with EC50 of 0.03±0.25, 0.081±0.78 and 0.079±0.65 µg/ml respectively for NADH/Oxydase activity; production of H2O2 and NO. *E. africana* was the most efficient in term of acid phosphatase induction (EC50 = 0.487±0.26 µg/ml). Concerning down regulation of macrophage functions, *X. phloiodora* decreased production of H2O2 at 10 and 100 µg/ml.

**Conclusion:** Based on the above findings, these plant extracts could be useful in the strengthening of the immune system.
Adherence to guidelines for management of severe sepsis and septic shock among clinicians at Dr. Pablo O. Torre Memorial Hospital between June 2008 and May 2009 and its effect on patient outcome

M. Cabalatungan, R. R. Wee
Dr. Pablo O. Torre Memorial Hospital (Riverside Medical Center), Bacolod City, Negros Occidental, Philippines

Background: Despite advancements in diagnoses and management, sepsis, severe sepsis and septic shock still account for the second most common cause of death in the country. The latest practice guidelines released in 2008 hope to significantly reduce mortality.

Methods: This is a retrospective and analytical study. During the study period, patients who met the inclusion criteria were included. A checklist, composed of the recommended guidelines in outline form, the diagnostic criteria, patient's data and management outcomes was used. The main outcome measure was compliance to the 6-hour and 24-hour bundles. The secondary outcomes were length of hospital stay and hospital mortality. Likert scale, student t-test and Chi-square two-way test were used for statistical analysis.

Results: A total 265 patients were identified during the study period. After a series of exclusion, 71 adult patients were left for analysis. Data were analyzed and it was found out that clinicians at DPOTMH were non-adherent to the guidelines. Adherence rates to 6-hour and 24-hour bundles were only 13% and 54% respectively. However, there was no significant difference between the compliant and non-compliant groups in terms of length of hospital stay and hospital mortality.

Conclusion: Practicing clinicians at DPOTMH were non-adherent to guidelines during the study period. The major drawback was the lack of recommended tasks such as serum lactate and ScvO2/SvO2 measurements, and activated protein C, in the local setting. An all-out information drive among clinicians and residents may be done aggressively to improve awareness to these guidelines. Efforts must be made in addressing the issue on unavailability of certain tasks mentioned to achieve full compliance.
Cardiovascular involvement in Kawasaki's syndrome
R. NIKO1, A. koja2, R. Petrela3, G. Kuli1, E. Foto4, H. Hoxha4

1University hospital center "Mother Thearesa", Tirana, Albania, 2University Hospital Centre "Mother Theresa", Tirana, Albania, 3University Hospital Center Mother Theresa Tirana, Albania, Tirana, Albania, 4University hospital center "Mother Theresa", Tirana, Albania

Background: Cardiovascular system involvement in Kawasaki’s syndrom is the most significant long term sequelae, like coronary artery aneurysm, myocardial dysfunction, pericardial effusion, mitral and aortic valve involvement, atrio-ventricular block etc.

Aim. To review the cardiovascular involvement in Kawasaki’s syndrom

Methods: All the childrens infected by Kawasaki’s syndrom hospitalised in our pediatric hospital are enrolled in this study. Clinical features, physical examination, laboratory tests including CRP,ESR, hematocrit, thrombocit, electrocardiogram, chest X-ray and especially echocardiogram were analyzed for all patients.

A coronary artery is classified as abnormal if
- the internal diameter is greater than 3mm in children younger than 5 years or 4mm in children 5 years of age or older,
- the coronary artery lumen is irregular.

All patients with Kawasaki’s syndrom were treated with immunoglobulin for 5 days associated with aspirin.

For all patients the first cardiac examination was made in the first 10 days of the illness. Patients with cardiac touch was systematically searched every 2 week during the first 2 months and then every 3 months during the first year after disease.

Results: 13 children were hospitalised with Kawasaki’s syndrom during the period January 2000-December 2008. The mean age 2.8 years (range 11mouth-5years) 8 male, 5 female. 2 patient (age 2 year –male and 4year -female)were diagnosed with left ventricular dysfunction with cardiomegaly(FS=23% and 24%).

1patient(age 11mouth-male)had a small aneurysm fusiform of the right coronary artery. We have not had any case myocarditis and pericarditis with or without effusion, or AV block.

Left ventricular function was normalized after 4-5 week and the aneurism after 3 months. We have used expect immunoglobulin, aspirin for 2 cases with left ventricular dysfunction for about 3 months and in case with aneurism of the coronary for 6 months after the onset of disease.

Conclusion:
Cardiovascular involvement is the most serious complication of Kawasaki’s Disease; the most frequent left ventricular dysfunction and aneurism of the coronary artery.
Immune effect and tissue repairer of La Formula De Marco in patients with infected ischaemic Diabetic Foot

M. Mahia
Instituto Nacional de Angiología, Ciudad de La Habana, Cuba

Background: Formula De Marco is a chemical compound manufactured through the combination of Procaine-HCl, polyvynylpyrrolidone and vitamin complex, which has succeeded in the management to restore to health of the diabetic's lower extremity wounds, a condition called “diabetic foot”. This beneficial effect may be related to its immunomodulating effect in the tissue regeneration. It is known that immunodepression is one of the main causes of infection as well as vascular complications in diabetic patients. To assess the efficacy of the Formula De Marco to improve the immune system in patients with infected ischaemic Diabetic Foot.

Methods: Controlled randomized clinical trial of Formula De Marco versus Formula De Marco plus conventional therapy was performed in 25 patients with a diabetic foot, characterized by leg ischaemia and local infection. Formula De Marco (0.15/mL i.m.) was administered daily during ten days and then twice a week for six weeks. Were studied 25 patients of the both sex, feminine and masculine with ages among 40 and 75 years. 12 patients were found within of the group that received Formula De Marco and 13 patients in the other group that received Formula De Marco plus conventional therapy. The following parameters were studied before and after the treatment period: blood glucose, leukocyte phagocytic index and microbicidal activity, serum IgG concentration and delayed cutaneous hypersensitivity. Data obtained before and after treatment were compared within each treatment group. Differences were considered statistically significant when p < 0.05.

Results: Mean values of leukocyte phagocytic index and microbicidal activity showed a significant. 50 % of patients in la Formula De Marco group changed from the non-responder to the responder condition in the cutaneous hypersensitive test in this group and 80 % of patients in the Formula De Marco group no suffering an amputation of lower extremity.

Conclusion: Suggest an improvement of the function of T lymphocytes in those patients, who received Formula De Marco, has an immunomodulating effect and as tissue repairer in patients with lower extremity wounds or diabetic foot.
Background: Microalbuminuria is associated to different pathology as renal diseases, micro and macroangiopathy, proliferative diabetic retinopathy, cardiovascular and cerebro vascular diseases that show an increase in the infection and mortality. Cell-O-Gen is a chemical compound manufactured with beneficial effect of the tissue regeneration. The objective was evaluate the therapy effect of Cell-O-Gen on the microalbuminuria in patients with isquemic diabetic foot.

Methods: An open and controlled randomized clinical trial of Cell-O-Gen versus Cell-O-Gen plus conventional therapy was performed in 60 patients carrier of isquemic diabetic foot who had present increase level of the microalbuminuria. The patients were divided into two groups: one group was treaty with Cell-O-Gen only and another group was treaty with Cell-O-Gen plus conventional therapy 0.15/mL i.m. of the Cell-O-Gen was administered daily during ten days and them twice a week for six weeks. The following parameters were studied before and after the treatment period: determination of albumin excretion and creatinin in urine, and determination of serum creatinin and the glomerular filtered. Determination were carried out before and after the treatment. Statistical analysis was assign of the Pearson correlation coefficient and Sperman, t-student and Wilcoxon Test for couplet sample.

Results: Microalbuminuria decrease statistical significant was obtain This results were bigger in woman than man.

Conclusion: We conclude that Cell-O-Gen therapy decrease the microalbuminuria level in patients with isquemic diabetic foot.
Evaluation of viral myocarditis in children

A. Bajraktarevic¹, Z. Mulalic¹, A. Skopljak¹, S. Trminic¹, A. Djurdjevic Djulepa², Z. Begic³, Z. Jatic⁴, L. Sporisevic⁵, I. Suljevic⁶, M. Babic⁶, N. Granov⁷

¹Public Health Institution of Canton Sarajevo, Sarajevo, Bosnia and Herzegovina, ²General Hospital Sarajevo, Sarajevo, Bosnia and Herzegovina, ³Pediatrics Clinic Sarajevo, Sarajevo, Bosnia and Herzegovina, ⁴Medical faculty Sarajevo, Sarajevo, Bosnia and Herzegovina, ⁵First Medical Aid, Sarajevo, Bosnia and Herzegovina, ⁶Clinical Medical Center Sarajevo, Sarajevo, Bosnia and Herzegovina, ⁷Institute for Cardiology, Sarajevo, Bosnia and Herzegovina

Background: The causes of myocarditis are diverse and include infectious, toxic, and autoimmune etiologies. The clinical presentation of myocarditis in children differs from that in adults; children often have a more fulminant presentation. The goal of medical therapy is to support the heart function so that adequate blood circulation is maintained.

Aims: The diagnostic approach for a child with suspected myocarditis includes strategies to both aid in establishing the diagnosis and rule out disease processes that may mimic myocarditis.

Methods: Fifty kids patients, (mean age 3.9 years, range, 1–16 years) evaluated for viral myocarditis from January 1995 to October 2009 in Bosnian Children Cardiology Departments. Heart rate and rhythm require monitoring. Arrhythmias are a significant life-threatening complication of myocarditis. Use of polymerase chain reaction (PCR) and in situ hybridization has increased the sensitivity for diagnosing viral myocarditis.

Results: The virus most often associated with myocarditis is coxsackievirus B. But adenovirus, parvovirus B19, echovirus, influenza virus, Epstein-Barr virus and rubella virus are other viral causes of myocarditis. There were 39 cases of definite viral myocarditis and 11 cases of probable viral myocarditis. The age distribution was nonnormal, with peaks among children 4 years and 13 years of age. CPK-MB is elevated in 25%. SGOT and LDH may be elevated. Discussion: Myocarditis can be mild and cause virtually no noticeable symptoms. Possible surgical treatments include a pacemaker or ventricular assist device.

Conclusion: Acute myocarditis is one of the most challenging diagnosis in cardiology. If the child does not have any signs or symptoms, he may be given an anti-inflammatory or other medication and told to rest and limit salt in his diet. If the child has symptoms or shows signs of heart failure, he should be taken to the hospital immediately. An electrocardiogram can also give helpful clues if the diagnosis is suspected; however, the findings may be non-specific.
Antiviral activity of *Lepidium meyenii* (Maca) against human influenza virus  

**J. del Valle**¹, L. del Valle², L. Alzamora³, T. Pumarola⁴  
¹Universidad Peruana de Ciencias Aplicadas (UPC) e Instituto de Investigación Nutricional (IIN) , PERU, PE, Peru, ²Universidad Politecnica de Catalunya, Spain, SP, Spain, ³Universidad Nacional Mayor de San Marcos, PERU, PE, Peru, ⁴Hospital Clinic de Barcelona, SPAIN, ES, Spain

**Background:** *Lepidium meyenii* (Maca) is a Peruvian Andean plant. The nutritional-medicinal value of Maca has not only a recorded use in folk medicine for centuries, but has been shown to have multiple beneficial biological effects on a scientific level. Antioxidant, antitumor, anticarcinogenic and anti-inflammatory potential have been attributed to Maca.

**Methods:** In this study, we report a more relevant antiviral activity concerns the reduction of viral load in MDCK-infected cells with influenza A and B viruses. Methanolic extracts of Maca were tested for anti-influenza (Flu A and Flu B) effects.

**Results:** The methanol extract of the Maca inhibited strongly the Flu-induced cytopathic effects with low cytotoxicity, and the viral load was reduced by inhibition of the viral growth in MDCK-infected cells. Maca contain potent inhibitors of Flu A and Flu B with selectivity index (CC50/IC50) of 157.4 and 110.5, respectively.

**Conclusion:** In conclusion, Maca have in-vitro antiviral activity against Flu A and B viruses and it represent a therapeutic benefit potential.
Molecular identification and sequencing of a gene encoding mannose binding protein in an Iranian isolate of Acanthamoeba palestinensis as an agent of amoebic keratitis

M. niyyati, S. Rezaei, Z. Babaei, M. Rezaeian
Tehran University of Medical Sciences, tehran, Iran, Islamic Republic of

Background: Pathogenic Acanthamoeba strains such as Acanthamoeba palestinensis (T2 genotype) can lead to Acanthamoeba keratitis. This species is one of the known causative agents of Amoebic Keratitis in Iran. The main pathogenic factor responsible for developing this sight threatening disease is Mannose Binding Protein (MBP). Characterization of MBP gene can pave the way for developing better therapeutic and diagnostic methods by targeting the gene as well as development of novel immunization techniques. The latter plays a key role in preventive strategies amongst high risk populations such as contact lens wearers.

Methods: A. palestinensis isolated from a keratitis patient referred to the Department of Parasitology and Mycology, School of Public Health, Tehran University of Medical Sciences was used as our sample. Total genomic DNA was extracted by modified phenol-chlorophorm method. PCR amplification of the gene encoding MBP was performed using a pair of specific primers designed for a part of the gene, based on available MBP gene sequence from Gene Data Bank. The PCR product was then sliced from the agarose gel, purified by Qiagen kit and submitted for sequencing to MWG-Germany.

The sequence of MBP gene fragment were then submitted to the Gene data bank.

Results: A 900 bp PCR product was recovered after PCR reaction using UV transilluminator. Sequence analysis of the purified PCR product revealed a gene with 943 nucleotides. Homology analysis of the obtained sequence using Basic Local Alignment Search Tool (BLAST) from the Gene Data Bank (NCBI, NIH) showed a significant similarity with the available MBP gene registered in the Gene Data bank (Accession numbers: EU363513, AY604039). This fragment encodes a protein with 148 amino acids. Three introns were identified within the amplified fragment. The data of this fragment has been registered with the Gene Data Bank, under the following accession number for public access: EU678895. Amino acid sequence analysis showed a large content of serine, and histidine as the least frequent aminoacid in this fragment.

Conclusion: Identification and sequencing of MBP gene, the pathogenic factor responsible for clinical manifestation of amebic keratitis, is the first grounding step towards development of more efficient therapeutic, diagnostic and novel immunization techniques for population at risk.
Larva control: An effective means of preventing the spread of malaria in densely populated communities

I. Bakare
MAIDS CLUB OF NIGERIA [MAIDS], Ibadan, Nigeria

**Background:** Densely populated communities are faced with challenges of mosquitoes’ breeding places such as gutters, dams, bushes and unkempt surroundings. The larva finds host in all the places listed above, and proactive steps are needed to destroy these hideouts which will hinder the multiplication of the larva; and ultimately reduce the number of mosquitoes produced.

**Malaria Program for Pregnant Women by MAIDS, Ibadan, Nigeria**

**Methods:** 2 communities (Adifase and Araromi) in Ibadan were reached out to for malaria control campaign. Our target audience includes pregnant women, market women, community leaders and youths. The aim of the intervention is to enlighten the target audience on the need for maintaining clean and hygienic environment, as an important strategy in malaria vector control initiative. The participants were taken through the benefits of environmental management by using chemicals commercially produced for treating stagnant waters and breeding spots of mosquitoes. Importance of bush clearing was also stressed. A commercial pesticide *Pestoff* was demonstrated for the beneficiaries to see its efficacy. Sample of stagnant water containing larvae was put into a transparent jar, and 5ml of *Pestoff* was added to it in order to kill the larvae. In less than 5 minutes, the active movements of the larvae in the jar were seen to reduce and by the time we sieve the water, all the larvae in it were dead.

In addition to the above, factory-treated bed nets and self-treated ones were given to beneficiaries to prevent mosquito bites in homes. How to treat the self-treated nets was also demonstrated at the 2 programs.

**Treatment of Mosquito nets**

**Results:** Our follow up visits to these two communities revealed that adrehence to the larva control strategy helps a lot in curtailing the multiplication of mosquitoes. To this end, it was evident that use of chemicals to treat the environment and clearing of bushes will go a long way at actualizing the Roll Back Malaria (RBM) initiative.

**Conclusion:** Future programs will emphasize the importance of larva control in preventing the spread of malaria.
Background: The most possible approach for the discovery/development of new antimalarial agent is to search for compounds from plants empirically used for treatment of malaria. Thus, the present work assessed the potential antiplasmodial properties of methanol extract of the root-bark of *Securidaca longepedunculata* (a plant used in Hausa ethnomedicine for treatment of malaria).

Methods: The preferable solvent used by the local people is mostly water and/or local gin; therefore, the extraction design was based on that fact. 100 g of the root bark of *Securidaca longepedunculata* was extracted with 70 % methanol using maceration technique. The potential antiplasmodial property of the extract was evaluated against chloroquine sensitive *Plasmodium berghei* using early, established and residual malaria infection tests *in vivo* in Swiss albino mice, at a dose range of 1–4 mgkg-1day-1 orally for four days; chloroquine at 5 mgkg-1day-1 was used as reference drug for the early and the established infections tests, whereas pyrimethamine at 1.5 mgkg-1day-1 was used as positive reference drug for the residual infection test.

Results: The results of the study revealed that at a dose of 4 mgkg-1day-1, the extract demonstrated a significant chemosuppressive effects ($P< 0.05$) by inhibiting the growth of the parasites for up to 94.0 % and 93 % in the early and established tests respectively when compared with the reference drug, chloroquine (5 mgkg-1day-1) which produced 96 % suppressive effect. The extract also exerted a repository activity at the same dose by causing a significant ($P< 0.05$) chemoprophylactic effect of 90.4 % similar to the reference drug, pyrimethamine (1.5 mgkg-1day-1), which exerted prophylactic effect of 93 %. Thin layer chromatographic analysis of the extract revealed the presence of stilbenoids, steroids, sesquiterpenoids and triterpenoids compounds.

Conclusion: Antiplasmodial screening of plants has implicated alkaloids, terpenoids and flavonoids for such activity. This kind of compounds were found to be present in the extract studied and could therefore be responsible for the observed antiplasmodial activities of the extract. We therefore suggest that *S. longepedunculata* should be exploited for possible development of yet another antimalarial agent(s).
The emerging and the spread of the fifth malaria Plasmodium pathogenic for humans: 
Plasmodium knowlesi

R. Manfredi
University of Bologna, Bologna, Italy

Background: Based on the most recent evidences regarding the role of some malaria Plasmodia with have primates as natural reservoirs, the Authors focused their attention on the emerging species Plasmodium knowlesi.

Methods: P. knowlesi infectious foci were identified in the past decade in Malaysia, States of Sarawak-Sabah (Malaysia Borneo), and Pahang region (peninsular Malaysia).

Results: The valuable role of molecular biology assays (polymerase chain reaction), performed with specific primers for P. knowlesi is underlined, since the traditional hemoscopic examination does not allow to distinguish specific features, especially when P. knowlesi is compared with protozoa belonging to Plasmodium malariae. Malaria by P. knowlesi may be burdened by a severe and sometimes fatal outcome, since the clinical presentation and course are more severe compared with those of P. malariae, especially due to the extremely elevated levels of parasitemia. The most effective vector for P. knowlesi transmission is the mosquito Anopheles latens, which may parasite both humans-primates. Among primates, the natural hosts of P. knowlesi are represented by the species Macaca fascicularis, M. nemestina, M. inus, and Saimiri scirea.

Conclusion: After remarking the possible, severe prognosis of P. knowlesi malaria, we underline the paramount importance of a timely diagnosis-management, especially when patients enter Western Hospitals, after returning from South-Eastern Asia regions, where they eventually practiced excursions and trekking activities in the rain forest. When signs-symptoms suggestive of malaria are recognized in subjects coming back from endemic areas, a rapid diagnosis-treatment are crucial in the P. knowlesi malaria management. In the light of the present epidemiological issues, P. knowlesi may be added to the list of the known human malaria parasites, which until now included P. vivax, P. ovale, P. malariae, and P. falciparum, as the fifth potential human pathogenic Plasmodium. In the next future, an extensive surveillance system and an improved epidemiological control, will become needed. Paralleling epidemiological studies and public health implications, a more accurate survey of P. knowlesi features will be strongly needed, since preliminary data indicate an increased disease severity, associated with a greater parasitemia, probably secondary to the progressive increase of the number of interhuman “passages” of this emerging species of malaria Plasmodium.
Visceral leishmaniasis is parasitic diseases caused by Leishmania donovani (L. infantum, L. chagasi). Reservoirs of the parasites in our region are mostly dogs and rodents. Vector of transmission is sandflies. Illness was sporadically occurred in the southern regions of our country.

Methods: During four years period in our department we treated 22 patients safer from visceral leismaniasis. All the patients were citizens of Serbia and Montenegro. In endemic regions of these countries, live 18 patients, others were been during summer period in these regions. No one was traveled out of Europe. Diagnosis was established by serological methods and definitive diagnosis by microscopic examination of bone marrow smears.

Results: All the patients were adults, average age of 40.24 (range from 22-78) years, 15 of them was mails and 7 were females. Medium duration of the illness before treatment was longer then 4 mounts. Most of them had fever, anemia or pancytopenia and enlargement of liver and spleen.

As a primary therapy we used antimony (Glukantime®) in the doses of 20mg/kg during 21-28 days. In one patient we used Pentostam®. Good outcome we have in 17 patients. But in 5 patients in spite of therapy clinical, findings were present. Spelnohepatomegaly was persisted, with pancytopenia. In patients with persistent findings of parasites we repeated therapy with antimony compounds. One of patient had good outcome, but other 4 were needed Amphothericin B. All of them were treated during 15-28 days, given intravenously for a total dose of 20 mg/kg. After two courses of Amphothericin B therapy, only two patients had persisted clinical findings longer then 6 months. These two patients were treated with liposomal amphotericin B (Ambisome®) in daily dose of 2 mg/kg during 5 days. Resolution of the symptoms was achieved during first month after the therapy.

Conclusion: Unresponsiveness to antimony therapy is becoming problem in Asia, during past decade. In former Yugoslavia, we did not have such problems until now. To day, we have more patients with visceral leishmaniasis that was unresponsive to antimony therapy. Favorite outcome was achieved by use of liposomal amphothericin B, and that will be probably the therapy of choice.
Household social determinants of ascariasis in localities of North Central Venezuela
K. Quintero\textsuperscript{1}, C. Duran\textsuperscript{2}, D. Duri\textsuperscript{1}, F. Medina\textsuperscript{1}, J. Garcia\textsuperscript{1}, G. Hidalgo\textsuperscript{3}, S. Nakal\textsuperscript{4}, C. Albano\textsuperscript{5}, R. N. Incani\textsuperscript{6}, J. Cortez\textsuperscript{6}, S. Jimenez\textsuperscript{6}, M. Diaz\textsuperscript{6}, A. Rodriguez-Morales\textsuperscript{7}

\textsuperscript{1}Direction of Social Sciences, Foundation Center for Studies on Growth and Development of the Venezuelan Population (FUNDACREDESA), Ministerio del Poder Popular para las Comunas y Protección Social, Caracas, Venezuela, \textsuperscript{2}Coordination of Coproparasitology, Direction of Biological Sciences, Foundation Center for Studies on Growth and Development of the Venezuelan Population (FUNDACREDESA), Ministerio del Poder Popular para las Comunas y Protección Social, Caracas, Venezuela, \textsuperscript{3}Direction of Biological Sciences, Foundation Center for Studies on Growth and Development of the Venezuelan Population (FUNDACREDESA), Ministerio del Poder Popular para las Comunas y Protección Social, Caracas, Venezuela, \textsuperscript{4}Direction of Biological Sciences, Foundation Center for Studies on Growth and Development of the Venezuelan Population (FUNDACREDESA), Ministerio del Poder Popular para las Comunas y Protección Social, Caracas, Venezuela, \textsuperscript{5}Coordination of Statistics, Direction of Population Studies, Foundation Center for Studies on Growth and Development of the Venezuelan Population (FUNDACREDESA), Ministerio del Poder Popular para las Comunas y Protección Social, Caracas, Venezuela, \textsuperscript{6}General Direction of Research, Foundation Center for Studies on Growth and Development of the Venezuelan Population (FUNDACREDESA), Ministerio del Poder Popular para las Comunas y Protección Social, Caracas, Venezuela, \textsuperscript{7}Department of Parasitology, Faculty of Health Sciences, Universidad de Carabobo, Valencia, Venezuela, \textsuperscript{8}Direction of Population Studies, Foundation Center for Studies on Growth and Development of the Venezuelan Population (FUNDACREDESA), Ministerio del Poder Popular para las Comunas y Protección Social, Caracas, Venezuela

\textbf{Background:} Ascariasis is a highly prevalent parasitosis in so called developing countries. Its prevalence is associated with poor sanitation and hygiene, among other biological and social factors. Previous studies have found significant associations between ascariasis and social conditions of the household. For these reasons household social determinants of ascariasis in localities of North Central Venezuela was assessed in the context of a Venezuelan Study on Human Growth and Development (SENACREDH).

\textbf{Methods:} A cross-sectional evaluation of 3388 individuals (mean age 13.1±0.2 year-old) from 40 municipalities of states Aragua, Carabobo, Miranda, Vargas and Capital District was done. \textit{Ascaris lumbricoides} was diagnosed in stool samples after being preserved in MIF media. Multiple household social variables where considered in the possible association with ascariasis as risk factors for this parasitosis (Odds Ratio for each social factor was established, SPSS v.11 software was used, \(p\) significant values <0.05).

\textbf{Results:} An ascariasis prevalence of 5.36% (95\%CI 4.64-6.19\%) was found. Prevalences of ascariasis were significantly higher in those with vulnerablest houses (19.6\% vs 4.3\%) (OR=5.46, 95\%CI 3.8-7.8), in rural areas (22.0\% vs 3.7\%) (OR=7.33, 95\%CI 5.3-10.2), near to small rivers or wetlands (17.0\% vs 5.2\%) (OR=3.76, 95\%CI 1.7-8.2), with rudimental wall materials (16.5\% vs 4.3\%) (OR=4.43, 95\%CI 3.1-6.3), with soil-floor (30.8\% vs 4.5\%) (OR=9.35, 95\%CI 5.9-14.6), no tap water access (17.5\% vs 4.1\%) (OR=4.89, 95\%CI 3.5-6.9), collection of water in inappropriate recipients (17.5\% vs 4.1\%) (OR=4.89, 95\%CI 3.5-6.9), no appropriate disposal of sewage waters (9.8\% vs 4.2\%) (OR=2.47, 95\%CI 1.2-5.1) and inappropriate waste disposal (9.3\% vs 3.5\%) (OR=2.87, 95\%CI 2.1-3.9) (\(p<0.05\)).

\textbf{Conclusion:} People living in rural household with inappropriate building materials, insufficient basic public services such as water and wastes related, and surrounding disease-prone environments, are at risk for higher \textit{Ascaris lumbricoides} prevalences.
Background: The Chagas' disease is a feature anthropozoonoses of the American continent, in particular Latin America. Trypanosomiasis infection is produced by a flagellate protozoan named Trypanosoma cruzi which is transmitted through triatomine. In Venezuela, Chagas disease is considered a risk problem for about 6 million people in 198 municipalities of 14 federal agencies within a territory of 101,488 km², which includes the most affected states of Trujillo, Lara, Portuguesa and Barinas.

Methods: A case report of a female patient, 13 years old from Chichiriviche Coast, introducing current illness of 2 weeks of evolution, characterized by fever unquantified, cramping abdominal pain and headache. Laboratory testing is made and Chagas diagnosis result positive based on the presence of (+IgM). Benznidazole treatment is started, and in view of expansion of all cardiac cavities and tachycardia, the patient is evaluated by pediatric cardiology who likely pose acute myocarditis of Chagasic etiology. Benznidazole treatment was continued for one week showing satisfactory progress and the patient is discharged with ambulatory control recommendations.

Results: Case review.

Conclusion: In Venezuela, there have been 3 outbreaks of acute Chagas disease in recent years: San Juan de los Morros, Municipio Chacao and in Vargas State, hence the case we describe. In view of being a clinical entity increasingly common in our environment it should be suspected for diagnosis and treatment in all prolonged feverish syndromes of unknown etiology, taking into account the different forms of transmission that go beyond the vectorial mechanism traditionally described and that include other forms of vectorial transmission as the oral (that perhaps could have been the way of infection of this patient) from the consumption of food contaminated with wastes of triatomites they infected or by other forms of infection not described as vectors (congenital, transfusional, employment) and that includes all the population, newborns and pregnant.
Comparison of two real-time PCR targets used for detection of *Toxoplasma gondii*; the AF146527 and B1 repeated elements.

**T. Wahab**  
Karolinska Institute, Solna, Sweden

**Background:** Previous studies have reported the increased sensitivity of PCR targeting the repetitive AF146527 elements over the repetitive *B1 gene* for diagnosis of toxoplasmosis. The present study shows that the AF146527 elements was absent in 4.8% of human *Toxoplasma gondii* positive samples tested, and the data argues that at present the *B1* gene might be the preferred diagnostic target.

**Methods:** The specificity of the AF146527 repeat element was investigated by real-time PCR using the *B1 gene* as reference.

**Results:** The present study shows that the AF146527 repeat element, with a cryptic function, was not present in all isolates analyzed; 4.8% of the samples gave false negative results when compared to amplification of the *B1 gene*.

**Conclusion:** The data confirms the importance of previous recommendations to further elucidate the specificity of a multi-copy target of unknown function before its introduction in a diagnostic laboratory.
Two cases of pulmonary ascariasis in Austrian males

M. Hoenigl¹, T. Valentin¹, I. Zollner-Schwetz¹, H. J. Satzer¹, R. Raggam², H. Flick³, R. Wurm³, R. Krause¹
¹Medical University Graz, Graz, Austria, ²Medical University of Graz, Graz, Austria, ³Medical University of Graz, Graz, Austria

Background: Ascariasis is the most common helminthic infection, with an estimated worldwide prevalence of 25%. Ascariasis primarily occurs in developing countries of tropical and subtropical regions. Estimated mortality ranges from 0.8 to 1%.

Methods: Second stage larvae pass through the intestinal wall and migrate via the portal vein system to the liver and then proceed to the lungs, where they may produce pneumonia and eosinophilia. Symptoms include wheezing, dyspnea, nonproductive cough, hemotysis, and fever.

Results: We report on two cases of pulmonary ascariasis in Austrian males. Both cases, a 43- and a 65 year old male presented with dyspnea, nonproductive cough, and eosinophilia (19% and 26%). One patient additionally had pulmonary infiltrates and fever. Recent travel history was unremarkable in both individuals. Serology for Ascaris sp. was positive twice in both patients, while microscopic examination of stool was negative for helminthic ova. Extensive diagnostic procedures were performed to rule out possible differentials for the patients symptoms. Both patients responded well to antiparasitic treatment with albendazole 400mg 1-0-1 for 5 days and. mebendazol 100mg 1-1-1 for 3 days, respectively.

Conclusion: This report highlights the importance to consider parasitic infection in patients presenting with eosinophilia and pulmonary symptoms.
Search for potent antimalarial agents from medicinal plants: Inhibitory effects of anthraquinones extracted from *Cassia alata* on cysteine protease extracted from *Plasmodium berghei*

**U. A. Katsayal**¹, A. B. Sallau², A. Ahmed², S. K. Musa²

¹Ahmadu Bello University, Zaria, Zaria, Nigeria, ²Ahmadu Bello University, Zaria, Nigeria

**Background:** The vast majority of antimalarial drugs available to date have at least one of the following drawbacks: insufficient efficacy, high level of toxicity or inaccessibility to common man; the need for new antimalarial agents therefore remains. One possible approach for the identification of new antimalarial candidate is to search for compounds from plants empirically used to treat malaria. Thus, the potential of anthraquinones, pharmacologically active phytochemicals extracted from *Cassia alata* leaves was investigated against the activity cysteine protease, a key enzyme in the pathogenesis of *plasmodium berghei* infection.

**Methods:** 100 g powdered leaves of *Cassia alata* was first extracted with acetone and re-extracted with ethanol; lead sub-acetate was added to precipitate the remaining tannins to obtain the anthraquinones. 2 mL of blood obtained from mice infected with *P. berghei* was centrifuged for 30 min at 3500 rpm to obtain the cysteine protease. To assess the inhibitory effects of the anthraquinones against the enzyme, three doses (10 mgmL⁻¹ 20 mgmL⁻¹ and 30 mgmL⁻¹) of the anthraquinones were added into 50 µL of the enzyme in 100 mM sodium acetate buffer (pH 4.5) and 100 µL hemoglobin. The assessment was carried out for 1 hr and was stopped by the addition of 200 µL of 20 % (v/v) trichloroacetic acid.

**Results:** The anthraquinones produced a dose-dependent mixed type inhibitory effect on the activity of the cysteine protease, with an inhibition binding constant (Ki) value of 25.0 mgmL⁻¹. An infrared (IR) spectrometry of the anthraquinones revealed a diketone with a hydroxyl group, a methyl group and two phenyl groups.

**Conclusion:** The result of the study shows that anthraquinones extracted from the leaves of *C. alata* exhibited significant (*p > 0.5*) inhibitory effects on the activity of cysteine protease, which is necessary for the life stages of the Plasmodium parasites. This opens up the possibility for the development of yet another new antimalarial agent(s) from medicinal plant.
Parasitic infections waterborne DRCongo, where the *bilharzia* or *schistosomias*

C. T. Andjelani, T. Germaine, T. Mariamu, N. M. M. Dada, M. Ewoke, T. Nyota
Barreau de Kinshasa/Gombe - DRCongo, KINSHASA, Congo, Democratic Republic of

**Background:** Kindele one the suburbs of Kinshasa located in the south east in the town of Mont-Ngafula district characterized by:
- Extreme poverty;
- Violation of any kind;
- Inadequate housing;
- Majority of young ( girls and boys) are idle;
- Children malnourished and not attending school;
- Lack of cruel drinking water causes a host of infections waterborne as bilharzia or schistosomias

**Methods:**
- Directed drilling mechanical pump for improvement significant access to potable water;
- Awareness of hygiene and sanitation

**Results:**
- Reduction of waterborne diseases;
- Decrease the time and drudgery of fetching water for women;

**Conclusion:**
- Improved social life;
- Drinking water gained
Clinical patterns of visceral leishmaniasis in paediatric age group, University of Gondar Referral Hospital, North-West Ethiopia

B. Wasie¹, S. Yifru²
¹University of Gondar, Gondar, Gondar, ANRS, Ethiopia, ²University of Gondar, Gondar, ANRS, Ethiopia

Background: Visceral Leishmaniasis (VL) is a highly morbid, incapacitating infection, which usually presents with prolonged fever, weight loss and hepatosplenomegaly. VL in Ethiopia is caused by species of the Leshmania donovani complex including L.donovani and L.infantum and is transmitted by Phlebotomus orientalis, martini and celiae. Annually 500,000 cases of VL occur in a 200 million population at risk. In Ethiopia VL is mainly distributed in lowlands of the Northwest and southwest parts. Overall at least 40 localities report cases of VL and new foci like Libokemekem in south Gondar now become endemic for VL. The main objective of this study was to determine the clinical pattern of visceral leishmaniasis among children admitted in UoG referral hospital.

Methods: A total of 91 children admitted with a diagnosis of VL were studied over a period of three years from September 2004 to October 2007. Data was collected using pre-tested and structured questionnaire. Data was cleaned, entered and analysed using SPSS version 13 for windows. Percentages were used to describe the outcomes.

Results: The mean age of patients was 9.0 years (ranging from 3 to 14 years). Many patients came from Addis Zemen 24(26.4%) followed by Metema 18(19.8%), Belessa 13(14.3%), Armachiho 11(12.1%), Humera and two cases from Gondar town and from farmer families (86.8%). The commonest clinical presentations were chronic fever and hepatosplenomegaly (96.7% each), followed by weight loss (93.4%) pallor (90.1%), with severe pallor contributing 35.2%, bleeding tendency 54.9%, cardiac findings (including ejection systolic murmur, gallop rhythm ) 38.5%, leg edema 36.3%, lymphadenopathy 16.5%, and Ascites 2.2%.

Conclusion: VL commonly presents with chronic fever, hepatosplenomegaly, pallor and anemia with severe anaemia in significant proportion of patients. Early initiation of treatment and proper care of patients is required to the management of this fatal disease and reduce case fatality rate.
Brucellosis in children: Clinical manifestations and treatment

R. Petrela¹, E. Foto², H. Hoxha², G. Mullalli², N. Como¹
¹University Hospital Centre "Mother Theresa", Tirana, AL, Albania, ²University hospital center "Mother Theresa", Tirana, Albania, Albania

Background: Brucellosis is a systemic illness caused by organisms of the genus Brucella and characterized by the classic triad of fever, artralgia/arthritis and hepatosplenomegaly. Other associated symptoms include abdominal pain, headache, diarrhea, rash, night sweats, weakness, vomiting. The aim was to review the clinical manifestations and treatment of Brucellosis in children.

Methods: All the children with documented infection, hospitalized at our clinic during the period January 2002-december 2008 were enrolled in this study. Epidemiological data, clinical manifestations and treatment protocol were analyzed. The diagnosis of Brucellosis was confirmed by serologic test. An antibody titer against B.abortus;B.melitensis;B.suis higher than 1:320 was considered positive.

Results: 28 children resulted infected by Brucella during the study period. The most affected age-group was that of 5-10 years old (60%). 20% were from Tirana district, meanwhile the others from different rural areas all over the country, particularly from the south.

72% of them were males, 28% were females. The most part of the children, 32%, were recovered in summer, followed by 28% in spring, 24% in autumn and 16% in winter. 80% of them had a history of more than 3 weeks with complaints.

The fever was the most frequent sign, present in all cases. Artralgia/arthritis were seen in 72% of children, 55% of whom had knees involvement. 84% of patients had hepatosplenomegaly. Night sweats were present in 56% of cases.

Other symptoms such as abdominal pain, diarrhea, headache, vomiting were seen at a lower rate.

Laboratory examinations revealed: 26 children (92%) had a positive Wright test. Leucopenia was seen in 44% of cases (27% of whom had a white blood cell count lower than 3000).

Anemia was present in 72% of children.

The first choice antibiotics in children under 8 years old were TMP-SMZ+Gentamicin (in 100% of cases).

Meanwhile in children older than 8 years old, the first choice antibiotics were Doxycycline + Gentamicin in 44% of cases, followed by Tetracycline + Gentamicin in 25% and TMP-SMZ + Gentamicin in 25% of patients.

Conclusion: - 80% of children manifested the classic triad of fever, artralgia/arthritis, and hepatosplenomegaly.

- TMP-SMZ + Gentamicin remain an effective therapy in children under 8 years old.

Meanwhile for those older Doxycycline combined with Gentamicin are the most useful antimicrobial agents.
Extremely severe lipo-accumulation picture in a young patient with vertically-acquired HIV infection treated for 17 consecutive years with antiretroviral therapy

R. Manfredi
University of Bologna, Bologna, Italy

Background: Like adults, also pediatric HIV-infected patients (p) are prone to suffer from a lipodystrophy syndrome, usually accompanied by dysmetabolic disorders. The psychological consequences of the morphologic changes are expected to be particularly devastating in development ages.

Methods: Our p was born 19 years ago from an African woman recognized as HIV-positive after delivery, and received antiretrovirals since his third year of age, due to a lowering CD4+ count. Until now, our p received 19 different therapeutic lines, conducted during the first 30 months with 1-2 NRTI, and thereafter with different protease inhibitor-based combinations and other associations.

Results: Notwithstanding a cumbersome anti-HIV management, the immune-virological situation remained under control (the last laboratory assays showed a viremia of 1,300 HIV-RNA copies/mL, and a CD4+ count of 612 cells/µL), and our p never suffered from AIDS-related complications. Unfortunately, starting 7 years ago, a bilateral symmetric lipomastia appeared, associated in the past two years with a bilateral, dorsal lipid accumulation (both confirmed by ultrasonography), which were responsible for severe psychological disturbances. Hormonal-metabolic workup failed in disclosing relevant abnormalities, as to serum FSH, LH, testosterone, estradiol, estrone, progesterone, dehydroepiandrosterone, and prolactin levels, thyroidal profile (TSH, fT3, fT4, and anti-thyroid antibodies), as well as metabolic pattern (fasting glucose, total cholesterol, HDL- and LDL- fractions, apolipoproteins, C-peptide, insulin, fruttonamin, glycosilated hemoglobin, lactate, and bicarbonate), when excluding a moderate hypertriglyceridemia.

Conclusion: While in adult p the prolonged course of HIV infection and combination antiretroviral therapy (cART) usually leads to an associated dysmetabolic sindrome and lipodystrophy, characterized by co-existing peripheral lipoatrophy and visceral adiposity, usually accompanied by a mixed dyslipidemia and insulin resistance, our young p surprisingly developed an isolated mammary and dorsal lipid hyperaccumulation syndrome with lipomastia prevailing over gynecomastia. Also the recent advice to further modify cART (by including NNRTIs), is not expected to act significantly in short-mid term on the particular, focal lipoaccumulation features of our young p. A surgical option (liposuction), is the most reliable clinical option.
Specific antibodies against *Mycoplasma pneumonia* in Cerebro spinal fluid of children with CNS involvement

**S. noorbakhsh**¹, M. shekarabi¹, Z. kalbasi¹, H. tonekaboni², L. afshar-khas¹, A. Tabatabaei³

¹e; , Iran University of Medical Sciences,, tehran, Iran, Islamic Republic of, ²Shhid Beheshti university of medical science, tehran, Iran, Islamic Republic of, ³Research Center of Pediatric Infectious , tehran, Iran, Islamic Republic of

**Background:** The Objective was to compare the specific antibodies against M.pneumonia in CSF of febrile children with and without acute CNS involvement (Menigoencephalitis,GBS,Transverse myelitis,Ataxia...)

**Methods:** In a cross sectional/prospective study in pediatric wards of Rasul& Mofid hospital(2006-2008).Amount of Specific immunoglobulin G-ELISA against Mycoplasma pneumonia determined and compared in Cerebro spinal fluid sample obtained from 55 febrile children with acute CNS involvement and 10 control children(5 month- 13 years, mean age=3.8±3.43 ).Mycoplasma pneumonia-DNA searched by PCR in 53 cases. Chi square values (CI 95%, p<0.05) were calculated for all categorical

**Results:** Convulsion observed in 65%( 28%);aseptic meningitis in 17.6%(9),decreased in conciousness in 33.3%( 17).In 2% (1/53) of all cases mycoplasma-DNA detected by PCR . The area under the receiver operating characteristic (ROC) curve for Specific immunoglobulin G was(%95 CI,0.78–0.96,PValue =0.000).Cut off level for antibody was 0.0025,73% sensitivity;90% specificity.Antiboy level had significant difference between case and control[0.08±0.26 Versus 0.001±0.001;P value: 0.02];It not correlated with convulsion but significantly lower in cases with aseptic meningitis ;higher in cases with guillan Barret syndrome;and cases with neurologic findings .

**Conclusion:** CSF antibody level in Very low amount(0.0025)has 70% sensivity and 90% specificity for diagnosis.Lower risk for mycoplasma found in cases with aseptic meningitis and unconciousness but higher risk observed incases with GBS &neruologic findings.PCR as a more sensitive test should be added to CSF antibody level test in cases with CNS involvement cases.
Chlamydia trachomatis infection in early neonatal period
K. Chojnacka, T. Szczapa
Hospital of Gynaecology and Obstetrics, Poznañ, Poland

Background: Chlamydia trachomatis is the most common agent of sexually transmitted infections. Vertical transmission may result in conjunctivitis and pneumonia in newborns.

Methods: This study included 50 neonates with conjunctivitis > 5 day of life and 90 neonates with pneumonia > 2 weeks of life. All patients were hospitalized at the Poznan University of Medical Sciences Gynaecology and Obstetrics Hospital from 2004 – 2007. Polymerase chain reaction (PCR) method in AMPLICOR CT/NT test was used for the detection of Chlamydia trachomatis infection.

The aim of the study was to assess the incidence of chlamydia trachomatis infection in a neonatal period.

Results: Neonatal conjunctivitis caused by Chlamydia trachomatis was observed in 7 infants > 5 day of life (14% of diagnosed population). Chlamydial conjunctivitis began to develop at the end of the first week of life and lasted till the fifth week of life.

The symptoms which suggest chlamydial infection were: severe purulent discharge in both eyes (85%), periorbital oedema (71%) and conjunctival congestion (71%). Among infants with pneumonia > 2 week of life, 12 were diagnosed to have chlamydial infection with positive PCR result. It was 13.3% of diagnosed neonates.

All infants with chlamydial pneumonia were treated using mechanical ventilation just after birth. After more than 2 weeks of life, six of the infants was observed in significant worsening of respiratory symptoms (51%) and 5 patients had apneic spells resistant to specific treatment (41.7%). Chlamydial conjunctivitis was observed in 3 of diagnosed infants with pneumonia (25%). Feeding problems and abdominal distention were presented in 1 neonate.

Conclusion: Chlamydia trachomatis infection in early neonatal period seems to be a common problem. Targeted screening, early diagnosis and effected treatment is needed to prevent infants from chlamydial infection.
The prevalence of colonization by *Streptococcus agalactiae* in pregnant patients and their newborns, attended at 'Santa Casa de Franca', Sao Paulo, Brazil

S. Santos¹, C. H. G. Martins², M. A. M. C. Pedigone², M. G. M. D. Souza², H. C. C. Bertanha²
¹Infectology Institute Emilio Ribas, Sao Paulo, Sao Paulo, Brazil, ²Universidade de Franca, Franca, Sao Paulo, Brazil

**Background:** Investigate the colonization of *Streptococcus agalactiae* (GBS) among pregnant women in the third trimester of pregnancy and the assistance provided by the Maternity Hospital "Santa Casa de Franca - Sao Paulo", Brazil, for their newborns. Furthermore, the aim of this project was also to check the profile of antimicrobial susceptibility of these microorganisms.

**Methods:** This study was conducted at the Maternity Hospital Santa Casa de Franca-Sao Paulo, Brazil, from November 2007 to September 2008, in which the research focus were women in the third trimester of pregnancy and their newborns. We included all pregnant women at 35 weeks of gestation or higher, excluding those who had submitted to a gynecological examination on the day of the collect, those who had taken antibiotics for less than a week and those who had refused to sign the consent form. This project was approved by the institutes’ ethic committees. We collected a swab from the anorectal region; one of the pregnant woman’s vaginal area and other from her newborn oropharynx. The samples were separately cultivated in medium selective culture. After being incubated for 24 hours, the plates were inspected and the GBS suggestive colonies identified. When it was detected colonies growth in these plates, they were reincubated and the ending read was made in 48 hours. The The assessment of antimicrobial susceptibility was performed according of NNCCLS 2004.

**Results:** 351 women were interviewed, 261 did not meet the inclusion criteria, 90 with their newborns were tested, out of these, 4 were positive for GBS, and all of the newborns’ samples were negatives. The GBS were sensitive to all antibiotics tested.

**Conclusion:** This work results, although they stress that the active pursuit of maternal colonization and neonatal GBS and prophylactic treatment for infections, should be encouraged to occur routinely in the institutions that care this population
Background: Herpes simplex encephalitis (HSE) is regarded as the most common cause of sporadic fatal encephalitis in patients >6 months of age. Untreated patients with HSE have a 70% mortality rate and with early treatment 40% of patients recover without significant neurologic deficits. Survival rates are improved if treatment is initiated within 4 days after the onset of the illness. Usually the virus damage temporal region, but in15% of cases, we can found alterations in other extra temporal region of brain.

The purpose of this study was to present a case with atypical form of herpes simplex encephalitis with alterations of oxipital region, in a children admitted in the University Hospital Center Tirana Albania.

Methods: to analise the help of clinical data and laboratory examinations in the putting of diagnose of Herpes Simplex Encephalitis and to show the effect of the treatment with aciclovir.

Results: A boy six years old presented with headache on the left frontal region, fever 38.5-39.5 C, pale, vomiting, hyperesthesia, disorientation and minimal reductions in the level of consciousness. decreased visuality, tremor, neck stiffness. Laboratory values were as follows: white blood cells were 10x 10\(^{-6}\). CSF revealed a WBC 1000/mm\(^3\) (90 lymphocytes, 10 neutrophils), protein concentration of 45mg/dl and glucose concentration of 71mg/dl. EEG revealed generalized slowing waves. CT was normal

MRI findings suggesting HSE, such as focal signal abnormalities, edema, petechial hemorrhage localized to the limbic system.

Anti-HSV IgM and IgG antibodies were demonstrated in both blood and CSF samples with high titer. The patient was treated with ceftriaxon 100 mg/kg and three 3 days after hospitalization acyclovir 10mg/kg every 8 hours for 21days.

After treatment the patients presented long-term disability as amaurosis, amnesia and psychotic disorders.

Conclusion: Herpes simplex encephalitis continues to be associated with poor long-term neurologic outcomes despite appropriate therapy. Therefore, early diagnosis and treatment with aciclovir are critical for preventing death and minimizing long-term disability. MRI is a more sensitive diagnostic imaging modality for detecting abnormalities associated with HSE and should be used in preference to CT evaluation. Atypical forms of herpes simplex encephalitis may occur in children.
Background: Rotaviral infection is common in children.  
Methods: A retrospective study has been made in 79 patients aged between 5 moths and 7 years old, treated at the Clinic for Infectious Diseases in the period from 2007 to 2009.  
Results: The clinical picture characterises with: diarrhoea (99%), vomiting (96, 2%), febrility (96%), cough (18, 9%). Most of the patients were with metabolic acidosis (48 %), Hypocalemy registered it 11 (13, 9%), Hypoglycaemia in 23 (29 %). There were 35 (44, 3%) patients with Leucocytosis. According to bacteriological analysis Candida albicanis was isolated from the feces of 3 patients, and Salmonella enteritidis in 1 patient. Amino-transveral ensims activity in 21 (26, 5 %) patients. Respiratory symptoms were manifested in 36 (45, 5%) patients, form which x-ray verified bronchopneumonia found in 8 (22, 2%).  
Conclusion: Rotaviral infection is common in children. Diarrhoea and vomiting are the main causes for dehydration of the children which is the main reason for hospitalisation. Intravenous rehydration, per-oral hydration, eubiotic, as well as dietary regime is conveyed in all patients, in 38 (48%) patients parenteral substitution with bicarbonates was made. The treatment lasted 5 days in average.
Relevance of CRP and neutrophils as predictable factors for the etiology at the children acute diarrhea

S. Stojkovska¹, E. Trajkovska-Dokic², B. Joksimovic¹, V. Semenakova-Cvetkovska¹, I. Vidinic¹, G. Stojkovski³
¹Clinic for Infectious Diseases, Skopje, Macedonia, ²Institute of Microbiology and Parasitology, Skopje, Macedonia, ³Faculty of Pharmacy, Skopje, Skopje, Macedonia

Background: The exact confirmation of the agent for the diarrhea combined with the clinical scan is best mark for the correct therapy, and possibility for therapy with antibiotics.

Methods: Goal: Impossibility for fast detection of the agent enforce tracking of the laboratory parameters, CRP and the value of the leucocytes, needed for the exclusion or confirmation of the viral or bacterial etiology of the diarrhea.

In 2007/2008 217 children are treated with confirmed ROTA viral infection. The following examinations were made: Complete blood scan, Acid base status, electrolyte status, checking of the stool for fecal leucocytes. At 110 patients, ROTA viral infection was confirmed.

Results: 110 children are treated with acute intestinal infection for which the hospitalization is needed, medium value 24,8 months (standard deviation SD +/- 15.63).

At 68 children (61.8%) PH value was under 7.35, with average value of 7.32 (SD +/- 0.047).

Values of electrolyte were: Potassium – K SV 3.9 (standard deviation SD +/- 0.599) and Sodium Na SV 138,48 (SD +/- 4.50).

Fecal leucocytes above 5 in field have been found in 5 stools (0.045%), and stool culture taken from all the children’s ate the beginning of the examinations was positive only in 5 specimens.

Increasing of leucocytes above 9x109 at 58 children (58.72%) with average value of 11.39 (SD +/- 5.12) Values of the neutrophils above 0.62 was found at 66 children (60%) with average value of 0.65 (SD +/- 0.1819).

Value of the CRP was 10 mg / l at 59 children (53.63%), average value 16.66 (SD +/- 17.47).

Conclusion: CRP is a sensitive marker for the existence of inflammation, and not only for the bacterial infection. The work done show that the existence of confirmed ROTA viral infection in 53.63% of the treated cases lead to the increasing of the CRP, and in 60% of the treated cases to the increasing of neutrophilies. The high values of the CRP have positive predictable values for the bacterial infection and negative predictable values in exclusion of the bacterial infection. CRP is a marker for the damage of the tissue when ROTA viral infection is present.
Typhoid fever in children

R. Petrela¹, E. Kalifa¹, H. Hoxha², G. Mullalli², N. Como¹
¹University Hospital Centre "Mother Theresa", Tirana, AL, Albania, ²University hospital center "Mother Theresa", Tirana, Albania, Albania

**Background:** Typhoid fever is a systemic infectious disease caused by Salmonella Typhi, and characterized by fever, weakness, maculopapulose exanthema, spleen and liver enlargement, leucopenia.

The aim was to review the clinical manifestations and treatment of typhoid fever in children.

**Methods:** All children with documented infection, hospitalized at our clinic, during the period January 2003-December 2007 were enrolled in this study. Epidemiological data, clinical manifestations, and treatment protocol were analysed.

The diagnosis of typhoid fever was confirmed by serologic examination. An antibody titer against TO antigen higher than 1:320 was considered positive.

**Results:** 53 children resulted infected by typhoid fever during the study period. The most affected age-group was that of 5-10 years old (60%).

49% were females and 51% were males.

56% of them were from Tirana district, meanwhile the others from different rural areas all over the country.

46% of cases resulted hospitalized in autumn, 33% in spring, the other part in winter and summer.

The fever was the most frequent sign, present in all cases. Liver enlargement was seen in 70% of children, spleen enlargement in 54%, the abdominal pain in 38%, vomiting and diarrhea were presented respectively in 32.5% and 0.8% of patients.

Maculopapulose rash was seen in 16% of cases.

Laboratory examinations revealed: All the patients had a positive Widal test. Leucopenia was present in 55% of children, anemia in 78% with lymphocytosis in 60%. High sediment was seen in 65% of cases.

Among the complications, pneumonia was present in 32% of children. A positive clinical response was seen approximately after 5 days of treatment.

The first choice antibiotic was Chloramphenicol used in 81% of cases, Ceftriaxone was prescribed in 16%, while Ampicillin as monotherapy in 13.5%. No relapses were observed.

**Conclusion:** - Systemic signs rather than gastrointestinal one dominated the clinical picture of our pediatric cases with typhoid fever.

- Chloramphenicol still remains an effective drug for this infection.
Pediatric invasive pneumococcal disease in a tertiary hospital in Malaysia

N. Othman¹, Z. Abdul Wahab², M. Z. Abdul Hamid³, T. Jamal Mohamed⁴, K. A. Mohd Razali⁵, H. I. Mohammad Ismail⁵

¹Universiti Putra Malaysia, Serdang, Selangor, Malaysia, ²Sungai Buloh Hospital, Sungai Buloh, Selangor, Malaysia, ³Universiti Putra Malaysia, Serdang, Selangor, Malaysia, ⁴Institute of Paediatrics, Kuala Lumpur General Hospital, Kuala Lumpur, Malaysia, ⁵Institute of Paediatrics, General Hospital Kuala Lumpur, Kuala Lumpur, Malaysia

Background: *Streptococcus pneumoniae* has long been one of the most important bacterial pathogens causing pneumonia, meningitis, otitis media, and septicaemia. In Malaysia, although the incidence of penicillin resistance *S. pneumoniae* is still low, the rate of increase of 0.85% in 1988 to 10.9% in 1997 is disturbing. This study is carried out to assess the clinical data of children who had *S. pneumoniae* invasive infections admitted to a tertiary hospital.

Methods: A retrospective study at Institute Paediatrics Kuala Lumpur, a tertiary pediatric hospital of 500 beds which provides both primary and tertiary care, in children of 0-12 years infected with *S. pneumoniae*. An infection was considered invasive if *S. pneumoniae* isolates were recovered from normally sterile body specimens. Identification of pneumococcal isolates was performed by standard bacteriological methods including susceptibility to optochin and bile solubility. Penicillin sensitivity of isolates was screened by the oxacillin disc diffusion method.

Results: Twenty-four patients were included during the 4-year study period. All except one were less than 5-years-old; 17 (71%) children were less than 2-years-old. There was a male preponderance of male:female ratio of 2:1. Septicaemia (8,33%), followed closely by meningitis (6,25%) and pneumonia (5,20.8%) were the three leading chief presentations on admission. Nine patients had underlying conditions; four of these were associated with malignancies. More than half of these children required ventilation and complications noted were predominantly neurological. There were two mortalities, both were in infants. Penicillin susceptibility data were available in 23 isolates (96%). Of these, 18 (75%) were susceptible and 5 (21%) were not susceptible.

Conclusion: Invasive pneumococcal disease is an important infection in children less than 5-years-old with an increasing rate of resistance in Malaysia.
Meningitis in day care centers
S. Trninic1, A. Bajraktarevic1, Z. Mulalic1, B. Djukic2, S. Korac3, M. Ferhatovic4, M. Babic5, J. Čeman Saric6, A. Selimovic6, Z. Jatic7
1Public Health Institution of Canton Sarajevo, Sarajevo, Bosnia and Herzegovina, 2First Medical Aid, Sarajevo, Bosnia and Herzegovina, 3General Hospital Sarajevo, Sarajevo, Bosnia and Herzegovina, 4Infectious Clinic Sarajevo, Sarajevo, Bosnia and Herzegovina, 5Clinical Medical Center Sarajevo, Sarajevo, Bosnia and Herzegovina, 6Pediatrics Clinic Sarajevo, Sarajevo, Bosnia and Herzegovina, 7Medical faculty Sarajevo, Sarajevo, Bosnia and Herzegovina

Background: Childhood meningitis is associated with significant morbidity and mortality specially under three years of age in Day Care Centers. In immunocompromised infants hosts and kids patients undergoing neurosurgical procedures, meningitis can be caused by variety of different bacteria or virus. When a toxic newborn or young infant presents with fever and lethargy or irritability, it is important to consider the diagnosis of meningitis even if the classic localizing signs and symptoms are absent.

Methods: The onset of acute meningitis had two predominant patterns. Sudden onset with rapidly progressive manifestations of shock, purpura, disseminate intravascular coagulation and reduced level of consciousness is dramatic and fatal presentation as in meningococcal meningitis and sepsis. Second onset was less progressive, preceded by several days of upper respiratory tract or gastrointestinal symptoms. The cerebrospinal fluid (CSF) sample was examined for white blood cells (and which subtypes), red blood cells, protein content and glucose level. Gram staining of the sample demonstrated bacteria in bacterial meningitis.

Results: The CSF leukocyte acount in bacterial meningitis was usually elevated to more than 1000 and reveals neutrophilic predominance 75-90%. Headache and neck stiffness were rarely noticed by parents despite being present in 43% of cases. Local or generalized seizures are noted in 23 % childrens with meningitis.

Conclusion: Meningitis in children there are several potential disabilities which result from damage to the nervous system. These include sensorineural hearing loss, epilepsy, diffuse brain swelling, hydrocephalus, cerebral vein thrombosis, intra cerebral bleeding and cerebral palsy. Meningococcal disease still is associated with a high mortality rate and persistent neurological defects, particularly among infants and young Bosnian children.
Pertussis: Clinical and epidemiological characteristics and factors of bad prognosis in a pediatric hospital in Argentina

C. Aguirre, C. Barrias, E. Machado, L. Lagos
Hospital "Juan Pablo II", Corrientes, Argentina

Background: Pertussis is still a prevalent disease presenting in epidemiological cycles each 3 to 5 years and mainly affecting young infants. Since 2003, we have observed the re-emergence of this disease, with an increased notification rate of 5.7/100,000 (previous rate: 1.8/100,000). The lack of administration of a booster dose of the available acellular vaccine in children older than 7, and the waning immunity in adolescents and adults favors the increase of disease transmission to infants too young to be vaccinated.

Methods: We present a retrospective and observational study, analyzing the medical records of patients with suspected diagnosis of Pertussis disease seen at our hospital in the period June 2007 through February 2009. Statistical evaluation was done using Epi Info 2008 software.

Results: We analyzed 30 patients. Their median age was 2 months (range: 1-156). 90% (27) were aged 6 months or younger; 43% (13) resided in urban areas in our province; 38% (11) had been in contact with a cougher adult; 70% (21) had not received DPT vaccine, 17% (5) had incomplete vaccination schedules, and 53% (16) were less than 2 months of age. 26% (8) had only received one dose. 63%; (19) were eutrophic. 43% (13) of the cases were seen during the months of June and July (winter season). Most frequent clinical signs at admission: paroxysmal cough 97% (29), difficult breathing 93% (27); cyanosis 73% (21), fever 37% (11), apnea 23% (7), seizures: 3% (1). Laboratory findings showed median leukocytes count 44,367/mm3, median platelets count 549,000/mm3. 73% (21) of the cases were admitted to ICU, 100% due to respiratory failure, 27% (8) due to hemodynamic failure. Positive PCR for B. pertussis was found in 53% (16) and 5 patients had co-infections: respiratory syncytial virus (3), S. pneumoniae (1), P. aeruginosa (1). There were 7 deaths (23%). Mortality factors were age younger than 2 months, hyperleukocytosis (median 108,571/mm3), apnea 42% (13) (p< 0.05).

Conclusion: Our study findings confirm that infants who are unimmunized against Pertussis due to young age are the most affected group. Age, apnea and hyperleukocytosis are the most frequent mortality risk predictors. A booster dose of the available acellular Pertussis vaccine in adolescents and adults could help reduce the impact of this disease among unimmunized young infants.
Infections presenting as non traumatic coma in children: A prospective study of clinical profile, needs and outcome

C. azad¹, V. parmar², P. Aggarwal³
¹government medical college and hospital chandigarh India, Chandigarh, India, ²govt medical college chandigarh, India, 160031, India, ³GMCH, Chandigarh, India

Background: CNS Infections are the leading cause of NTC in children in developing countries. A prospective study was undertaken 1.To study the etiology and clinical presentation of cases of non traumatic coma (NTC) associated with infections in pediatric patients. 2. To identify the emergency & critical care needs of such patients. 3. To assess the immediate outcome.

Methods: Prospective case series from Aug 2k7 to Aug 2k8 in the pediatric emergency department of a teaching hospital in India. Children between 3 months to 12 years of age admitted with diagnosis of NTC having GCS (Glasgow Coma Scale) of <12 were prospectively enrolled. Etiology was determined on the basis of history, physical examination & relevant laboratory investigations. 2 groups were made on the basis of etiology: 1) directly related to infections, 2) indirectly related. Outcome was recorded as: intact survival & discharge, referred to other institution & adverse outcome (death or persistent vegetative state).

Results: A total of 74 patients (62.6 % boys) were enrolled. Mean age of presentation was 4.8 years (range-.5-12 years)was seen & duration of symptoms 5.46 days (range-1-30 days). Seasonal variation was seen for viral encephalitis, Bacterial meningitis & hepatic encephalopathy . The common symptoms were fever (95%), seizures (77%), vomiting (48.6%) & abnormal posturing (22.2%). Meningismus was seen in 18.9%. Mean GCS was 8.18 (range-3-12).

58 (79.7 %) cases were in 1st group (directly related to infection) & 16 (20.2%) in 2nd group (infection related).

In 1st group, viral encephalitis was commonest (56%), followed by bacterial meningitis (22%) & tuberculosis meningitis (18.6%).

2nd group included hepatic encephalopathy (68%), acute gastroenteritis (25%) & ADEM (6%).

69 % patients required intubation & ventilation. For raised intracranial tension, Mannitol was required in 82 %, hyperventilation in 46% & steroids in 16%.

51% patients were discharged (47% of them neurologically abnormal), 28% died, 17% left against medical advice in persistent vegetative state & 3% referred to higher centers.

Conclusion: If measures to reduce infections are taken, substantial number of deaths & disability due to NTC can be reduced in developing countries.
Compliance to antimalarial prophylaxis in Slovak humanitarian and medical personnel in Sub-Saharan Africa

V. Krcmerý, P. Olejčekova, P. Kisac
St. Elizabeth University College of Health and Social Sciences, Bratislava, Slovakia

Background: Compliance to antimalarial prophylaxis is a key issue in prevention of malaria in travellers.

Methods: We assessed compliance and efficacy of antimalarial drugs in 80 travellers and humanitarian aid workers, 24 were covered with prophylaxis – those who travelled to Uganda, Burundi, Sudan (1999-2009). After 2000, we have not recommended prophylaxis in Nairobi and Eldoret due to higher altitude (1900 m.a.s.l) and no cases of malaria among our staff within last years.

Results: From 80 travellers, 8 developed malaria during stay (10%) none got malaria after travel. In 2 cases chloroquine, 1 doxycycline and 1 case pyrimethamine/sulfamethoxazole (1999-2000) have been used for 3-6 months 1 x weekly in Nairobi. In 20 other cases, mefloquine 1 x weekly has been used, 1 week before during and 1 month after the travel (Sudan, Ethiopia, Uganda, Burundi). From 20 courses, only 9 (45%) has been successfully completed, 11 were discontinued other 1-8 weeks because of adverse reactions - insomnia (3), depression (6), hallucinations (1), vomiting (1). Among 9 cases who completed prophylaxis, 4 developed malaria despite regularly taken prophylaxis with mefloquine (44.4%). Among 11 who did not completed prophylaxis (with mefloquine 1-8 weeks), 4 travellers developed symptomatic malaria (36.1%). They were no significant difference among those, who completed full course of prophylaxis and those who did not, with adverse reactions 44.4% vs. 36.1%, (NS, X2 test). None of 8 cases of malaria were severe. Only 1 case among 48 (5%) appeared, after travel in Kenya (Nairobi), 5 cases after travel in Sudan, one in Burundi and one in Uganda.

Conclusion: In conclusions our limited experience during 10 years of sending humanitarian medical personnel to Sub-Saharan Africa, shows, that work for 3-6 months in altitude more than 1800 m.a.s.l. does not represent a serious risk of malaria despite of reports of highlands malaria and prophylaxis with mefloquine did not influence the frequency of malaria cases. All but 1 case of symptomatic malaria occurred in Sudan, Uganda or Burundi. None of 8 cases in 80 travellers had severe clinical course of malaria and responded well to 3 days of oral artemether/lumefantrin therapy.
Background: Burden and impact of malaria in non-endemic areas is growing in different countries, even more today in those with endemic areas, such as Venezuela and other Latin American countries where tourism is increasing in the context of areas still endemic for malaria. In this region of the *Plasmodium vivax*, the predominant etiological species, can evolve in a non-benign form causing sometimes life-threatening conditions. For these reasons surveillance of such cases especially in non-immune migrant population is of utmost importance.

Methods: Herein we describe clinical and epidemiological aspects of individuals with imported malaria admitted to a Hospital of Barquisimeto, Lara state, Venezuela (non-endemic area), between 1998 and 2009. Etiological diagnosis is based on thin and thick peripheral blood smears with local, regional and national quality controls.

Results: In this twelve-year-period seven imported cases of malaria were admitted to the hospital. Mean age of patients was 32 years-old. In 3/7 (43%) of patients were known the history of travel to endemic areas. In 6/7 (86%) *P. vivax* was the etiological species and in 1/7 (14%) was due to *P. falciparum*. All patients presented with fever, anemia and thrombocytopenia (in *P. vivax* case both were severe), 86% with headache, abdominal pain and malaise; 71% with hepatomegaly and 57% with hypoxemia, leukopenia and others findings. Mean hemoglobin levels were 9.46g/dL (±2.57); mean platelets count was 105,709cells/mm3. In 5/7 (71%) cases blood transfusions were required. CFR=0%.

Conclusion: Western Venezuela malaria cases represent less than 5% of national incidence, and in Lara state where Barquisimeto, the capital state city, is located, there are no endemic areas. As has been previously reported all the patients with *P. vivax* presented with multiple clinical complications, such as anemia and thrombocytopenia. Malaria represents a significant threat to non-immune travelers visiting endemic areas, even inside a country such as Venezuela with endemic and non-endemic areas, which can present with more severe disease and late diagnosis and treatment. For these reasons education and prevention in travelers is of utmost importance, enhancing the importance of pre-travel advice as well of post-travel consultation even in Latin American countries such as Venezuela.
Profile of the user of Brazilian center for travel medicine (CBMEVi) in Rio de Janeiro, Brazil
F. Bravo¹, E. Marques Araujo²
¹CBMEVi, Rio de Janeiro, Brazil, ²UERJ, Rio de Janeiro, Brazil

Background: The movements of people around the world motivated by leisure or work have increased greatly in recent years. In 2006 more than 800 million people have traveled and there is estimated that by 2020 they will reach 1.5 billion. 20 to 70 % of travelers experience some health problem during the travel and many of these could be avoided if there had been a consultation with a specialist in Medical Travel prior to departure. Against this scenario it’s necessary that the performance of this medical specialty is expanded to make it due to protection of the traveler’s individual health and the country of origin as well as the community that receives him.

Objective: To evaluate the profile of a user of the private sector in travel medicine.

Methods: This study included registry information of 204 users of CBMEVi from October 2008 to June 2009. The Brazilian Center for Travel Medicine is a service within a private practice of vaccination clinic in the city of Rio de Janeiro, Brazil. The data were tabulated and analyzed

Results: 80% of users were male, 62% were aged between 20 and 40 years. 94% were referred for consultation travel medicine by their employer before the business travel and 95% brought a prescription stating the vaccine in need to be applied. The more used vaccine was for typhoid fever (23.5%) followed the hepatitis A + B (22.5%). The main domestic destinations were: Ceará (50%) and Mato Grosso (18%), and the international were to Colombia (14%) and Angola (9.3%).

Conclusion: In our casuistries, most of the travel medicine calls happens by the forwarding of employees going on business travel by the medical sector in companies. Knowing that the number of people moving around the world includes a universe much more than business travelers, we understand that we need to increase the dissemination of information for the general public about the specialized medicine in the travelling, about the agencies and organizations involved with tourism, as well as the medical community in general, so that all travelers could have their health protected during the trip no matter its motivation.
A systematic review of the effectiveness of using Mefloquine as compared to Malarone (atovaquone-proguanil) for malarial prophylaxis in travelers to endemic regions

T. Dempsey, J. Dunnick, A. Quao, L. White
The Dartmouth Institute, Norwich, VT, USA

Background: Malaria affects more than 350 million people and can lead to severe flu-like symptoms or even brain damage. The disease also causes upwards of one million deaths yearly. Disease burden is concentrated in endemic areas, so travelers to these regions are at a high risk for contracting the disease. Malarone and Mefloquine are two commonly recommended malaria prophylactics for travelers to endemic areas. While the differences in cost and convenience are well documented, potentially important differences in efficacy and safety have not been formally reviewed.

Objective: To assess the efficacy and safety of Malarone and Mefloquine for malarial prophylaxis in non-immune travelers to endemic regions.

Methods: We searched Medline (1950-9/27/2009) with the help of a reference librarian. We reviewed both the Cochrane Library (1800-9/2009) and the reference lists of articles identified by our search. We also searched ClinicalTrials.gov (1800-9/27/2009), Google Scholar (1990-9/27/2009), and participated in a trial of Summon available through the Dartmouth Biomedical Library (1999-9/28/2009). There were no restrictions on our literature search.

Selection Criteria
Case control, cohort and randomized control trials of the efficacy of Malarone and Mefloquine for prophylactic treatment of malaria for travelers to endemic regions.

Data Collection and Analysis
Two reviewers, using a standardized data collection form, independently abstracted data including study quality. The results were analyzed in RevMan 5.0.

Results: Five studies involving 3866 subjects were included in the review. Meta-analysis of all five studies, as well as sensitivity analyses of the three RCTs, showed no statistically significant difference between Mefloquine and Malarone for preventing *Falciparum malaria* (AR=0.00, 95% CI=0.00-0.00). Upon analysis of the RCTs, travelers using Mefloquine were more likely to develop side effects compared to those using Malarone (AR=57%, 39% respectively; RR=1.51, 95%CI=0.85-2.68). This was however not statistically significant (p=0.16). Based on the three RCTs, severe side effects warranting hospitalizations or discontinuance of medication did not significantly differ between Mefloquine (AR=8.4%) and Malarone (AR=6.3%) users (RR=1.3, 95%CI=0.8-2.1, p=0.27).

Conclusion: Both Mefloquine and Malarone are equally effective in preventing malaria in non-immune travelers and appear to be well tolerated. However, Mefloquine is more likely to cause side effects compared to Malarone.
Knowledge, attitude and practice regarding pandemic influenza A (H1N1) among Iranian pilgrims previous the Hajj period in 2009

A. Ghalyanchi Langeroudi, K. Majidzadeh, M. Soleimani, E. Jamshidiyan, A. Mohseni, A. Morovvati
Tasnim biotechnology research center, Tehran, Iran, Islamic Republic of

Background: The Hajj represents the largest mass migration (pilgrimage is a yearly event in which >2 million), during which several Muslims including Iranian Pilgrims travel across the planet to descend on specific holy sites at Makkah in the Hijaz area of Saudi Arabia. A pandemic caused by novel influenza A virus (H1N1) poses a serious public health threat in 2009. In this study, we evaluated Knowledge, attitude and practice (KAP) regarding Pandemic influenza A (H1N1) among Iranian Pilgrims for the Hajj in 2009.

Methods: Trained interviewers randomly invited Pilgrims at the departure gates of MEHRABAD international airport in Tehran to respond to a self-completion questionnaire developed by the researchers based on review of the literature in November 2009 and checked for completeness and validated by trained interviewers. A total of 220 responses were collected. Data analysis was done by SPSS 11.

Results: The most range age of the respondents (56.3% Male & 43.8% Female) was stand between 41 to 64 years (41.3%). When education level was controlled, More than 60% of Pilgrims had at least a college education. The most pilgrims had high knowledge regarding H1N1 symptom s transmission methods.93.8% and 70% of traveler declare Fever and Body aches are the most common symptom of H1N1. In prevention section, most pilgrims were willing to wear a mask (65%), frequently wash their hands (90%) and use disposable handkerchiefs (81.3%). Main information sources was TV (61.3% of respondents had been satisfied from performance of Iranian Iran Broadcasting Organization in promotion and propagation about H1N1) and Internet had minimum efficacy. 62.6 % of travelers numbered high score to act of Iranian Hajj Organization in information and education. Regarding practice section, approximately 55% of respondents had Panic sense about swine origin influenza. Also above 80% Pilgrims will recourse to medical centers in Saudi Arabia when suspected to disease and don't will treat themselves intractably. Another interesting result is 65.5 % of travelers had no interest for shot H1N1 Flu vaccine during Hajj Period.

Conclusion: This survey demonstrated that KAP about H1N1 was rich and acceptable among Pilgrims But Strategies are needed for raising awareness of preventable after repatriation of them.
An aproach for emerging infectious diseases control in travel healthcare settings

M. Bastanzuri
Cira Garcia Central Clinic, Havana City, Cuba

**Background:** Emerging Infection Diseases (EID) are increasing because of ecological, environmental, economic and demographic factors. Severe Acute Respiratory Syndrome and the emergence of Influenza A (H1N1) are recent epidemics examples of the virus rapid spread through infected travel humans. Attending EID in Travel Healthcare Settings (THCS) could be threats to human health because of rapid global expand. The Hospital Epidemiology Cuban Society (HECS) have the proposal to respond this challenge, elaborating an approach for improving the prevention of EID transmission in THCS.

**Methods:** We select a compendium of strategies which containing practical guidelines for infection control that were produced by healthcare epidemiology multidisciplinary expertise groups and then we make an approach that could strengthen the epidemiologic institutional capacity for preparedness and response to an introduction and transmission EID in THCS.

**Results:** The theoretical framework for this document is a selective infection control guides from international agencies that result in basic components of an EID Control approach for development by interdisciplinary actions.

The fundamental Components of EID control approach are:
- Epidemiologic syndrome surveillance; hospital Infection control and infrastructure;
- environmental infection control; occupational health; healthcare personnel education and epidemiologic knowledge management.

**Conclusion:** Recent epidemics of Severe Acute Respiratory Syndrome and influenza virus A (H1N1) are learned lessons about attending EID in THCS could be a threats to human. We select international guidelines for infection control and then we make an approach that could strengthen the epidemiologic institutional capacity for preparedness and response to an introduction of EID in THCS.

The HECS respond this challenge elaborating an approach for improving for improving the prevention of EID transmission in THCS.
A fatal cases of Spotted Fever Group Rickettsiosis (SFGR) misdiagnosed as a viral hemorrhagic fever (VHF) in a traveler from South Africa

D. Almeida¹, A. Favacho¹, T. Rozental¹, C. Lamas², H. Barcaui³, A. Guterres¹, R. G. Silva¹, J. Coelho¹, S. Levis⁴, A. Chebabo⁵, F. Braga⁶, L. M. Costa⁶, C. Andrea⁷, P. F. Barroso³, E. R. Lemos¹

¹Instituto Oswaldo Cruz, Rio de Janeiro, Brazil, ²Instituto Nacional de Cardiologia, Rio de Janeiro, Brazil, ³Hospital Universitario Clementino Fraga Filho, Rio de Janeiro, Brazil, ⁴Instituto Nacional de Enfermedades Virales Humanas-INEVH, Pergamino, Argentina, ⁵Casa de Saúde São José, Rio de Janeiro, Brazil, ⁶Ministério da Saude, Brasilia, Brazil, ⁷Secretaria Estadual de Saude do Estado do Rio de Janeiro, Rio de Janeiro, Brazil

**Background:** A wide spectrum of rickettsial diseases has been recognized in travelers in the last 2 decades. SFGR transmitted by ticks is 2nd only to malaria as a cause of fever in journeys to Sub-Saharan Africa.

**Methods:** Case report.

**Results:** On November 2008, a white 53-year-old South African male, 2 days after arriving in Brazil, reported headache, fever, chills, sore throat, asthenia and hematuria. He was admitted to hospital 3 days later with worsening of his clinical picture and a generalized maculopapular rash. There was no eschar. He presented 50% band forms, thrombocytopenia (69 _109/L), levels of lactic dehydrogenase and alkaline phosphatase > 1.000 IU/L. Empiric treatment to arenaviruses, community sepsis and rickettsioses was begun but he deteriorated and died 24 hours later. He had possible contact with fatal new arenaviruses in Johannesburg, SA, in October. Blood smears were negative for malaria and other parasites. Blood and urine cultures and serological tests for SFGR, dengue, yellow fever, leptospirosis, hantavirus and arenavirus were negative. PCR for arenavirus, hantavirus and rickettsiae was negative. Segments of htrA (246 bp), ompA (532 bp), ompB (650 bp) and gltA (381 bp) were amplified from serum and blood clot DNA. The nucleotide sequence of the gltA amplicon (325nt) had 95% sequence similarity to the gltA gene of *Rickettsia conorii* and that of the ompA amplicon (491nt) had 100% sequence similarity to that of *R. conorii conorii* (Fig). Immunohistochemistry of biopsy specimens of liver showed SFGR antigens in small perivascular foci.

**Conclusion:** Most cases of travel-associated tick-borne spotted fever rickettsioses acquired in sub-Saharan Africa, particularly in SA, is caused by *R. africae*, but infections by *R. conorii* and *R. sibirica* have been described in this area. In this reported case, blood PCR was positive for *R. conorii conorii*. Although *R. conorii* infections present usually as a benign illness, severe cases associated with renal and respiratory failure have been described. Absence of eschar is reported in 14% to 40% of cases. An alert about the possibility of the occurrence of SFGR in travelers during the Wolrd Cup in 2010 in SA should be considered and advice given to tourists.
Bacteriological and physical quality of locally packaged drinking water in Kampala City, Uganda

H. A. Abdullah¹, D. Guwatudde¹, J. Ssempebwa¹, D. K. Ssemwanga², R. Tweheyo³
¹Makerere University School of Public Health, Kampala, Uganda, ²Kampala City Council, Kampala, Uganda, ³Makerere University School of Public Health, Kampala, Kampala, Uganda

Background: Drinking water packaged in bottles and polythene bags has become a common consumer product in Kampala City, however, the quality of packaged water is unknown. The study aimed at assessing quality of locally packaged water sold for public consumption in Kampala city.

Methods: We carried out a descriptive cross-sectional study, during January – March 2009. We collected 60 samples of bottled water from ten brands and 30 samples of sachet water from 15 brands.

Bacteriological quality analysis used the membrane filtrate method with *m lauryl sulphate broth* as culture medium at Kasangati Public Health Laboratory. A quarter of all samples were sent to a reference laboratory (National Water and Sewerage Corporation) for validation. The samples were analyzed for total and faecal coliform organisms per 100 ml and reported in terms of cfu/100 ml. The sign test test and odds ratios were used to measure the difference in total coliforms between bottled and sacket water with the level of significance taken to be p<0.05.

Consumer perceptions towards packaged water were assessed from 423 respondents obtained by simple random sampling from 12 parishes in 3 divisions of Kampala.

Results: Total coliform significantly above the acceptable level of zero cfu was detected in 15% (9/60) of the bottled samples (p=0.004); and 70% (21/30) of sachet water (p=0.000). There was significantly higher prevalence of total coliform in sachet water compared to the bottled water (OR=13.2, 95% CI: 4.12-43.58). Also, more than half of the respondents, 56 % (237/423) preferred bottled to sachet water for drinking, because they perceived the latter as unsafe.

Conclusion: About 15% of bottled water and 70% of sachet water samples in the retail outlets in Kampala city are likely to be contaminated with total coliform. Sachet water had significantly higher prevalence of total coliform compared to bottled water.

Findings emphasize the need for repeated testing of packaged water at different processing levels at frequent intervals during the shelf life, community sensitization about recommended packaged water standards to improve their participation in quality surveillance and strengthening safety surveillance by Uganda National Bureau of Standards (UNBS).
Background: Chagas disease (ChD) is caused by the flagellate parasite Trypanosoma cruzi (Tc) and transmitted by triatomine insects of the Reduviidae family with the most common species belonging to the Triatoma, Rhodnius, and Panstrongylus genera, also called 'assassin bugs', "chiches" in Central America and "vinchucas" in the Southern Cone. The vectors infect their victims with the parasite by depositing their feces on the site where bite to suck their blood. The transmission can also occur via transfusions, congenitally, or orally. The poor housing called 'rancho' built with adobe and thatch infested with triatomines constitute the main location for acquisition of the parasite. It is endemic in large parts of Latin America where it is estimated about 16 to 18 million people infected. Complications lead to 20,000 deaths every year. The control of vector transmission in the entire territory of Chile, Uruguay, and Brazil and in several provinces or regions in the remaining endemic countries, has reduced its incidence. In Argentina there are still about 20 acute cases per year by this route of transmission.

Methods: A case report

Results: We report the case of a 3-year-old girl, born and resident in Buenos Aires who traveled to the rural area of Santiago del Estero Province, northwest of the country to visit her family. She was evaluated in our Unit two weeks after returning from the trip with unilateral swelling around the right eye with conjunctivitis, dacryoadenitis and submaxillary lymph node slightly painful ("Romana’s sign"), afebrile and without other symptoms. We made thick and thin peripheral blood smears where trypanomastigotes of Tc were observed. She received 60 days of oral Benznidazole with good tolerance and therapeutic response. After a year of follow up she was cured and had negative serology.

Conclusion: Travelers to endemic areas without vector control of ChD who overnight in infested houses are at risk for acquiring this parasitic infection, this situation is more likely to happen in those visiting friends and relatives in rural areas.
African tick bite fever in American travelers
J. Cahill
Travel & Immunization Center, St Luke's Roosevelt, New York, NY, USA

Background: In 2008: 40,259,650 Americans traveled internationally with 319,713 visiting Africa. In a recent analysis of the spectrum of diseases among returning international travelers, tick-borne spotted fever was (after malaria) the second most frequent cause of systemic febrile illness among those returning from sub-Saharan Africa. Although this disease has been well reported in non-American travelers, it is not as well documented and readily diagnosed in US travelers.

Methods: To further appreciate the incidence of documented cases of rickettsial infections in US travelers from Africa, a literature search using Pub Med was performed. A total of 9 articles in English were cited. Key words used were: "rickettsial", "traveler", and "Africa". Only articles pertinent to US travelers were reviewed. Articles cited were published from 2009 to 1988.

Results: The majority of spotted fever group (SFG) rickettsial infections occurring in sub Saharan Africa are from *R. africae* and to a lesser extent *R. conorii*. An outbreak of *R. conorii* occurred in 1992 in 39 out of 169 US soldier deployed on a mission in Botswana. The CDC published a summary of imported SFG rickettioses in US travelers returning from Africa from 1999-2002 with a total of only 31 cases reported over the 4-year period. A recently published study analyzing data from the GeoSentinel Surveillance Network from 1996-2008, found as many as 1.5% of all return travelers with fever seeking medical attention had a diagnosis of rickettsial disease. Of these, 82.5% has SFG rickettiosis and out of those with SFG rickettiosis 87.5% were infected in sub-Saharan Africa (South Africa, Zimbabwe, and Tanzania being the most common. Notably, of the total cases of rickettiosis reported in the series, only 27.5% were in North Americans.

Conclusion: Although there is little data on American travelers returning with African Tick Bite Fever, it should be considered more often in the differential diagnosis of traveler who has been in an endemic region presenting with fever. Of particular importance is eliciting a history of a tick bite, eschar, and visiting an endemic region such as South Africa, Botswana or Zimbabwe.
Extrapulmonary tuberculosis: FNAC diagnosis of 12 cases

O. OLWOLE
University of Abuja, Abuja, Nigeria

Background: Extrapulmonary tuberculosis is on the increase all over the world. The recent HIV and AIDS pandemic has once again brought extrapulmonary tuberculosis into focus.

Methods: A 24 months analysis of patients with palpable peripheral lymph nodes, intra-abdominal mass and breast lumps seen at the Histopathology unit of Federal Medical Centre, Lokoja, Kogi State, Nigeria. The clinical work up of patients included clinical history, ultrasonography of the abdomen, chest x-ray and fine needle aspiration cytology.

Results: There were 12 cases, 8 females and 4 males, aged 9-69 years with the mean age of 38.5 years. The frequent extrapulmonary site was lymph node in 9 (75%), breast 2 (16.7%) and liver 1 (8.3%). Only one patient was sero-positive for HIV. Two patients had breast lumps that turned out to be tuberculosis, these lumps regressed and eventually disappeared after anti-tuberculosis treatment. All the remaining patients equally did well on the anti-tuberculosis treatment and were followed up. The diagnosis was made by fine needle aspiration cytology.

Conclusion: The diagnostic dilemma posed by extrapulmonary tuberculosis in resource limited developing countries can be solved by FNAC an inexpensive and relatively less painful invasive procedure with a high diagnostic accuracy. This will ensure prompt diagnosis, treatment and thus reduce attendant morbidity and mortality.
The epidemiology of tuberculosis in Arak city, Central province of Iran from 1997-2007

A. Ramezani¹, M. Sofian², A. Aghakhani³, A. Eslamifar¹, M. Banifazl³
¹Pasteur Institute of Iran, Tehran, Iran, Islamic Republic of, ²Arak University of Medical Sciences, Arak, Iran, Islamic Republic of, ³Iranian society for support patients with infectious diseases, Tehran, Iran, Islamic Republic of

Background: Tuberculosis (TB) remains one of the most important infectious diseases worldwide. In this study we aimed to determine the epidemiology of TB in Arak city, central province of Iran.

Methods: We reviewed 789 TB cases registered in the Arak health center Information System from 1997 to 2007 to determine epidemiological characteristics, drug resistance, and rates of human immunodeficiency virus (HIV) co-infection.

Results: A total of 789 patients (301 males, 488 females) with mean age 52.91+/-2.1 were found. Of the total 90.1% were Iranian, 9.3% Afghan refugees and 0.6% were from other nationalities. 68.8% were urban and 31.2% were rural. The highest rate of tuberculosis was in the >= 61 years age group. The proportion of pulmonary and extra-pulmonary tuberculosis cases was 68.1% and 31.9% respectively. The most common extra-pulmonary sites were lymph nodes, Bone and joints and pleura respectively. 54 %( 426) of the patients were smear-positive. The rate of HIV co-infection was 0.4 %( 3) and the rate of incarceration was 1% in our study cohort. TB Incidence decreased from 14/100000 in 1997 to 8 in 2007. On average 86.2% of TB patients were cured, 1.6% transferred to another area, 0.5% had absence of treatment, 1.9% had treatment failures, 8.4% died due to TB and 1.4% died due to other causes. Multiple drug resistance was found in 0.8% (6) of cases.

Conclusion: Although the incidence of tuberculosis is decreasing, public health authorities should nevertheless consider this infectious disease as a serious problem.
Radiographic patterns of pulmonary tuberculosis in elderly patients

R. razaghi, H. R. Talari, M. Momen Heravi
kashan university of medical sciences, kashan, isfahan, Iran, Islamic Republic of

Background: Tuberculosis is a chronic disease that can cause many different pattern in chest X ray. atypical radiographic patterns of tuberculosis may be seen in elderly patients. Chest x ray has a important role in diagnosis of tuberculosis .This study was conducted to evaluate different patterns of chest X ray among elderly patients in Kashan-Iran

Methods: This descriptive study was carried out through existing data by reviewing of 100 Chest x ray of old patients with confirmed pulmonary tuberculosis. Chest x rays of tuberculosis patients were seen by radiologist and information about pulmonary involvement in chest x ray were collected and analyzed.

Results: The most common patterns were: consolidation(25%),reticulonodular (18%) and bronchectasis(13%).The frequency of atelectasis and interstitial pattern were the lowest(3%).The most common involved lobe was lower lobe. Involvement were seen in right lung 41%,left lung 40%and both lung 15%,and there was no involvement in 4% of patients .The most involved zones of lungs were:left lower lobe (36%),right lower lobe (35%),right upper lobe(27%).

Conclusion: Tuberculosis can cause many different pattern in chest X ray. atypical radiographic pattern of tuberculosis may be seen in elderly patients such as lower lobe involvement without cavity formation .So in any old patient with clinical presentation compatible with tuberculosis and above mentioned radiographic patterns tuberculosis must be suspected.
Tuberculosis and its characteristics among febrile patients with systemic lupus erythematosus receiving steroid therapy

S. M. Alavi
Ahvaz Jundishapoor University of Medical Sciences, Ahvaz, Khuzestan, Iran, Islamic Republic of

Background: The incidence of serious infections is one of the most disturbing problems in the management of patients with systemic lupus erythematosus (SLE). The aim of this study was to describe the role of tuberculosis (TB) as a cause of fever in SLE patients.

Methods: Eighty three known case of SLE patients enrolled in this descriptive study from 2000 to 2006 in Ahvaz a city in south west of Iran. Patients were diagnosed by an expert rheumatologist according to American College of Rheumatology criteria (at least 4 of 11 criteria). Diagnosis of tuberculosis was based on Iranian National Program against TB criteria.

Results: Mean age of patients was 22.2±10 years, female to male ratio was 9.2:1, mean duration of treatment was 12±3.2 months and mean of daily dose of prednisolone was 28.2±13mg. Of total 83 patients 8 (9.6%) had active tuberculosis, 5 (62.5%) pulmonary TB, 1 (12.5%) miliary TB, 1 (12.5%) pleural effusion and 1 (12.5%) TB spondilitis. One patient (12.5%) died of SLE/TB.

Conclusion: TB is one of the important causes of fever among patients with SLE under treatment of corticosteroid. In approaching febrile SLE patient TB should always be considered.
Traditional medicine for the prevention of tuberculosis disease: A pragmatic randomized folklore medicine survey in Maherpur district of Bangladesh

M. A. H. Mollik
Peoples Integrated Alliance, Dhaka, N/A, Bangladesh

Background: Bangladesh is the darling child of nature. She has made her child rich with various plants. According to World Health Organization, approximately 80% of the developing world’s population meets their primary health care needs through traditional medicine; which is also true for Bangladesh. The Bangladeshi traditional medical heritage flow in two streams; the first one is the oral folk system and the second is the codified traditional oral system. The codified system like Ayurveda, Unani, Siddha and Homeopathic have sophisticated theoretical foundations with physiology, pathogenesis, pharmacology, pharmaceutical equating with western system of medicine. But the oral folk system practiced in villages carried by million of rural households in general and the herbalists with specialized knowledge having no legal medical status in particular. The study revealed that the history of such oral folk system of medicine is not documented and as such, the valuable package of practice of medical heritage is being eroded from generation to generation. The majority of the raw materials for application and oral administration are prepared locally. Most of these raw materials are found to be of plant origin.

Methods: In the present communication; only the folklore medicine practiced in Maherpur district by some selected herbalists is discussed to treat tuberculosis disease. Plant specimens as pointed out by them were photographed and identified at the Bangladesh National Herbarium.

Results: It was observed that twenty nine plant species, which are used to treat tuberculosis disease in Maherpur district of Bangladesh. These plant species included Zingiber officinale, Cinnamomum tamala, Justicia adhatoda, Eucalyptus globulus, Ocimum sanctum, Piper nigrum, Vitex negundo, Cinnamomum verum, Piper longum, Syzygium aromaticum, Amomum aromaticum, Acorus calamus, Cinnamomum camphora, Piper betle, Saccharum officinarum, Solanum nigrum, Cymbopogon citratus, Emilia sonchifolia, Santalum album, Grewia asiatica, Fumaria indica, Prunus communis, Curcuma longa, Plantago ovata, Cocos nucifera, Coffea arabica, Areca catechu, Brassica napus, and Camellia sinensis. It was also observed that no innovative research has been done to formalize such health care system.

Conclusion: It is important that modern scientific studies be conducted on these plant species towards isolation and identification of compounds through which multi-drug resistant tuberculosis disease can be effectively treated.
Severe reactivation of tuberculosis during peginterferon-ribavirin administration for chronic HCV treatment

R. Manfredi
University of Bologna, Bologna, Italy

**Background:** Tuberculosis (T) may be reactivated following a primary, silent, and unknown T infection, when immunodeficiency (often jatrogenic in origin), or other risk factors (e.g. cancer, cachexia), become apparent. Post-primary T episodes were described also decades after a primary *M. tuberculosis* infection, in patients (p) who show apparently limited radiographic signs. Some grade of immunodeficiency may depend on the administration of associated IFN-ribavirin for an underlying chronic HCV hepatitis, as expressed by the frequent emerging of leuko-neutropenia, and altered cytokine network.

**Methods:** In a p aged >50 years with negative history of T, an occasional chest X-ray showed fibrous-calcified infiltrates. After 11 years, due to a progressive chronic HCV hepatitis, pegylated IFN-ribavirin were started for 7 months, until a sudden occurrence of cough-hemoptysis associated with a pulmonary lesion highly suggestive of T became apparent, in the same area where T reliquates were demonstrated 11 years before. A HRCT examination pointed out 2 different excavated infiltrates. Culture of sputum-BAL proved positive for *M. tuberculosis* (susceptible to all tested compounds), as Mantoux-Quantiferon assays.

**Results:** An absolute lymphopenia (966 cells/µL), prompted a T-cell subset study, which showed an imbalance of the CD4/CD8 ratio (30/45%), and a CD4 count of 290 cells/µL. Notwithstanding 7 consecutive weeks of isoniazide, ethambutol, rifampicin, and pyrazinamide administration, sputum examination remained positive, thus confirming the role of immunodeficiency is prompting a difficult-to-treat T. The adjunct of levofloxacin-amikacin-linezolid, attained clinical-bacteriological cure, after 12 weeks.

**Conclusion:** Waiting for human experimental data, two animal models demonstrated that an increased release of immunosuppressive cytokines (IL-10-TGF-β), may prompt T reactivation, while a maintained T-cell competence enhances T latency. Although a few cases of non-infectious lung involvement, interstitial pneumonia, and bronchiolitis obliterans were described during IFN therapy, reactivated T was exceptional. The expected increase of therapeutic use of IFN and potent agents for chronic hepatitis or other diseases, might support the reactivation of latent T. Medical history, Mantoux, IGRA, and imaging studies, are mandatory before starting IFN. The jatrogenic immunosuppression related to IFN-ribavirin may go beyond the expected leuko-lymphopenia, and also act against the quantitative-functional role of CD4 lymphocytes, thus playing a key role in T reactivation, when latency is of concern.
Pulmonary and disseminated tubercular disease caused by Bacillus of Calmette-Guérin administered as a local adjuvant immunotherapy of relapsing forms of bladder adenocarcinoma. A cumbersome diagnostic pathway

R. Manfredi
University of Bologna, Bologna, Italy

Background: We present two cases of patients (p) who received a prolonged intravesical immunotherapy with Bacillus of Calmette-Guérin (BCG) instillations, to treat a bladder urothelial carcinoma, relapsing after endoscopic-surgical treatment, who suffered from a severe pulmonary infection caused by Mycobacterium bovis. Their diagnostic pathway was cumbersome due to co-existing chronic pulmonary diseases (COPD), and prior respiratory disorders (including a juvenile tuberculosis). The second presented p was also interested by a genito-urinary (penile) localization of BCG infection, to attribute to local BCG dissemination.

Methods: Both p (aged 77-58 years, respectively), had radiological remnants of a prior tubercular infection, concurrently with a severe BPCO (at HRCT scan). Histopathologic studies showed granulomatous-necrotizing lesions with a diffuse macrophage, histiocyte, and giant cell infiltrate, followed by endoalveolar fibrosis in the second patient.

Results: No mycobacteria were detected at microscopy-culture, and polymerase chain reaction (PCR) assays. Our first p had a mild positive Mantoux reaction, while he tested frankly positive at the interferon-gamma release assay (IGRA), thus representing the first case of BCG-itis diagnosed also with these recent techniques. The miliary-nodular-infiltrative picture of the first p, and the granulomatous-fibrosing aspects of the second p, showed a slow but progressive amelioration during anti-tubercular therapy, but the long-term follow-up detected a persisting worsening of respiratory function parameters in the second p. When discussing the potential pathogenetic correlates between BCG intravesical immunotherapy of bladder carcinoma and disease localizations, after careful exclusion of other etiologies we have no doubt in attributing these complications to BCG, because the antigenic load caused by repeated instillations of a live, attenuated M. bovis strains (BCG), is a condition sufficient to trigger a pulmonary-systemic disease, and drive its subsequent evolution.

Conclusion: To our knowledge, only four cases of respiratory BCG-itis were reported to date (as simili-tubercular forms), two of them after periodical intravesical BCG instillations. The second presented p represents the first case interested by a dual, concurrent granulomatous BCG infections, involving both genito-urinary and lungs. Particular attention should be taken by Clinicians in collecting the history and in monitoring patients who undergo adjuvant BCG immunotherapy.
Increasing, slow response of lung tuberculosis to specific chemotherapy. Is there a role for novel antimicrobial compounds effective on Mycobacterium tuberculosis?

R. Manfredi
University of Bologna, Bologna, Italy

Background: During recent years, a progressive emerging of tuberculosis (T) occurred, related to the overall increased age of general population, primary-secondary immunodeficiencies, surgical-intensive care supports, transplantation, and recent immigration of people from T-endemic areas.

Methods: Since January 2006, we hospitalized 78 cases of pulmonary T, in over 75% of cases occurred in patients (p) immigrated from developing countries.

Results: In only 4 p resistant or multiresistant (MDR) T strains were found, while 2 p had a multi-resistant (XDR) T. Although enforcing all measures to increase p’ adherence (empowerment, use of i.v. formulations, delivery of oral drugs under direct control), over 1/3 of p had a very slow clinical-radiological amelioration (2-4 mo) (19 p of 78 even experienced an initial worsening during early treatment), with persistence of sputum and/or bronchoalveolar lavage (BAL) fluid positive for Mycobacterium tuberculosis for over 2-4 mo (mean 2.3±0.7 mo), during apparently adequate treatment. When excluding XDR-MDR p, which had very prolonged admissions (sometimes >1 y), and always deserved second-third-line drugs, in 8 more p we observed that off-label linezolid (L) adjunct together with at least 3 drugs with residual activity against T, led to a rapid clinical-radiological improvement and negative microbiological search, with consequent possibility to achieve a protected discharge, supported by a sequential, oral therapy. L was also successfully employed in all p with XDR-MDR T, when a temporarily negativization of respiratory secretions was achieved always and only after L adjunct to a combination therapy based on residual in vitro susceptibility assays.

Conclusion: Notwithstanding the maintained, extensive microbiological susceptibility of M. tuberculosis strains responsible of the great majority of cases of pulmonary T, an unexpected tendency of p to have a persistingly positive sputum/BAL and experience prolonged hospitalization for cure-isolation, was recognized in the last y. We presently lack of clinical-radiological elements predictive of this slow treatment response. The oxazolidinone L has an affordable activity against M. tuberculosis, and an extremely elevated intracellular concentration in respiratory tissues. The increasing microbiological, pharmacological, and clinical evidences may recommend the use as an off-label salvage L treatment of refractory pulmonary T, although not necessarily determined by resistant strains. To rely on controlled data, randomized clinical trials are needed.
Simultaneous ethambutol & isoniazid resistance in clinical isolates of *Mycobacterium tuberculosis*

**P. Gupta, G. P. Jadaun, R. Dass, U. Gupta, D. Chauhan, V. Katoch**
National JALMA Institute for Leprosy & Other Mycobacterial Diseases, 282001, UP, India

**Background:** There is a need to understand the nature of drug resistance patterns and predictors of emergence of drug resistance in *Mycobacterium tuberculosis*. There could be common factors/mechanisms for resistance to the drugs, isoniazid and ethambutol, both acting on cell wall. The present study was conducted to analyze the antimycobacterial susceptibility patterns of *M. tuberculosis* isolates to determine the minimum inhibitory concentrations (MICs) of ethambutol for *M. tuberculosis*; and to find out possible association of ethambutol resistance with isoniazid resistance.

**Methods:** A total of 380 *M. tuberculosis* isolates were tested for their susceptibilities to ethambutol at 2, 4, 6 g/ml, isoniazid at 1 g/ml and rifampicin at 64 g/ml using MIC method.

**Results:** 44.21, 24.73 and 14.21 per cent isolates were resistant to ethambutol at concentrations of 2, 4 and 6 g/ml respectively. At 6 g/ml of ethambutol concentration, 85.18 per cent ethambutol resistant isolates were resistant to isoniazid also. At the same ethambutol concentration a fraction of 28.75 per cent isoniazid resistant isolates were ethambutol resistant.

**Conclusion:** Ethambutol resistance was accompanied with isoniazid resistance in a large percentage of isolates whereas ethambutol resistance was weakly linked with multidrug resistance. On the other hand, association between isoniazid and ethambutol resistance was weak showing one way linkage.
Epidemiology profiles of patients and healthcare workers on supervised treatment (DOT) related to tuberculosis in the city of Guarulhos at the metropolitan area of Sao Paulo, Brazil

V. Souza Pinto, V. M. N. Galesi, M. I. P. S. Braz
Sao Paulo State Secretary of Health, Sao Paulo/SP, Brazil

Background: Setting: Public healthcare services (HCS) from Guarulhos municipality, State of Sao Paulo, Brazil.
Objective: Analyzing the profiles of tuberculosis (TB) patient and healthcare workers (HCWs) related to DOT.

Methods: Descriptive analysis using data from TB patient records and interview with the HCWs.

Results: Considering 65 TB patients and 21 HCWs profiles are demonstrated on Table 1.

Conclusion: Considering the TB patient men are more affected with medium age of 30-39 years old and an income range from 1-2 minimum salary with poor education. Regarding HCWs women working at HCS are majority with 30-39 years old and income range from 2-5 minimum salary and basic education.
Tuberculosis in the Afghan immigrants in Kerman province of Iran

H. abousaidi
faculty of medicine, rafsanjan, kerman, Iran, Islamic Republic of

**Background:** Mycobacterium tuberculosis is one of frequent germs in Iran and his neighbouring countries. This study was performed to examine the prevalence of tuberculosis (TB) in Afghan immigrants in Kerman province of Iran.

**Methods:** Total of three hundred samples were collected from Afghan immigrants and were analyzed by PCR using primers corresponding to the recF gene of *M. tuberculosis* complex.

**Results:** Our results showed that mycobacterium tuberculosis DNA was present in 36 out of 300 (12%) sputum samples. 32 out of 36 patients were women (88%) and 4 cases were men (12%).

**Conclusion:** Our results demonstrated that these immigrants are high risk for TB infection and surprisingly women are more affected. Therefore, a wide variety of strategies are needed for prevention and treatment of TB in this population.
The social representation of incentives on DOT-related tuberculosis by patients and HCWs of Guarulhos at the metropolitan area of Sao Paulo, Brazil

V. Souza Pinto, V. M. N. Galesi, M. I. P. S. Braz
Sao Paulo State Secretary of Health, Sao Paulo, SP, Brazil

**Background:** Setting: Public healthcare service (HCS) of Guarulhos municipality, in the metropolitan area of Sao Paulo, Brazil.

Objective: Analyzing the perception of incentives by patients and healthcare workers (HCWs) concerned to supervised treatment (DOT)-related tuberculosis (TB) offered to patients by HCS to improve DOT adherence.

**Methods:** Qualitative approach using interviews with patients and HCWs. The Collective Discourse (CD) allows capturing a pool of social representations, gathering answers from different individuals with discourse content of similar sense to build collective statements.

**Results:** Answers of both patients (n=65) and HCWs (n=21), in one question about incentives on DOT-related TB: ‘We offer to the patient some incentives such as basic food stuffs, breakfast and bus tickets to those who adhere to DOT. What do you think about it? Do it work or not?’ According to Table 1, the central ideas presented by patients were: (A) Basic food stuffs and breakfast are important to the poor who are the majority of TB patients; (B) DOT will be more difficult without bus tickets to the patient attend the HCS; (C) Incentives work but what keep the patient treating is his/her consciousness of their importance. Incentives work but what keep the patient treating is his/her consciousness of their importance. The central ideas presented by HCWs were: (A) Breakfast does not ‘nourish’ and could be more diversified and the basic food stuffs could have more items; (B) It works and basic food stuffs and breakfast are important to the poor; and (C) It works and DOT will be more difficult if bus tickets were not given to patients.

**Conclusion:** Incentives work. The bus tickets are of great importance because TB patient doesn’t have money to attend HCS every day. Breakfast helps especially those patients who go straight to work and basic food stuffs help a lot for those who are unemployed. Incentives are a stimulus and many patients adhere to DOT because of them. So, it is import to implement public policies regarding incentives on DOT accomplishment.
Paradoxical reaction of tuberculous spondylitis in liver transplant recipient

A. ALSAEDY, A. F. ALOTHMAN
King Fahad National Guard Hospital-Riyadh, po box 11363 Riyadh, Saudi Arabia

**Background:** Paradoxical reaction (PR) to appropriate anti-TB therapy is well-described in literature however no clear explanation was demonstrated to this phenomenon. PR in solid organ transplant recipients are reported in very few cases as case reports.

**Methods:** Case Report: 63 year-old male liver allograft recipient secondary to hepatitis C infection (cirrhosis). On January 2002, he underwent his liver transplantation with uneventful post-operative hospital course. A year later, he was admitted to our hospital complaining of progressive low back pain for five months associated with fever and night sweating with no neurological symptoms. CT-scan showed destructive spinal lesions. On January 2003, he was diagnosed as tuberculous spondylitis based on culture by isolation of mycobacterium tuberculosis MTB and was started on Pyrazinamide, Ethambutol and Ciprofloxacin. Isoniazid was added 2 months later after improvement of his liver function test. He felt better, fever subsided and there was significant improvement of his radiological spinal findings. Six months later (July 2003), he was admitted to hospital with history of headache and convulsions for 3 days despite his strict compliant to anti-TB treatment. MRI brain showed multiple small ring enhancing lesions. Patient refused brain biopsy. CT-spine was repeated and showed larger destruction of pre-existing lesions after they regressed with treatment. Repeated spinal biopsy was negative for infectious pathogens and malignancy. The previous culture was fully susceptible MTB. We continued him on intensive Anti-TB therapy assuming paradoxical reaction is the most likely etiology. Three months later (October 2003), we confirmed the paradoxical reaction by improvement of clinical and MRI findings. Total resolution of brain MRI findings and marked improvement of spinal lesions were seen after 18 months of intensive Anti-TB regimen.

**Results:** see conclusion

**Conclusion:** Discussion: We are reporting the first case of PR of tuberculosis in a liver transplant recipient following appropriate Anti-TB therapy. Timing of PR was six months differing than what is described in literature by up to three months following adequate anti-TB treatment. PR could happen in solid organ transplant recipients on immunosuppressive therapy and even at later stage of treatment that has to be differentiated from therapeutic failure.
A case of non-healing post-surgical abdominal wound in a tertiary care centre
W. RAHMAN1, V. nag2, A. BEHARI1, A. K. Maurya1, M. K. RANA3, T. DHOLE1
1SANJAY GANDHI POSTGRADUATE INSITITUTE OF MEDICAL SCIENCES, LUCKNOW, UTTAR PRADESH, India, 2Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, UP, India, 3Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India

Background: Rare case of reporting acid fast bacilli in non-healing post-surgical ulcer due to rapid growing non-tuberculous mycobacteria (RGNTM). They are ineffective treatment with standard antitubercular regimen because of misdiagnose by both clinician and laboratory persons.
The objective was to identify and determination of its sensitivity pattern of RGNTM by both broth micro dilution and agar disc diffusion method.

Methods: Pus sample was taken, firstly microscopy was done by Gram’s stain and Ziel-Neelson (ZN) method, then culture on both Lowenstein-Johnson (LJ) and in radiometric BACTEC 460 TB system (Becton Dickinson diagnostic system, USA). NAP (p -nitro - _ acetylamine - _ hydroxy –propiophenone) test disc (5 µg disc) was done and followed by culture on blood agar and MacConkey agar media for identification of species. Sensitivity was done by both Broth Micro dilution for minimum inhibitory concentration (MIC) by Sensititer (Trek Diagnostic Systems) and agar disc diffusion method.

Results: They showed rapid growing non-tuberculous mycobacteria (RGNTM) of Mycobacterium fortuitum-cheloni complex which is sensitive(S) to clarithromycin, amikacin, imipenem, ciprofloxacin, gatifloxacin, co-trimoxazole, Moderate sensitive(MS) to-Linezolid, Minocycline, and Resistant(R) to Ceftrioxone, Tobramycin, Amoxicillin-clavulanic acid and Cefoxitin.

Conclusion: Any Non-healing post-surgical wound that is not responding with antibiotic should be suspected rapid growing non-tuberculous mycobacteria (RGNTM).
Pulmonary tuberculosis in diabetic patients

N. najafi¹, R. Ghasemian²
¹mazandaran medical university, Sari, Iran, Islamic Republic of, ²mazandaran university of medical sciences, 48167-13319, Iran, Islamic Republic of

Background: To understand the influence of diabetes on the clinical and radiological aspects, and treatment outcome of pulmonary tuberculosis patients.

Methods: Records of 198 consecutive smear positive PTB patients admitted to university affiliated hospitals of Sari Medical School in Sari and Qaemshahr since 3 years ago were reviewed retrospectively. The characteristics of 52 patients with diabetes mellitus type II (PTB-DM group) were compared to 146 patients without DM (PTB group).

Results: There is no difference between clinical and radiological aspects and also treatment outcome in these two groups. In result we could understand that Diabetes has no notable effect on clinical and radiological and treatment of our patients with pulmonary TB.

Conclusion: The association of Diabetes does not alter clinical and radiological aspects and treatment outcome among PTB patients, but according to same researches in other country favorable outcomes were seen in well-controlled diabetic patients.
Clinical Manifestations and usual CXR manifestation of smear positive pulmonary tuberculosis in Sari, Iran

R. Ghasemian¹, S. alian²
¹mazandaran universtiy if medical sciences, 48167-13319, Iran, Islamic Republic of, ²sari, Iran, Islamic Republic of

Background: Clinical and radiological manifestations of Pulmonary tuberculosis are well known. But it seems that there is an increasing rate of unusual radiological pattern in immunocompetent adults with smear positive pulmonary tuberculosis (based on our experiences). The aim of the study was to analyze chest X-ray (CXR) findings and clinical pattern among immunocompetent men and women with smear positive pulmonary tuberculosis (TB) in Sari, Qaemshahr and Neka during march 2006 to march 2007.

Methods: All new cases of pulmonary TB diagnosed during 12 months in 3 districts in northern Iran (Mazandaran province) were included in a cross-sectional study. Inclusion criteria's were: positive smear of sputum and absence of any immunosuppressive state. 65 cases who admitted in university affiliated hospital of Mazandaran University of Medical Sciences, fulfilled the inclusion criteria. Descriptive methods were used for data analysis.

Results: The common presenting Symptoms were: cough %83, hemoptysis 24.6%, night sweating 55%, anorexia 60%, weight loss 73.8 %, fever 60%. Usual radiological pattern was found in 70.8% of patients (upper lobe lesion with or without the other part) and incidence of unusual radiographic pattern was 29.2 % (middle and lower lob infiltration without upper lob lesion, milliary pattern, hilar lymphadenopathy and normal CXR).

Conclusion: This study showed that TB with atypical radiographic manifestations presents more common than reported previously. This varieties of radiologic manifestations can mimic other disease entities. Therefore recognition and understanding of radiologic manifestations and complication of tuberculosis are important to facilitate diagnosis.
Tuberculosis suspected as tumour

W. ZHENG
Changhai Hospital, Shanghai, China

**Background:** In our pathologic practice, a large number of tuberculosis were previously diagnosed as tumour or mass by clinicians. We attempted to analyze the possible reasons of such diagnosis.

**Methods:** The archival pathologic data was collected and investigated. All the data was compared with the clinical diagnosis.

**Results:** The proportion of tuberculosis (TB) is ranged from 0.4% to 0.5 % of annual about 28,000 cases of surgical pathology in our hospital. All diagnoses of the registred cases were made by pathology( morphology and/or special staining ). Most of the registered cases are attributed to pulmonary TB ( 71.4% ), the rankings of extrapulmonary TB were as follows: superficial lymph node TB( 12.7 % ), bone and joint TB ( predominantly in spine, 6.1% ), kidney( 2.8%) and ovary or testis ( 2.4%) and others. Based on the questionnaire from the clinical records or patients’ feedback. One or more "masses" in the lymph nodes or organs were found in the patients without marked low-grade fever, fatigue or infected history. Such "masses" were usually found by X-ray or B-ultrasound or Computer Tumography(CT). When the negative cytologic results were available, more common, the surgical biopsy ( for the superficial lymph nodes ) or operation ( for the lungs, kidney ) was carried out in order to have an accurate diagnosis.

**Conclusion:** The main reasons are attributed to more atypical symptoms or signs occurred in the patients with TB compared to pulmonary TB; the localized focus was easy to be suspected as tumour; the routine tests or physical examination could not detect the existence of tubercular bacilli; and ignorance of the clinicians. The authors considered that the diagnosis for tuberculosis by way of such frequent surgical operations (biopsy) is not appropriate. Such clinical practice is easy to lead to medical infection or transmission. Surveillance on extrapulmonary TB is an important program with significant TB control. It is necessary to develop more accurate and less injured diagnostic methods for tuberculosis.
Utility of epidemiology, clinical, microbiology, histopathology and MRI in the diagnosis of spinal tuberculosis: A study from a tertiary care hospital from north India

V. nag, M. Kumar, R. Kumar, N. Krishnani, G. S. Babu, U. Singh

1Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, UP, India, 2SGPGIMS, Lucknow, India

Background: Skeletal involvement occurs in approximately 10% of all patients with extra pulmonary tuberculosis and half of these patients develop infection within the spinal column. The diagnosis is difficult and delay is associated with increased frequency and severity of complications.

Objective: To evaluate the utility of clinical, epidemiological, microbiological, histopathologic and Magnetic Resonance Imaging (MRI) parameters in the diagnosis of spinal tuberculosis

Methods: Specimen (pus/ fine needle aspirate/tissue) obtained from 46 patients with clinical suspicion of tubercular spine admitted in Neurosurgery ward during January 2008 to February 2009 was processed. The smear was made, stained with Ziehl Neelsen (ZN) stain and evaluated for acid fast bacilli. Culture was done in BACTEC 12B media, incubated and read at automated system. Histopathologic examination was made by presence of caseation necrosis/ granuloma/ AFB. The positive findings in magnetic resonance imaging (MRI) were noted. Clinico-epidemiological information was obtained of each patient.

Results: There were 25 (54.3%) females. Age ranged from 12 to 78 years (mean age 42.6 year). Family history of tuberculosis was present in 9(19.6%) cases; 17 (37%) cases were treated. Back pain was most frequent 43(93.5%) presentation. Bladder was involved in 14(30.4%) cases. One case (2.2%) was HIV positive. The site of involvement varied from cervical to lumbo-sacral vertebra. The commonest site involved was thoracic spine 20 (54%) cases followed by lumbar in 7(18.9%) cases. Multiple vertebrae were involved in 7(17.9%) cases. AFB was detected in 11(25.6%) by ZN smear; 16 (41%) in culture. Histopathology diagnosed granulomatous reaction/ AFB in 25(64.1%) cases. The MRI diagnosed Pott’s in 42(97.6%) cases.

Conclusion: MRI is sensitive but expensive; histopathology is nonspecific. Hence BACTEC may offer a reliable and rapid method with isolate for drug sensitivity and can provide useful treatment information in these cases.
Multidrug resistant tuberculosis (MDR-TB) in port of Buenaventura Colombia
M. Wintaco, D. Orjuela, C. Llerena, M. C. Garzon, G. M. Puerto Castro
Instituto Nacional de Salud, Bogota, Colombia

Background: According to the latest National Survey of Resistance in Colombia, was found a multidrug resistance (MDR) of 2.38% (95%: 1.58-3.57) for untreated patients and 31.44% (CI 95%: 26.14-37.27) for previously treated patients. Buenaventura is a municipality of Valle del Cauca Department, has a population of 355,736 habitants, is the most important port located on the Pacific Ocean and from there into and out products that represent 60% of the economy for Colombia. Objective: determine the susceptibility to drugs used to treat tuberculosis and genetic profiles of isolates circulating in Buenaventura town.

Methods: We analyzed 55 clinical isolates of \textit{M. tuberculosis} recorded in the Mycobacteria Group of Instituto Nacional de Salud through the Laboratorio de Salud Publica Valle del Cauca between 2006 and 2009. We used multiple proportions Canetti, Rist and Grosset for the determination to antituberculosis drugs, resistance. \textit{Spoligotyping} and \textit{MIRU} of 12 loci were used to determine the genetic fingerprint.

Results: 28 (50.9%) isolates showed multidrug resistance (MDR). We identified 19 isolates from the Beijing Family SIT code 190 and MIRU pattern 223325171431. The other families identified by \textit{spoligotyping} were LAM, T and U.

Conclusion: MDR TB is a public health problem in Buenaventura, a situation that indicates that you must strengthen the Stop TB strategy to prevent the spread of these clones in the Department of Valle del Cauca and general in Colombia. Is of relevance to establish circulating genetic patterns of tuberculosis strain, the presence of Beijing genotype has important implications for its high virulence and transmission to take public health measures.
A study of tuberculosis indicators in Prisons of Iran (2004-2008)
F. Farid¹, M. Farnia²
¹UNDP, Tehran, Iran, Islamic Republic of, ²Tehran, Iran, Islamic Republic of

Background: TB is a chronic infective disease which is one of the most important health problems all over the world. One out of three people in the world is infected with TB basil and 10 million new cases of TB are added to the previous cases annually. According to the past studies, prevalence rates in prisons are more than prevalence rate in ordinary people, because of harmful conditions in prisons. The majority of world's prisoners are 15 to 44 years old men who are greatly drug users, criminals, homeless and poor people, and illegal immigrants who are living in suburbs of big cities. This study has been done in order to show indicators TB disease status in country's prisons from 2004 to 2008. Through using its results we can prepare efficient programs to improve TB prevention and control status in prisons.

Methods: This is a descriptive study which was preformed in a 5-year period. Data was taken from reports of provincial country's prisons which were sent to the office of national prisons organization.

Results: 484 cases of TB were found in 2004. The general prevalence rate of TB was 347/100000. 459 cases of TB were found in 2005. The general prevalence rate of TB was 355.5/100000. 380 cases of TB were found in 2006. The general prevalence rate of TB was 255/100000. 284 cases of TB were found in 2007. The general prevalence rate of TB was 184/100000. 272 cases of TB were found in 2008. The general prevalence rate of TB was 164.5/100000

Conclusion: According to current information general prevalence rate of TB and its different types in Iran prisons have been decreasing from 2004 to 2008. The reasons of this phenomenon in Iran prisons can be:
Cooperation of health ministry and national prisons organization. Developing health system in Iran prisons organization. Active Case-finding among new prisoners, at a unit called entrance health control. According to the agreement, periodical active case-finding is performed every 3 to 6 months and during this process other patients are diagnosed and treated.
Background: Before the antibiotic era, sepsis by Mycobacterium tuberculosis was a severe and early complication of the first contact with the bacteria. Today, it is a rare presentation and it is usually associated to other illness. There are two ways of presentation: acute or Empis granulias and chronic or Burnand and Sayè cold granulias. Pregnancy has been considered as a cause of weakness of immune system because of the relative dysfunction of white blood cells that produce. Puerperium could make things worse because of deep hormonal changes.

Methods: Case report

Results: A 20 years old patient was admitted to gave birth a normal baby. She was anemic, 63Kg weight being her habitual weight 64Kg, fever 39°C. She repeated hyperthermia 48Hs after delivery, but she was discharged. Twenty days later, she was admitted again with abdominal pain and expansion, severe anemia, signs of sepsis, respiratory acidosis, white blood cells 3800mm3, SatO2 64%. Toracic Rx showed milliar image, abdominal Rx showed expansion of intestinal handles. Samples for culture were taken and she began treatment with 4 drugs antituberculous and widespectrum antibiotics. Tuberculin skin test and HIV test were performed but negative. Uterin legrado was performed finding granulomas and acid-alcohol resistant basillus in the sample. Ascitic, pleural, and pericardial liquid culture were positive to Koch’s bacillus. No common bacteria were isolated in the samples. She got better and was discharged 45 days later.

Conclusion: The exposed case shows a sepsis with multiorgan failure caused by hematogenous dissemination of Koch’s bacillus. The early indication of treatment was the key for patient favorable evolution. However, we believe that there were many signs during pregnancy and puerperium that could alert about the presence of the disease.
A retrospective study on treatment outcome of category II under DOTS Therapy: A six years experience at tertiary care center

S. KANT1, A. K. Maurya1, R. A. S. KUSHWAHA1, V. NAG2

1C.S.M MEDICAL UNIVERSITY UP, LUCKNOW (ERSTWHILE KING GEORGE MEDICAL COLLEGE), LUCKNOW, UTTAR PRADESH, India, 2Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, UP, India

Background: Tuberculosis (TB) remains one of the top killers in the developing world. This is especially true in India, where each year approximately two million new cases and 500,000 TB related deaths occur. Revised National Tuberculosis Control Programme (RNTCP) was introduced in India in 1993, as a pilot project but the full-fledged programme was started in 1997. The main objective of Revised National Tuberculosis Control Programme (RNTCP) is to achieve at least 85% cure rate through DOTS and case finding 70% of the estimated cases.

Aim of Study: To study on Treatment Outcome of Category II of Revised National Tuberculosis Control Programme (RNTCP) at Tertiary Care Hospital.

Methods: Directly observed treatment, short-course (DOTS) Centre, Department of Pulmonary Medicine, CSM Medical University, Lucknow, India.


The DOTS Center, Department of Pulmonary Medicine, C.S.M Medical University, Lucknow (Erstwhile K. G. Medical college) followed RNTCP guideline for assessment of outcome of treatment of 352 patients of Category II were registered for the study in the quarters (January 2002 to December 2007). Treatment Outcome of Treatment was prescribed as per world health organization treatment guidelines.

Results: In the present study, total 352 patients were registered in Cat II Regimen. Treatment success rate (cured/treatment completed) was reported in (240/352) 68.1% of the Category II patients. Default, treatment failure and deaths were reported in 17.3%, 2.8% and 11.8% patients, respectively.

Conclusion: In this study shown, high defaulter rate and low cure rate among Cat II regimen in comparison to RNTCP standard have been reflected in the study. The Important causes of Cat II were previous Cat I failure, initial wrong categorization in Cat I, initial heavy bacilli load non adherence treatment and recycling of defaulters probably responsible for low cure rate.
Trends and variations of tuberculosis in Western Iran (2003-2007)
K. jamshidi
Ilam medical university of medical Sciences, Ilam, Ilam, Iran, Islamic Republic of

Background: Tuberculosis (TB) in developing countries in particular is the major socio-medical intricate which has threatened more than one-third world’s populations. Poverty and low socio-economic status have frequently and traditionally been reported as a significant risk factor associated with TB prevalence. This retrospective cross-sectional study was undertaken to investigate trends and variations of TB in Ilam province west of Iran between 2003 and 2007.

Methods: Data was collected using a checklist from all available patients' documents in Ilam Health Centers between 2003 and 2007. Epi-Info and SPSS statistical soft wares were used for all analysis

Results: Overall, 212 doctor-diagnosed TB cases from the health records were verified in which 117 (55%) were female and majority of highly infected cases (65%) were elderly over 65 years. Majority of cases were lived in poorest neighborhoods (p=0.01). TB prevalence was gradually and significantly increasing from 2003 onward (p<0.04 for trends). More than four in every five cases, 81.1% (n=172) had pulmonary TB and the rest were non pulmonary. The women/men ratio affected by non-pulmonary TB was 2:1 (OR=2.1, 95% CI, 1.56-3.85).The TB relapse rate was also 2.5 folds higher in women compared to men (p=0.01).

Conclusion: Annually increasing trends of pulmonary TB are considerable. Elderly women lived in low socio-economic areas were more at risk for TB infection, and therefore more attentions by health workers must be given. Improved health education specified for target groups and community-based TB screening programs are recommended.
Recurrence of tuberculosis among treated TB patients in Nigeria

A. Adeyemi¹, O. A. Omolade², R. O. Raheem-Ademola³

¹Olabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State, Nigeria, ²Olabisi Onabanjo University, Sagamu, Nigeria, ³Olabisi Onabanjo University Teaching Hospital, Sagamu, Nigeria

Background: Tuberculosis is a global burden and of great concern to public health in Nigeria. Overcrowding, bad hygiene habit, malnutrition among others aid in developing the disease. Although in Nigeria, there are many organizations focusing on detecting and treating TB, very few focus on post treatment management. Many studies in Nigeria report drug resistant in TB patients, there is no report on recurrence of tuberculosis among these patients. This study intends to report the recurrence of tuberculosis among treated TB patients.

Methods: 661 patients treated for tuberculosis at National Tuberculosis and Leprosy Control Programme, Sagamu, were monitored for seven months from the time anti-tuberculosis drugs was commenced. These patients were instructed to bring their sputum samples in 3 clean sputum containers for 2 consecutive days. Smears were made and stained to detect Acid Fast Bacilli (AFB).

Results: Out of 661 patients, 95% (628) were AFB negative while 5% (33) were AFB positive. Female patients account for 54.5% (18) and 45.5% (15) were males among AFB positive patients. The recurrence is more prevalent among the age group 20-40 years.

Conclusion: We concluded that there is moderate TB recurrence among treated TB patients in Sagamu and that more study needed to be done to ascertain if this recurrence is due to drug resistance or re-infection.
Delay in detection of tuberculosis amongst patients attending HIV care clinics in Busia District, Uganda

J. Lubwama¹, A. Bagonza², G. B. Oundo³, C. Nalwadda², N. Nqobile⁴, R. Tweheyo⁵
¹Makerere University School of Public Health, Kampala, Uganda, ²Makerere University School of Public Health, Kampala, Uganda, ³Busia District Local Government, Busia, Uganda, ⁴African Field Epidemiology Network, Kampala, Uganda, ⁵Makerere University School of Public Health, Kampala, Kampala, Uganda

Background: Tuberculosis is the most common infection and leading cause of death among people living with HIV (WHO, 2007). Delayed diagnosis may be an important cause of excess mortality in people living with HIV (WHO, 2007). Despite the fact that diagnosis of TB among HIV positive individuals is difficult, delay in diagnosis of TB among HIV positive people may be influenced by both patient and health service factors. Objective; to establish the duration and reasons for delay in the detection of TB amongst HIV positive clients attending HIV care clinics in Busia District in order to devise appropriate measures to reduce the delay

Methods: This was a cross-sectional study which enrolled 32 clients and interviewed using self administered questionnaires from three HIV care clinics in Busia District and five KIIs were conducted. Quantitative data was analyzed in SPSS version 11.5 were frequencies, measures of central tendency and chi-square tests were performed, while qualitative data was analyzed manually by manifest content thematic analysis.

Results: The mean duration of patient delay amongst HIV+ patients attending HIV care clinics was 21.93 weeks [Standared deviation (SD) 37.8] and 12.78 weeks (SD 26.9) for health service provision. Over half of the respondents, (53.1%) reported 8 weeks or more as the estimated time interval between their initial consultation with a health provider and TB diagnosis. Service related factors leading to delay included; poor coordination of the HIV care teams, stock outs of supplies, excessive workload for technical personnel, inadequate laboratory and X-ray services and fear of contracting TB from the patients by the health workers.

Conclusion: The delay from both patients and health service provision is unacceptably high; operational challenges should be addressed through regular management meetings, continued medical education and recruitment of radiographers.
Utility of size of tuberculin skin test for diagnosis of active tuberculosis
F. Figueroa¹, S. Rodrigues dos Santos¹, J. B. Afiune¹, F. A. F. Melo¹, M. T. G. Savioli¹, I. S. Ogata¹, D. Rodrigues²
¹Instituto Clemente Ferreira, Sao Paulo, Brazil, ²Universidade Federal de Sao Paulo, Sao Paulo, Brazil

Background: The tuberculin skin test is one of the diagnostic tests in clinical use nowadays. However, its interpretation is a controversial theme and it presents some difficulties. It is believed that more reaction of the tuberculin indicates higher probability of the active disease, or that it will manifests in the future. The objective of this study was to assess the impact of the result of tuberculin test as diagnosis resource of active tuberculosis.

Methods: A retrospective analysis of cohort was undertaken from January of 2006 to December 2008. A total of 1,248 records of newly diagnosed tuberculosis patients were evaluated. It was excluded 632 patients whom tuberculin skin test did not perform. It were obtained medical information regarding age, sex, size of tuberculin skin test reaction, associated diseases, clinical form of tuberculosis, bacteriologic and histopathology examination of specimen and treatment outcome.

Results: The site of disease was predominantly pulmonary tuberculosis (391/69,33%), and, among extrapulmonary form (173/30,67%), pleural TB was more frequent (75/43%). Among pulmonary and extrapulmonary TB cases, 335 (85%) and 135 (90%) patients, respectively had tuberculin test reaction above 5mm. TB diagnostic was confirmed by cultures in 248 (76,54%) cases of pulmonary TB, and in 18 (10,97%) extrapulmonary cases. TB diagnostic by histopathologic exam was confirmed in 63 (15,90%) and 46 (28,05%) pulmonary and extrapulmonary TB cases, respectively. Of total patients with pulmonary TB, 199/51% was cured, the remaining 49% of cases, TB diagnostic was not confirmed or patients was transferred out. For the extrapulmonary TB, 74% of patients completed the treatment.

Conclusion: The study emphasizes that the size of tuberculin test was not more likely to contribute to indicate the treatment of pulmonary tuberculosis, however it is an important guide of diagnosis, especially in extrapulmonary forms.
Leprosy. Havana City, Cuba. 2001-2005

O. Pesant Hernandez¹, Z. O. Hernandez Gutierrez², L. Hurtado Gascon³
¹Hermanos Ameijeiras Hospital, Havana City, Cuba, ²Centro Provincial de Higiene y Epidemiología, Havana City, Cuba, ³Centro Provincial de Higiene y Epidemiología, Havana City, Cuba

Background: Leprosy is a millenary disease, by the way, with development of Cuban healthy after Revolution in 1959, it has been reported new cases of leprosy in the country, but the figures has continued being low endemic.

Our objective: To know the Leprosy behavior in Havana City between 2001 and 2005.

Methods: It was made the observational, descriptive and retrospective study of the Leprosy in Havana City between 2001 and 2005. One hundred one Leprosy patients were notified, but only 99 epidemiology searches were analyzed. The socialdemografic, clinic and epidemiology aspects were reviewed.

Results: The 30.3% were born in the Havana City and the 45.7% were born in the eastern of the country. The macula was the lesion detected in 50.7% (69 cases). The multibacillary forms were 74.7%. Late diagnostics were represented by the 56.5% and 22.2% of disability.

Conclusion: The Leprosy in Havana City has a tendency to decrease. The macula was the lesion more frequently found. The multibacillary forms were the type of Leprosy more found. Was demonstrated high incidence of late diagnosis and disability in the leprosy patients, because of the lack of conscience of the infection source.
Compliance to tuberculosis treatment: study of DOTS’ strategy at São Paulo City-SP/Brazil

M. R. Bertolozzi
University of São Paulo, São Paulo, SP, Brazil

**Background:** The compliance to the treatment is one of the main aspects in the tuberculosis control. It is linked to the AIDS epidemic, the progressive drugs multi-resistance, the increasing deterioration of life conditions, the limitations to clinical access and to the migration. Aiming to ensure an increase in the compliance rates, efforts have been taken worldwide to the implementation of the DOTS (Directly Observed Treatment Short-Course). This study (supported by Fapesp)* aims to contribute to the production of knowledge in relation to the topic, also aiming to identify the meanings of the DOTS strategy according to patients and health professionals in the central and regional areas in the city of São Paulo, Brazil, highlighting its positive aspects and its limits.

**Methods:** 22 workers and patients from the “Sé Health Coordination” in the city of São Paulo, Brazil (where the tuberculosis’ incidence is higher), were interviewed. Also, there are testifies from workers of the Center of Prevention and Control of Diseases of Health Vigilance of São Paulo’s Health Department, from September, 2004, to January, 2005. The empirical material, after being de-codified through a technique of speech analyses, was interpreted according to Hermeneutics-Dialectics.

**Results:** As a result of people condition in terms of labor and lives, those who are ill tend to experience their illnesses by establishing life projects, in which the overcoming of their illnesses is a target to be reached and the reason why they decide to confirm their compliance to the treatment. The latter is a complex issue involving the relationship between health workers and patients where the accessibility is fundamental.

**Conclusion:** The supervised treatment, despite some limited points, has proven to be a strategy that allows an increase in the compliance rate, on top of all, it was considered as a possibility of social inclusion for the studied patients.
Anti-HBs titers in vaccinated children and adolescents: Implication for booster administration

A. Ramezani¹, A. Aghakhani¹, N. Izadi², M. Sofian³, A. Khadem-Sadegh¹, A. Eslamifar¹, M. Banifazl⁴
¹Pasteur Institute of Iran, Tehran, Iran, Islamic Republic of, ²Iranian Blood Transfusion Organization Research Center, Arak, Iran, Islamic Republic of, ³Arak University of Medical Sciences, Arak, Iran, Islamic Republic of, ⁴Iranian society for support patients with infectious diseases, Tehran, Iran, Islamic Republic of

Background: Hepatitis B virus (HBV) infection is one of the most widespread infections in the world accounting for significant rates of morbidity and mortality every year. A potential problem of hepatitis B immunization is that vaccine-induced hepatitis B surface antibody (anti-HBs) titers decline to low or undetectable levels with age. The present study was designed to investigate the persistence of anti-HBs levels in vaccinated children in a low endemic area.

Methods: Plasma samples of 938 children (548 male and 390 female) between ages of 8 months and 15 years were tested for the presence of anti-HBs. Levels of anti-HBs <10 mIU/ml were considered to be negative; 10-99.9 mIU/ml protective and ≥ 100 mIU/ml highly protective.

Results: A total of 938 cases (548 male and 390 female) between ages of 8 months and 15 years were enrolled in the study. The overall seroprotection rate (anti-HBs titre ≥ 10 mIU/ml) was 59.6% (559/938) in vaccinated children. Distribution of anti-HBs titer values across three standard levels were <10 mIU/ml, 379 (40.4%); 10–99.9 mIU/ml, 349 (37.2%) and ≥100mIU/ml, 210 (22.4%). Protective antibody levels can be detected in 65% of one year vaccinees decreased to 30% in 5 years after vaccination and more dropped to 29% and 24% in 10 and 15 years after vaccination. The mean anti-HBs declined in relation to the length of time post-vaccination (65.66 ± 38.41 mIU/ml in 1 year vaccinees, 59.88 ± 44.37 mIU/ml in 5 years after vaccination, 40.37 ± 40.77 mIU/ml in 10 years post vaccination and 37.31 ± 42.91 mIU/ml in 15 years post vaccination. Seroprotection rates decreased significantly with increasing age, due to waning anti-HBs titer over time (p<0.001). There was no statistically significant difference between genders regarding to anti-HBs positivity and titer.

Conclusion: Children vaccinated against hepatitis B during infancy may show low levels of antibody during adolescence. Because the issue of booster dosing is still debatable, our data suggest that a booster dose of vaccine may be required in areas where endemicity is low. Further studies are needed to determine duration of HBV vaccine protection and the necessity for or timing of booster doses.
Evaluation of immune response against recombinant proteins HSP70 and GP63 of Leishmania parasite in vitro

M. Rasouli¹, A. Zavaran Hoseini², B. Kazemi³, A. Alborzi⁴, S. Kiany⁴, M. Kalani⁴, A. moravej⁴

¹Shiraz University of Medical Sciences-Clinical Microbiology Research Center, Shiraz, Iran, Islamic Republic of, ²Immunology Department, Medical Sciences School, Tarbiat Modares University, Tehran, Iran, Islamic Republic of, ³Parasitology Department, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran, Islamic Republic of, ⁴Immunology Department, Clinical Microbiology Research Center- Shiraz University of Medical Sciences, Shiraz, Iran, Islamic Republic of

Background: HSP70 and GP63 are presented by all Leishmania species studied so far, and are major immunogen in infections caused by the parasite. The aim of the present study was to amplify, clone and express HSP70 and GP63; and evaluate immune response against them in vitro.

Methods: L. infantum HSP70 and L. major GP63 were cloned and expressed using E. coli Rosetta and purified by HiTrap Chelating column. C-terminal of GP63 was cloned and expressed too. Peripheral blood mononuclear cells of three groups of human (recovered from cutaneous leishmaniasis, healthy with positive Leishmanin skin test, healthy with negative skin test, respectively) were stimulated with PHA, HSP70, GP63, GP63-HSP70, C-GP63, C-GP63-HSP70 to evaluate their lymphoproliferation and cytokine production (IL-10 and IFN-γ) response.

Results: We couldn't find any statistical significant differences between three human groups regarding lymphoproliferation and cytokine production after stimulation with different proteins.

Conclusion: Based on the above mentioned result we can conclude that in vitro evaluation is not a suitable method to find efficacy of the antigens. Then we suggest the usage of these two antigens in an in vivo study using animal models.
Immunization status and the effectiveness of measles vaccine in children below 5 years of age, in the city of Yaoundé

M. ZAMBO BILOA
university of Yaounde I, YAOUNDE, Cameroon

Background: We conducted a research study with the objective of measuring the rate of seroconversion and persistence of IgG in children of 09 months to 5 years, after a measles vaccine administered routinely at 09 months, in the city of Yaoundé, Cameroon. The goal of this study was to generate data on the immunization status and the effectiveness of measles vaccine in children below 5 years of age.

Methods: 80 children were grouped into six age-groups after prior consent from their parents; 10 children in the age-group of 9 to 11, 30 in the age-group of 12 to 23, 20 in the age-group of 24 to 35, 13 in the age-group of 36 to 47 and 7 in the age-group of 48 to 59 months. The children were recruited by a consecutive sampling from children attending the pediatric external consultations and the immunization services of the Mother and Child Center of Chantal BIYA Foundation. Blood samples were collected in EDTA tubes from each child and centrifuged in the laboratory to obtain plasma. The plasma of children were conserved in the Eppendorf tubes and stored at -20°C, until used for antibody assay. The concentration of IgG was measured by the Enzygnost Kit IgG, which allowed the determination of the immune status and the seroconversion rate.

Results: From the age-group 9 to 11 months, seven children (9 months old) had no residual maternal antibodie; while three children had: two of 10 months and one of 11 months, showed delayed immunization response. The negative IgG concentration for children of 9 to 11 months had a different distribution to those aged 12 to 59 months and children infected with HIV. The positive post-immunization response is only effective after 11 months. The concentration of IgG for the group of children aged between 12 to 59 months were uniformly distributed, with a seropositivity rate of 81.43%. This rate is partial (50%) in children infected with HIV.

Conclusion: In conclusion, the results of our study confirm the correct choice of the age of measles vaccination at 9 months and the judicious selection of the suppliers of the vaccine by the Cameroon health authorities.
Background: For over a decade, there is an expectation of imminent global poliomyelitis eradication, despite several near-misses. Attention is particularly focused on India, which is believed to be the last reservoir of polio. However, a serious concern is that the current definition of eradication (absence of wild poliovirus cases) ignores polio associated with the oral polio vaccine (OPV). This may prove to be the Achilles’ heel of the entire eradication initiative.

The objective was to calculate the burden and significance of polio associated with OPV viz vaccine associated paralytic poliomyelitis (VAPP) and vaccine derived polio virus cases (VDPV) in India and South-East Asia through a systematic review of literature.

Methods: Health-care literature since 1950 was systematically searched electronically through multiple databases (the Cochrane Library, Pubmed, CENTRAL, websites of WHO, UNICEF, Ministries of Health, and the lay press), to identify references to polio associated with OPV, specifically VAPP and VDPV in India and South-East Asia. Methodological appraisal of each citation was undertaken to categorise the risk of methodological bias as ‘high’ or ‘low’. Data from India was compared with other South-East Asia region countries. Trends over time were also identified.

Results: Literature search identified a total of 563 citations; however, the majority of these (93.5%) did not yield data for analysis. The remainder were based on surveillance data and methodology could not be assessed. The WHO website yielded links to the weekly vaccine preventable diseases surveillance bulletins from where VAPP-compatible cases (flaccid paralysis with a single strain of polio-vaccine virus, in the absence of wild poliovirus) could be calculated. The number of VAPP-compatible cases in India is steadily rising and is disproportionally higher compared than other SEAR countries (Table 1). With increasing use of monovalent vaccines from 2005, there is a dramatic increase in P1 and P3 VAPP-compatible cases (Table 2). Two confirmed VDPV cases were reported from India in 2009, suggesting a potential threat to achievement and sustenance of poliomyelitis eradication.

Conclusion: This systematic review highlights that vaccine-associated poliomyelitis is likely to be a serious problem in India; and neglecting it could have serious epidemiologic, ethical and economic consequences.

Tables 1 and 2
Hepatitis B vaccination in groups exposed to risk

P. Krstev¹, S. Trajkova²
¹JZU Health department - Veles, Veles, Macedonia, Macedonia, ²Hospital of Public Health, Veles, Macedonia

**Background:** The fact that more than 2 billion people in the world have serological markers which indicates infection, and about 360 million are chronically infected with hepatitis B virus and the risk of the phenomenon of the cirrhosis or hepatocellular cancer clearly points that effective vaccine is the best way to reduce incidence of the disease.

**Methods:** Presentation of our experiences of vaccination with Engerix B with special review of its reactivity and immunogenity and adverse reactions which follows at persons exposed to risk of infection with hepatitis B. It has been used data from infectious ward at JZU General Hospital Veles from 93 persons exposed to risk, with 3 doses per scheme at 0,1,6 months. Immunogenity is evaluated by detection of HbS antibodies after ending of vaccination. It has been used descriptive and analytical method.

**Results:** From 93 vaccinated medical persons are 62, of which 25 doctors, 37 secondary medical personnel and 31 members of families from the pillars of the HbS antigen. All persons were tested before vaccination and 20 of them are tested after completely realized vaccination. It has been noted seroconversion at 17(85%) while 3 people are areactors. At the same time with testing of antibodies also are made biochemical investigations of the transaminases and at not any case is registered their enlargement. At 78(84%) there are not registered any symptoms, while at 15(16%) are noted mild postvaccinal symptoms like local pain and redness.

**Conclusion:** Vaccination with Engerix B show that vaccine is safe, well tolerant and without appearance of adverse reactions. Obtained seroconversion of 85% points that represents a solid protection and prevention.
A strong immune response provoked by an envelope domain III-based chimeric peptide containing dengue virus'T and B cell epitopes
H. Cao, S. Li, W. Zhao, H. Zhong
Southern Medical University, Guangzhou, Guangdong, China

Background: There is currently no vaccine to prevent dengue (DEN) virus infection, which is caused by any one of four closely related, yet antigenically distinct serotypes, Den-1, Den-2, Den-3 or Den-4. Dengue virus infection can result in dengue fever and dengue hemorrhagic fever or dengue shock syndrome prevailed at the most of the tropical and subtropical areas of the world in recent decades.

Methods: In this research we have adopted the reverse vaccinological approach to design B- and T-cell epitope on the envelop domain _ of dengue virus 2 based on vaccine in silico using bioinformatics. Then, we confirmed that the single epitope can induce the cell and humoral-mediated immune response by ELISPOTE and ELISA. But a single epitope could not be used as a vaccine. A successful vaccine must activate B and T cells at the same time. Now, we have synthesized a chimera multiple epitopes including the PADRE (pan-DR epitope) and the T and B cell epitopes.

Results: The MS analysis showed that the sequence of the chimera multiple epitopes is the same as we expected. Moreover, we found the chimera multiple epitopes peptide can provoke a stronger immune response by lymphocyte proliferation assay and ELISA when compared to an irrelevant peptide. These results showed that the linear multiple epitope peptide not only includes T and B cell epitopes, but also includes PADRE (pan-DR epitope) which can highly bind to the HLA-DR and reduce the MHC restriction, but also it can aid the B cell epitope to activate the humoral immunity. And the multiple epitope peptide shows a strong stimulation that provoke the cell and humoral-mediated immune response comparing with the control peptide.

Conclusion: The results suggested that the peptide vaccine including both the B-cell and T-cell epitope combined with PADRE could be the most potential vaccine candidate.
Background: The human papillomavirus (HPV) infection represents one of the most common sexually infectious disease. It is spread by contact, not through sexual fluids. Hence the use of condoms, while decreasing sexual transmission, not eliminate it. There are more than 100 types of this virus, some of which are capable of producing some types of cancer, especially the uterus. Approximately 70% of these cancers worldwide are caused by HPV types, called 16 and 18. In the Canary Islands began vaccinating against HPV to all girls who met 14 years from 0 hours of January 1st 2008. The results cover the 1st cohort of girls vaccinated

Methods: We performed a letter to parents of eligible girls, which stressed the importance of vaccination. Also developed an advertising campaign in the media, and conducted training workshops on the vaccine, aimed at health professionals vaccinators from Canarias. At the same time, we established specific protocols for action on these same professionals. In the coverage indicators were used as the numerator the number of girls vaccinated with three doses and as denominator the number of girls who should receive all three doses.

Results: The total number of doses administered during the year 2008 was 20408. Moreover, the number of girls who should receive three doses was 4788, while only 72.3% of them (463 girls) received them.

Conclusion: Typically, vaccination coverage among adolescents reached in the Canary Islands, are lower than those achieved in the early stages of life. In this sense, the coverage achieved by the 1st cohort of children vaccinated in the Canaries continue this pattern. Must be increased communication efforts, both girls and their families about the benefits of this vaccinator activity.
Modern possibilities of the efficient preventive maintenances of influenza and other ARVI in children

T. Chebotareva¹, S. Karyaeva², V. Malinovskaya³, V. Lazarev⁴
¹Medical Academy of Postgraduate Education, Moscow, Russia, Moscow, Moscow, Russian Federation, ²State Educational Management of Higher Professional Education North-Ossetian State Medical Academy of Russian Public Healy Service Vladikavkaz, Russia, Vladikavkaz, Russian Federation, ³State Management of Scientific Research Institute of Epidemiology under N. F. Gamaley of Russian Academy of Medical Sciences, Moscow, Russia, Moscow, Russian Federation, ⁴State Educational Management of Higher Professional Education North-Ossetian State Medical Academy of Russian Public Healy Service Vladikavkaz, Russia, Vladivkaz, Russian Federation

Background: We studied the vaccination efficiency against influenza during combined use of subunit vaccine and immunomodulatory drug of recombinant human interferon-alpha 2b with antioxidants (Viferon). The investigation was conducted in two randomized groups of children at the age of 2-6 years old living in the ecologically unfavorable region: in the first group were 59 children receiving additionally to the vaccine recombinant _-interferon preparation in the doze of 500000 IU with antioxidants (viferon) in daily rectal introducing of suppository twice during day and night within 5 days before vaccination and the second group – 27 children received vaccine according common methodics.

Methods: The estimation of the ways influenza and ARVI prevention included registration of summarized morbidity during subsequent epidemic season (6 month) topic impairment of respiratory tract at ARVI, severity of episodes of a disease, presence of complications, as well as intercurrent ARVI during vaccinal period.

Results: It was established that the morbidity by influenza and ARVI in the first children’s group was 1.5 times lower than in the second one. In the respiratory tract topic impairment structure in the first group of the investigating children ARVI with the essential impairment of the upper divisions of the respiratory tract were prevailing (tonsillitis, laryngitis, pharyngitis and their combinations), p <0.05. Reliably more rare among vaccinated with preliminary using of interferon_ acute tracheitis and tracheobronchitis – 2.4 % against 5.9% in the second group (p <0.05) were registered. In the first group the share of mild and average forms of ARVI in catamnesis was 87.3%, whereas in the second group in 78.6% average and severe forms of the disease (p <0.05). In 11, 5 % cases with ARVI in children from II group acquired complicated course at the same time in I group complications were not registered. Intercurrent ARVI complicated vaccinal period in children from II group in 4.4 times more often than in children from I group.

Conclusion: Thus these data allow to consider expedient to carry out antiflu vaccination at children of 2-6 years old with additional use of a preparation of recombinant _-interferon with antioxidants (Viferon, Russia).
Background:
Once a bacterium reached a host surface, it must adhere to the host cell to be able to colonize on its surface. This phase is particularly important in certain areas such as mouth, small intestine, udder, and bladder where mucosal surfaces are periodically washed by fluids. In these areas, only bacteria that able to adhere to mucosal surfaces will be able to stay in the surface of tissue. The adhesion is very important in the pathogenesis of sub clinical mastitis since the adhesion process is the initiation step of bacteria colonization. S. aureus and S. agalactiae are two main agents which responsible for sub clinical mastitis in dairy cattle. Blockage of adhesion is the best strategy for inhibiting the infection process. Haemagglutinin plays a role as an adhesin in mediating the adherence of these bacteria. Bacteria adhesion could be inhibited by many factors such as specific antibody. The purposes of this research are detection of IgY against haemagglutinin of S. aureus and S. agalactiae as an anti adhesion in epithelial cells of udder.

Methods: IgY against of S. aureus and S. agalactiae were produced by using the egg of laying chickens. Purification of IgY were performed by using PEG-chloroform and Specific Antibody Test by AGPT. Adhesion and inhibition of bacteria adhesion were performed in epithelial cell of mammary gland.

Design of Research

Results: Result of this research showed that the adhesion capacity of S. aureus, without intervention of IgY, was 1668 bacteria/20 cells epithelial cells of mammary gland while the adhesion capacity of S. aureus mixed with IgY against the hemagglutinin of S. aureus was 140 bacteria/20 cells

In the other hand, adhesion capacity of S. agalactiae, without intervention of IgY, was 2138 bacteria/20 cells of mammary gland while the adhesion capacity of S. agalactiae mixed with the solution of IgY against the hemagglutinin of S. agalactiae was 121 bacteria/20 epithelial cells of mammary gland.

Result of the research

Conclusion: Adhesion of S. aureus and S. agalactiae on epithelial cell of udder could be inhibited by specific antibody against of S. aureus and S. agalactiae (IgY)
The pneumococcal diseases working group experience in Latin America

H. Vazquez, R. Ruttimann, F. Nacinovich, M. Rojas, D. Stamboulian
Fidec(Fighting Infectious Disease in Emerging Countries)/Funcei(Fundacion Centro de Estudios Infectologicos), Buenos Aires, Argentina

**Background:** The burden of pneumococcal infections in Latin America is high. *Streptococcus pneumoniae* causes annually over 204,000 cases of pneumonia and 117,500 cases of invasive disease of which more than 50% occur in the elderly. Moreover, immunization coverage is low. In a study in Argentina, 90% of 217 adults hospitalized for invasive pneumococcal disease were not immunized and only 4.3% of those with risk factors for pneumococcal infections were immunized.

The aim of the study was to raise awareness of pneumococcal disease burden among health professionals and the community in the region, to design strategies for disease prevention through immunization, to improve patient care and to provide quality medical and bacteriological service.

**Methods:** We set up a working group to designate Key Opinion Leaders (KOL) in each country and to coordinate actions as regards medical education, community education, research and epidemiologic surveillance.

**Results:** A meeting was held with KOLs from Argentina, Uruguay, Chile, Brazil and Venezuela. Medical education, in joint collaboration with Scientific Societies, is delivered through e-learning, publications, a website containing updated epidemiologic information, diagnosis and management guidelines, on-line case discussions, images and slides bank. Community oriented education comprises a website, a telephone hotline, print outs, press campaigns, television and radio programs. With respect to research, we performed survey on the use of 23 v pneumococcal polysaccharide vaccine (PPV) in adults, 9069 physicians were contacted via an e-mail containing the survey and updated information material, 1202 (13%) opened the information material and 738 (8%) answered the survey. Of these, 92% recommended the vaccine, the most common indications were respiratory diseases, immunocompromised condition and age over 65 years, the less frequent was cigarette smoking. High cost was the main reason for not prescribing the vaccine.

Future research activities include a prospective regional surveillance to determine the incidence of pneumonia in adults.

**Conclusion:** In Latin America the prevalence of invasive pneumococcal infections in adults is high. Initiatives are needed to increase awareness of the burden of disease, to improve patient care and to promote prevention through immunization.
The adult immunization working group initiative to improve vaccination rates in Latin America

R. Ruttimann¹, H. Vazquez¹, F. Nacinovich¹, C. Vujacich¹, V. Verdaguer¹, C. Torroija¹, D. Stamboulian²
¹Fidec/(Fighting Infectious Diseases in Emerging Countries)/Funcei(Fundacion Centro de Estudios Infectologicos), Buenos Aires, Argentina, ²Fidec(Fighting Infectious Disease in Emerging Countries)/Funcei(Fundacion Centro de Estudios Infectologicos), Buenos Aires, Argentina

Background: Adult immunization is not a common healthcare practice in Latin America. Morbidity and mortality rates of vaccine preventable diseases in adults are an important health problem due to low immunization coverage levels. New vaccines are available that are effective and safe for this age group. The aim of the study was to create awareness in the community and health care professionals, in order to reduce the incidence of immunopreventable infections, through the appropriate use of vaccines.

Methods: A collaborative working group (WG) between two non governmental organizations, FUNCEI and FIDEC was set up to analyze the burden of the problem of vaccine preventable diseases and organize a program on medical and community education, services and research. Since 1993 we are working on influenza, pneumococcal, Hepatitis A and B and travel vaccines. Recently, activities for HPV and Herpes Zoster vaccines were conducted. Some works are carried out in collaboration with governmental and non governmental organizations.

Results: From 1993 to 1999 national influenza immunization campaigns were organized by FUNCEI in collaboration with MoH and INSSJP (Medicare), vaccine coverage rate was increased from 59 to 619/1000 in persons over 65 years old, around 7 million doses were administered in one decade. Regarding pneumococcal vaccine, less than 10% of people in high risk groups were vaccinated. Therefore, concomitantly with the influenza campaign, a pilot pneumococcal immunization program was performed. At our travel medicine unit routine immunizations are updated and special vaccines indicated (8247 doses in 2008 at our immunization centers in Bs As). For Herpes Zoster and HPV, medical and community surveys were carried out to understand the burden of the diseases and the different strategies for immunization approach. Medical education is enhanced through website, newsletters, regional and international meetings, advisory boards among others. At the community level a press release and media communication campaign was performed.

Conclusion: The adult immunization working group strives to identify and overcome barriers to adult immunization in order to increase vaccination rates. The strategy followed by our WG improves coverage for some adult vaccines like influenza and travel vaccines and prepares the field for new vaccines coming.
A. Ghalyanchi Langeroudi¹, V. Karimi², M. Tavasoti Kheiri²  
¹tehran, Iran, Islamic Republic of, ²Tehran, Iran, Islamic Republic of

Characterization of full length Hemagglutinin gene from H9N2 subtypes isolated from Iran during 1998-2007

Background: Since 1998, Iranian poultry industry has been affected by avian influenza (AI) virus, subtype H9N2. The full-length nucleotide sequences and deduced minoacide of the hemagglutinin (HA) genes of 9 H9N2 influenza viruses isolated from broilers in Tehran Province from 1998 to 2007 were genetically analyzed.

Methods: After virus isolation, RNA was been extracted from Allantoic fluid. Full length of HA gene was been amplified by Two Pairs of Primers in RT_PCR reation. PCR product inserted to TA vector for Sequencing procedure and bioinformatic studies.

Results: The isolates possessed the two types of amino acid motif -R-S-S-R/G-L-, -R-S-N-R/G-L - at the cleavage site of HA. -R-S-N-R/G-L sequence in Iranian isolates is novel and just previously reported in Israel. Another results from this study is missing glycosylation site in some isolates in this region. Another finding is that receptor bind site is similar to H9N2 human isolates. The virus circulating in neighbouring countries and related to the earliest Iranian isolates may be considered as such progenitor. Interestingly result is that recent Iranian (2006 &2007) isolates are in new branch in Phylogenetic tree. Another result from Phylogenetic tree is that Indian isolates are near of recent iranian isolates branch.

Conclusion: The present findings also indicate that the HA genes of the H9 influenza virus circulating in Tehran province were not also well conserved and in recent years have dominant changes. According to the Phylogenetic analysis, all the Iranian isolates fall into a single lineage (G1 sub lineage of Eurasia) this may indicate the common origin of all the Iranian isolates.
An outbreak of meningial fever in Tissa block of semi tribal district Chamba, Himachal Pradesh, India, 2007

V. Katoch¹, V. ramachandran²
¹Civil Hospital Thural, Thural, Himachal Pradesh, India, ²National Institute of Epidemiology, Indian Council of Medical Research, Chennai, Tamilnadu, Tamilnadu, India

**Background:** Meningitis is an infection of the meninges, caused by several viruses and bacteria. Meningococcal disease was first described in 1805 when an outbreak swept through Geneva, Switzerland. It occurs sporadically in small clusters throughout the world and highest burden of meningococcal disease occurring in sub-Saharan Africa, which is known as the “Meningitis Belt”. Viral ("aseptic") meningitis is serious but rarely fatal in persons with normal immune systems. We investigated a newspaper report of neurological illness affecting large number of paediatric cases from villages of Tissa block in the month of September 2007.

**Methods:** Suspected cases were detected through passive case reporting and active case finding conducted at health facilities, laboratory and community. Blood samples and CSF were taken for Rickettsia specific IgM antibody detection and culture respectively. Suspected meningial fever cases were patients with sudden onset fever with any of the following symptoms; neck fall (Hypotonia), drowsiness and rash between 20 August 2007 to 26 September of Tissa health block, Chamba with no established alternative diagnosis. We conducted a case control study in five villages namely Tissa, Dhanju, Salancha, Bhanjali and Satyas.

**Results:** Of the 34 suspected meningial fever cases reported three were confirmed for Indian Tick Typhus (attack rate 9.7/ 100 population). Cases peaked on September 25, 2007. Mean age of cases was 6.3 years (range; 3-12 years) with no gender predisposition. The attack rate was highest in the age group 4-6 with one death of a female child. Odds ratio was calculated for various exposure factors among case patients. No exposure was significantly associated with the illness.

**Conclusion:** Only children were affected with neurological manifestations with no residual complications. Based on clinical, epidemiological and laboratory findings, it seems that the illness was not an outbreak of rickettsial disease, as Tissa may be an endemic area for Typhus since few samples could provide isolates for rickettsia conorii. Virology could not be done due far flung and difficult terrain of the block. Our investigation highlights the need for fully equipped public health laboratories with virology facilities at district level.
No evidence of occult hepatitis B virus infection among anti-HBc-positive blood donors in an area of low endemicity for HBV

A. Ramezani\textsuperscript{1}, M. Sofian\textsuperscript{2}, A. Aghakhani\textsuperscript{1}, N. Izadi\textsuperscript{3}, A. Eslamifar\textsuperscript{1}, M. Banifazi\textsuperscript{4}

\textsuperscript{1}Pasteur Institute of Iran, Tehran, Iran, Islamic Republic of, \textsuperscript{2}Arak University of Medical Sciences, Arak, Iran, Islamic Republic of, \textsuperscript{3}Iranian Blood Transfusion Organization Research Center, Arak, Iran, Islamic Republic of, \textsuperscript{4}Iranian society for support patients with infectious diseases, Tehran, Iran, Islamic Republic of

\textbf{Background:} Occult Hepatitis B virus (HBV) infection in blood donors is considered a potential threat for the safety of blood supply, but conclusive studies on this issue are lacking. With the development of sensitive assays to detect HBV-DNA it was shown that healthy HBsAg negative donors who have antibodies to HBV core antigen (anti-HBc) may harbor an occult HBV infection. The aim of this study was to assess the occult HBV infection in blood donors with isolated anti-HBc living in Arak city; the Central province of Iran as a low prevalence region for HBV.

\textbf{Methods:} A total of 531 blood donors out of the 7200 cases were randomly enrolled in this study between October and December 2008. Hepatitis B surface antigen (HBsAg), Hepatitis B surface antibody (anti-HBs), anti-HBc and Hepatitis C antibody (anti-HCV) were tested in all subjects. The presence of HBV-DNA was determined quantitatively in plasma samples of cases with isolated anti-HBc (HBsAg negative, anti-HBs negative and anti-HBc positive) by real-time PCR using the artus HBV RG PCR kit on the Rotor-Gene 3000 real-time thermal cycler.

\textbf{Results:} A total of 531 voluntary blood donors, with mean age 36±10.18 years were enrolled in the study. HBsAg, anti-HBs, anti-HBc and anti-HCV were found in 0.4%, 31.8%, 11.5% and 0.2% of subjects respectively. Of the 531 cases, 11 subjects (2.07%, 95% CI, 0.8%-3.2%) had isolated anti-HBc. HBV-DNA was not detected in any of the cases with isolated anti-HBc.

\textbf{Conclusion:} Our study showed that all the blood donors with isolated anti-HBc were negative for HBV-DNA and occult HBV infection did not occur in the blood donors in a low prevalence region of HBV infection.
Cellular microRNAs inhibit replication of H1N1 influenza A viruses

L. song¹, S. gao², J. WEI³, W. huang¹
¹Beijing, China, ²Institute of microbiology, Chinese academy of Sciences, Beijing, China, ³Institute of Microbiology, Chinese Academy of Sciences, Beijing, PR, China

Background: Influenza virus causes the most prevalent infection of respiratory tract in humans. Up to now, there still is no a prefect strategy to eliminate the threat of new influenza pandemic. MicroRNAs are small RNA molecules with 21~23 nucleotides in length. As more and more evidences of microRNAs might be implicated in viral infection of mammalian cells, we hypothesized that one or more miRNAs could be involved in replication of H1N1 influenza A virus.

Methods: To determine whether miRNA(s) have a direct role in the regulation of influenza virus gene expression, eight segments of influenza virus were inserted into 3'UTR of luciferase gene in the vector pRL-TK, luciferase expression from pRL-TK containing pb1 gene was lower than expression from the parent vector (pRL-TK) as measured. This indicates that pb1 gene responsible for the possible miRNA-mediated inhibition. Further, five smaller fragments dissected from the pb1 gene were individually inserted into the 3'UTR of luciferase gene in the vector pRL-TK. Among these five fragments, the GFP expression from the fifth fragment was decreased. The results suggest that the fifth fragment could harbor potential binding sites for miRNAs that could exert an inhibitory effect on the expression of PB1 protein. We predicted putative cellular miRNA-binding sites in the fifth fragments by employing the MicroInspector online program, and the putative binding sites were further verified by the ma22 and RNAHybrid online programs.

Results: We determined that the fifth fragment harbors putative miR-323, miR-491 and miR-654 binding sites. All three of these miRNAs could inhibit the expression of PB1 protein and replication of H1N1 influenza A virus effectively. The target regions of these microRNAs in pb1 gene were found to be highly conserved across different viral strains.

Conclusion: Our data indicate that manipulation of cellular miRNAs could be a novel approach for therapy influenza virus. The further experiment is going on for the final conclusions.
Background: The association of the mutations in HBsAg gene has not been studied adequately in patients with occult HBV infection (OBI). The current study was aimed to investigate the HBsAg mutation, genotype of HBV and co-infection with HCV in OBI in central part of Iran.

Methods: In this experimental study, 3700 plasma samples were examined for the presence of HBsAg, anti-HBc and HBV-DNA. The HBsAg-/anti-HBc+/HBV-DNA+ samples were regarded as OBI. Genotype of HBV was determined using Gap-PCR and RT-PCR was used for HCV detection. The direct sequencing was performed to analysis mutations of S gene of HBV.

Results: Overall, 352 (9.5%) cases were HBsAg-/anti-HBc+ of which HBV-DNA was detected in 57 (16.1%). All of the patients carrying D genotype and direct sequencing indicated two mutations out of _-determinant range. Moreover, none of the OBI patients had HCV infection.

Conclusion: The absence of mutations in a-determinant of HBsAg confirmed the fact that this antigen could be detected by commercial ELISA kits; thus, it can be concluded that suitable amount of HBsAg to be detected by ELISA was not expressed by HBV in the OBI patients. Low level expression of HBsAg might be related to D genotype of the virus and it seems that this is not related to HCV infection.
Ethnomedicinal survey of medicinal plants used as remedy for hepatitis B in Mirpur area of Dhaka city, Bangladesh

M. A. H. Mollik
Peoples Integrated Alliance, Dhaka, N/A, Bangladesh

Background: Hepatitis B is a virus, which causes Hepatitis B infection. Hepatitis B is one of the world’s most common infectious diseases. Infection can lead to severe liver disease, which may last throughout a patient’s life. Around twenty five percent of carriers will develop serious liver disorders, including chronic hepatitis, liver cirrhosis, and primary liver cancer. More than one million deaths per year are recorded to hepatitis B infection. Children, particularly new born, are at the high risk of being infected by Hepatitis B (approximately ninety percent). As for the children, the trickiest problem is that the disease is seen asymptomatic in most of the cases. Since there is no effective treatment for the disease, the best option to prevent the disease remains traditional medicine. To document the ethnomedicinal information on Hepatitis B treatment with the goal of eventually testing the medicinal plant extracts for antiviral activity. An ethnomedicinal study has been carried out in Mirpur area of Bangladesh, a small area located in Dhaka city, with 58.66 square kilometers and 641,630 inhabitants.

Methods: Using ethnomedicinal survey list, information is gathered through personal interviews with traditional medical practitioners, community elders, and patients. Medicinal plant samples were photographed, collected, deposited and identified at the Bangladesh National Herbarium. The names of twenty nine medicinal plants were obtained.

Results: These medicinal plants (with parts used given in parenthesis) included Emblica officinalis (fruit), Eclipta alba (leaf), Panax quinquefolius (whole plant), Camellia sinensis (leaf), Mentha spicata (leaf), Mangifera indica (fruit), Phyllanthus niruri (whole plant), Curcuma longa (tuber root), Lactuca sativa (leaf), Olea europaea (fruit), Withania somnifera (whole plant), Citrullus vulgaris (fruit), Ziziphus jujuba (whole plant), Ananas comosus (fruit), Abrus precatorius (root bark), Boerhaavia repens (leaf), Aloe barbadensis (leaf), Swertia chirata (whole plant), Tamarindus indica (fruit, seed), Zingiber officinale (tuber root), Cicer arietinum (seed), Citrus aurantium (fruit), Cucumis sativus (fruit), Sterculia foetida (fruit), Cocos nucifera (fruit), Saccharum officinarum (stem juice), Coffea arabica (seed), Allium sativum (tuber root), and Amaranthus gangeticus (leaf, stem).

Conclusion: The ethnomedicinal data generated form the basis for pharmacological evaluation of the medicinal plants collected to establish their potential in the treatment of Hepatitis B.
No detected HBV-DNA in hemodialysis patients infected by HCV in Kerman province of Iran

G. hassanshahiraviz
faculty of medicine, rafsanjan, kerman, Iran, Islamic Republic of

Background: End-stage renal disease patients on chronic hemodialysis patients are at risk for both hepatitis B virus (HBV) and hepatitis C virus (HCV) infection. Although the prevalence is unknown in these patients, occult HBV infection is frequent in subjects with chronic HCV infection. This project was aimed to investigate the prevalence and clinical impact of occult HBV infection in hemodialysis patients with chronic HCV infection.

Methods: In this cross-sectional study we have totally examined 90 patients to have HBV and HCV infection by PCR and RT-PCR, respectively, in Kerman, Iran. ELISA system (RADIM, Italy) used to detect anti-HBc, anti-HBs and HBsAg. Statistical analyses were done using t-test and Chi-square methods

Results: We found that 30 (33.33%) cases out of 90 were infected by HCV but HBV infection was not seen in HCV infected patients. Our findings also showed that none of samples were HBsAg positive but 10 (33.33%) out of 30 HCV-RNA positive were anti-HBc positive and 12 (40.7%) out of 30 patients were positive for anti-HBs.

Conclusion: prevalence of hepatitis C infection is very high in hemodialysis patients and based on other studies our results showed that the prevalence of HCV infection in Kerman is very high. In contrast with other studies HBV-DNA in these patients could not be detected, hence, it seems that occult HBV infection isn't frequent in Iranian hemodialysis patients with chronic HCV infection.
Hepatitis B virus: Molecular epidemiology in two Afro-Venezuelan populations of Falcon state

D. Martinez¹, R. Hernandez², F. Pujol³
¹Universidad Nacional Experimental Francisco de Miranda, Coro, Falcon, Venezuela,
²UNEFM, Coro, Venezuela, ³IVIC, Caracas, Venezuela

Background: The genome of the HBV is a little genetic variability that the RNA virus, however, the replication of this virus for action of the DNA polimerase, confers a potential of more genetic variability that that of other virus DNA. The genotype of the VHB can offer data related with the evolution of the characteristic illness of each genotype. In Venezuela exist three focuses of high endemicity reported in indigenous communities.

Methods: A cross section study identifying the prevalence of the active infection for the VHB and the molecular epidemiology was characterized.

Results: 56 invidious habitants of Macuquita and 59 of Macanillas were evaluated, representing in each case 25% of the population's total in study. Just one (1) individual in total, was positive for AgsHB, representing 1.79% of the individuals evaluated in that community and all the studied individual 0.87%. The viral DNA was amplified by PCR and comparison with the Gene-bank determined that the isolated corresponds to the 'F' genotype.

Conclusion: The analysis of the genetic variants of the VHB has allowed to establish the prevalence of active infection in these communities, to study the presence or not of autochthonous variants of the VHB and to contribute data that allow in a future to contribute to establish the relationship between the evolution of the infection and the viral genotype.
Severe, extensive psoriasis occurring during chronic HCV co-infection, treated with pegylated-interferon plus ribavirin, supported by neutropenia rescue operated with frequent filgrastim administration. Pathogenetic considerations

R. Manfredi
University of Bologna, Bologna, Italy

**Background:** Associated treatment with pegylated interferon plus specific antiviral compounds significantly improved the prognosis of chronic hepatitis C and hepatitis B even when an underlying HIV infection is of concern, although antiviral drugs (especially interferon and its derivatives), tend to be myelotoxic and also some rescue treatments, like human recombinant granulocyte colony-stimulating factors (G-CSF, filgrastim or lenograstim) (which are extensively administered in order to correct neutropenia induced by antiviral therapy), may also be involved in prompting or exacerbating cutaneous psoriasis and its systemic complications.

**Methods:** A representative case report of a HCV-monoinfected woman with no personal and familial history of psoriasis, who suffered from a chronic, progressive, evolutive hepatitis C, underwent long-term treatment with combined pegylated interferon plus ribavirin, and resorted to multiple cycles of G-CSF (filgrastim), in order to recover a severe, recurring granulocytopenia caused by antiviral therapy itself, and to maintain an effective dosage of both anti-HCV antivirals.

**Results:** Five months after treatment initiation, she suddenly developed an extensive and severe cutaneous psoriasis, which did not benefit from all attempted local therapies, and improved only after specific cyclosporin treatment. Anti-HCV therapy was first interrupted, and then continued with a lowered dosages of peg-interferon and ribavirin, so that a sustained anto-HCV therapeutic response was not obtained.

**Conclusion:** From a pathogenetic point of view, in our case it remains extremely difficult to distinguish the role of pegylated interferon from that of the accompanying ribavirin, from that of the frequently administered granulocyte growth factor (filgrastim in our case), since all mentioned drugs were administered concurrently during many months, and according to the existing literature evidences, all of them have a potential to induce/exacerbate psoriasis as a potential untoward effect in subjects suffering from chronic hepatitis. Cyclosporin treatment obtained a stable remission of this last severe cutaneous complication, but the efforts to contain the progression the underlying evolutive hepatitis C were blunted by the difficult-to-treat genotype 1 HCV infection, and the frequent need to lower drug dosages and/or to interrupt antiviral therapy, because of initial myelotoxicity and subsequent cutaneous complications, probably driven by anti-HCV therapy itself.
Spontaneous clearance of HCV in a patient with HIV infection and a concurrent, never treated evolutive chronic HCV hepatitis, after even two decades of co-infection

R. Manfredi
University of Bologna, Bologna, Italy

Background: The reciprocal virological-immunological interactions between HIV and HCV, as well as the effect of antiviral therapies, are still poorly known. A rare case report of spontaneous HCV clearance occurred in an ex-IVDA co-infected with HIV-HCV since 20 years, and never treated for HCV, is presented.

Methods: A 49-year-old ex-IVDA patient (p) tested HIV-HCV positive since 1989, and was treated for HIV disease since 1990 with limited compliance until 2 years ago. He never attained undetectable HIV viremia until the last 6 months, although CD4+ T-lymphocyte count steadily remained >300 cells/µL.

Results: Until this last semester, against medical recommendation, our p continued alcohol consumption and irregular drug addiction. Serum transaminases showed fluctuating values (>2-3.5-fold normal levels), while HCV replication was confirmed by values of 1,200-4,000x10³ IU/mL. During the last 6 months, our p first abandoned its former lamivudine-zidovudine-nevirapine therapy, leading to a combination including 2 novel nucleos(t)die analogues (tenofovir-emtricitabine), associated to the protease inhibitors (PI) lopinavir-ritonavir, and finally in the last 3 months, due to gastrointestinal intolerance-hypertriglyceridermia, he introduced fosamprenavir-ritonavir, instead of lopinavir-ritonavir. Already after lopinavir-ritonavir use, our p attained undetectable plasma HIV-RNA levels (confirmed thereafter), while CD4+ count showed the greatest values even registered (513-662 cells/µL). During 2 subsequent controls, qualitative HCV viremia tested negative for the first time, concurrently with normal transaminases.

Conclusion: Single cases of apparent disappearance of chronic HCV infection in HIV-HCV co-infected p in absence of anti-HCV therapy were described anecdotally. A role of anti-HIV therapy (without reference to specific drugs-associations), and that of a concurrent, significant immune recovery was often claimed. The eventual role of HIV PI, although a negligible direct anti-HCV is known, is still debated, depending on the direct-indirect role possibly played by PI in the dynamics of HIV-HCV co-infection. Fosamprenavir is a PI with contained liver toxicity, thus recommended in p with a concomitant chronic hepatitis/cirrhosis. A systematic revision of safety databases of fosamprenavir in HIV-infected p with chronic viral hepatitis (to detect eventual virological-immunological changes of the concomitant HCV hepatitis), and a systematic appraisal of all literature anecdotal case reports, may shed light on novel research targets in this relevant, but somewhat unexplored situation.
The most common complications at mumps infection
S. Miskova, S. Trajkova, S. Bisinova - Eftimova
Hospital of Public Health, Veles, Macedonia

Background: Mumps is an acute viral disease, that affects parotid glands with risk of complication to other organs like testes, ovaries, pancreas and the central nervous system. AIM: To present the patients with mumps, hospitalized in the department of infectious diseases – Veles, with a special view to epidemiological characteristics and expected complications.

Methods: We use the hospitals materials of patients in our department in the period of the last two years (2007 – 2008). They were analyzed with epidemiological, clinical, laboratory – biochemical and eho investigations. Retrospective method was used.

Results: We have 377 patients in our evidence. 143 are treated in our ambulance and the other 234 are hospitalized because of types of clinical symptoms and complications. In 2008 in Veles and its region (Kavadarci, Negotino Sv. Nikole), with 104 patients, an epidemic was pronounced which has not yet finished. The patients from the city are dominant, with an age group from 14 – 24. Because of complications of orchitis, male patients are dominant with 88,9% and female patients with 11,1%.

51,7% have orchitis like a complication, 2,6% are with meningissmus, 0,4% are with pancreatitis and the other 45,3% are without complications.

According to the place of living 56% are from Veles, 33,8% are from Kavadarci, 5,1% are from Negotino, 4,7% are from Sv. Nikole and 0,4% are from Radovis.

Conclusion: In the last two years the number of patients with mumps has increased, with many complications and relatively severe clinical symptoms. That is the reason of our belief that the immunological response with MRP vaccine is with limited quality.
Molecular epidemiology of HCV infection in children

M. Pawlowska, W. Halota
Collegium Medicum N. Copernicus University, Bydgoszcz, Poland

Background: HCV genotypes play important role in natural history of HCV infection. The aim of the study was assessing of the prevalence of HCV genotypes in children with chronic HCV infection in last 7 years.

Methods: In the years 2003 – 2009 we evaluated HCV genotypes in 263 children. The examinations were performed with Linear Array HCV Genotyping Test.

Results:

<table>
<thead>
<tr>
<th>Year</th>
<th>n</th>
<th>HCV genotypes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>2003</td>
<td>50</td>
<td>31 (62%)</td>
</tr>
<tr>
<td>2004</td>
<td>47</td>
<td>26 (55%)</td>
</tr>
<tr>
<td>2005</td>
<td>27</td>
<td>19 (70%)</td>
</tr>
<tr>
<td>2006</td>
<td>30</td>
<td>23 (77%)</td>
</tr>
<tr>
<td>2007</td>
<td>24</td>
<td>16 (67%)</td>
</tr>
<tr>
<td>2008</td>
<td>47</td>
<td>32 (68%)</td>
</tr>
<tr>
<td>2009 (I-X)</td>
<td>38</td>
<td>28 (74%)</td>
</tr>
<tr>
<td>Total:</td>
<td>263</td>
<td>175</td>
</tr>
</tbody>
</table>

Conclusion: In children with chronic hepatitis C dominated genotypes 1 and 4 HCV. During the examined period molecular epidemiology of HCV in children was similar.
Background: Borna Disease Virus (BDV) is a neurotrophic virus and causes Central Nervous System (CNS) diseases via immune system. BDV may persist in animals with natural and experimental infections and lead to changing brain cell functions and may cause neuron development defects and psychiatric diseases. In this study, we aimed to investigate whether BHV has a role or not in schizophrenia etiopathogenesis by using serological and molecular test methods.

Methods: 207 schizophrenia patients who were diagnosed with the DSM IV criteria and 131 patients with 137 healthy control groups were included in this study. The sera samples of the all groups were studied for BHV IgG by ELISA method and their plasma samples were studied for BHV RNA by RT-PZR.

Results: We detected BHV-IgG positivity in 66(32%), 17 (13%) and 19 (14%) of the 207 patients with schizophrenia, 131 patient control and 137 healthy control individuals, respectively. A statistically significant difference was detected between patient and control groups p<0.001). No BHV RNA positivity was detected in any of all groups. We also detected a statistically significant difference between man and females in schizophrenia and control groups for BHV IgG positivity (p<0.05). BHV IgG seropositivity was detected higher in males than women. A statistically difference was detected between 35-50, 51-65 age group individuals with schizophrenia and 35-50, 51-65 age healthy control group individuals for BHV-IgG seropositivity (p<0.05), this difference was not detected in 25-34 age group individuals (p>0.05). To be 51-65 years old was found particularly as an independent risk factor in BHV and schizophrenia causal relationship. Close cat contact was also statistically significant found between patient and control groups on behalf of patients with schizophrenia (p<0.001).

Conclusion: As a result, in spite of the detection a significant relationship between BHV and schizophrenia in studies based on serological methods, unfortunately we did not detect supporting data from the studies based on molecular methods like PCR. We suggest that new matched and serial clinical prospective cohort case-control based seroepidemiological/molecular studies were needed in order to clarify this relationship and also clinically-controlled experimental studies were needed with the usage of anti-psychotic and antivirals by monitoring the BHV-IgG antibody responses.
The health-related quality of life in mothers of surviving deaf-blind adult children with congenital rubella syndrome

N. Armstrong
Molloy College, Rockville Centre, ny, USA

Background: Research indicates that parenting children with disabilities is associated with impaired physical functioning and that the mothers experience the majority of the negative effects.

Methods: A cross sectional design with all participants having surviving CRS children born from the 1963-1965 epidemic. Demographic information was incorporated into a self-administered maternal questionnaire along with three established instruments: The Medical Outcomes Study 36-Item Short-Form Health Survey, Caregiver Strain Index (CSI) and the Modified Barthel Index (MBI).

Results: Maternal CSI scores were significantly associated with the HRQOL domains F (13, 273) = 67.175 p< .001. Mothers who experienced high levels of caregiver stress had a poorer overall quality of life than those with lower levels of stress. The deaf-blind adult child’s with CRS functional ability (MBI) was also significantly associated with the maternal HRQOL domains F (22, 263) = 17.03 p< .001. Mothers of adult deaf blind children with low functional ability had poorer overall quality of life than those with higher ability. The communication method used between the mother and the deaf-blind adult child with CRS was significantly associated with the HRQOL domains. Mothers who communicated with American Sign Language (M= 80.39, SD= 20.8) had better overall quality of life scores than those mothers who used gestures (M= 31.49, SD= 32.57), F (8, 277) = 17.471, p < .001. The deaf-blind adult child with CRS behaviors were significantly associated with the maternal HRQOL domains with the largest difference between the adult child exhibiting no apparent behavior (M= 89.77, SD= 11.7) to those adult children presenting aggressive behavior (M= 30.95, SD= 30.37), F (7, 279) = 21.130 p < .001.

Conclusion: As the prevalence of children with disabilities continues to increase, so does the demand for health care professionals who understand the unique needs of caregivers. As these children transition to adult care, professionals must understand the impact the special needs have on the mother and be able to provide the care and resources needed to bridge the transition and support the continued care.
Contribution on criptogenic hepatitis B in subjects with different pathologies

N. Como¹, A. Kica², D. Kraja³, A. H. Harxhi⁴, S. Cibuku², E. Meta², K. Duraku², M. Josifi²
¹University Hospital Centre "Mother Theresa", Tirana, AL, Albania, ²HUC, Tirane, Albania, ³Faculty of Medicine, Tirane, Albania, ⁴Ministry of Health, Tirane, Albania

**Background:** The aim of this article is the recognition of epidemiological aspects of the pathologies where criptogenic hepatitis B (cHBV) was installed and also its gravity. The material consists in 45 cases with active cryptogenic hepatitis B, 16–86 years old, during 2000-2009. We have defined cHBV, the case with HBsAg negative, anti-HbcIgG, DNA positive.

**Methods:** The cases were completed with hepatic tests, HBV markers and HBV-DNA. During the time of basic disease diagnostication, we have separated in quiet hepatitis (normal tests) and active hepatitis (altered tests). The quiet cases, with alternate hepatic tests, after start of therapy for basic disease, were completed with HBV markers, with selection cHBV cases, that we defined as activated after specific treatment. In active cases, we have investigated the panel and we have selected active cryptogenic cases.

**Results:** Epidemiological aspects:

According to age-group:

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>16-24 years old</td>
<td>2</td>
</tr>
<tr>
<td>21-30 years old</td>
<td>6</td>
</tr>
<tr>
<td>31-40 years old</td>
<td>16</td>
</tr>
<tr>
<td>41-50 years old</td>
<td>10</td>
</tr>
<tr>
<td>51-60 years old</td>
<td>6</td>
</tr>
<tr>
<td>61-70 years old</td>
<td>3</td>
</tr>
<tr>
<td>71-80 years old</td>
<td>1</td>
</tr>
<tr>
<td>81-90 years old</td>
<td>1</td>
</tr>
</tbody>
</table>

Gender related: 23 female and 22 male.

Nosological aspect:

Concomitant pathologies with cHBV affected 6 systems:
- respiratory 4 cases: TBC 2, sarcoidosis 2
- locomotory 7 cases: rheumatoid arthritis 4, systemic eritematos lupus 1, chronice brucellosis 1, morbus Horton 1
- endocrine and metabolic diseases 5 cases: diabetes mellitus 2, thyroid Ca 1, tirotoxicosis 1, thyroiditis 1
- urogenital 8 cases: uterin Ca 2, prostatic Ca 2, gl. mamae Ca 4
- digestive 8 cases: colon Ca 2, sprue tropical 2, M. Chron 1, hemorrhaghic colitis 3
- hemopoetic and immune 13 cases: lymphoma 4, tricoelucosis 1, chronic mieloid leukemia 1, hypogamaglobulinemia 1, alfa heavy chains disease 1, status after transplant 1, leishmaniasis 1, HIV 3.

Clinical aspects:
- icteric hepatitis 18 and anicteric 27 cases. Mild forms 22 cases, moderate 20 and severe 3 cases.
- 13 cases with cHBV were detected during the time of basic disease diagnostication and 32 cases after its therapy.

**Conclusion:**
1- cHBV was found in all ages; was predominated the age group 31-50 years old, 57.8%.
2- The frequency of cHBV was the same in both sex.
3- cHBV was associated 25 nosologies; where predominated the tumoral pathologies, 37.8%.
4- cHBV was represented with different clinical forms.
5- 71.1% of cHBV were identified after basic disease treatment.
Dynamic of PEG interferon-related pathologies, which induced interruption of treatment, in a patient with viral hepatitis C

N. Como 1, D. Kraja 2, P. Kapiszy 3, A. Kica 4, E. Meta 4, K. Duraku 4, R. Petrela 1, V. Ostreni 4
1 University Hospital Centre “Mother Theresa”, Tirana, AL, Albania, 2 Faculty of Medicine, Tirane, Albania, 3 Service of Pulmonary Diseases, Tirane, Albania, 4 HUC, Tirane, Albania

Background: Our contribution on recognising the dynamic of pathologies that appered during the treatment of HCV with PEG Interferon.

Methods: Case Report: The patient, 57 years old, female, with chronic HCV (IgM+, IgG+), genotypes 1 b, with persistent hypertransaminasemia (AST 220 U/L, ALT 280 U/L, INR 2.5 under acenocoumarol therapy for permanent atrial fibrilation), viral load 2.6 x 105 copies/ml, was started treatment with PEG Interferon 180 mcg 1x/wk and Ribavirin 1200 mg/day, which normalized the transaminases after 2 months. The treatment was well tolerated until 6 months; later appered the following pathologies:
- in the 6-th month: Candidiasis mycocutaneous (mouth, lips, interdigital plicae of hands and foot), that improved after treatment with fluconazol 400 mg/day, after 2 weeks.
- in beginning of the 7-th month: severe ulcerose, erosive Microangiopatia of hands fingers cheekbone appeared, resistant to dermatological treatment.
- in the middle of this month a flu-like syndrome (febril traceobronchitis) appered, followed with F.U.O and later with febrile bilateralis nodularis Pneumonia, that conceived like Sarcoidosis (based in inflmatory biologics indecs and thorax C.T). It was sensible to corticotherapy 40 mg/day, but appered a severe Hiperglicemia, that improved with insulinotherapy.
- in the 8-th month, after the 5.5 months pause, high hipertransaminasemia reappers, that was considered as HCV reacutisation under elongated corticotherapy, therefore we decrease the cortisone dose. But after 14 days was reacutisated the sarcoidosis (increase of fever and respiratory symptoms) refractory to antibacterial and symptomatic treatment.
- in the 9th month we stopped PEG Interferon therapy, because of microangiopatia, hepatitis, hyperglicemia, sarcoidosis, became undominated under PEG Interferon-Cortison therapy. 4 weeks after PEG-Interferon interruption we saw improvement of microangiopatia, which was cured completely in the following days.
Sarcoidosis was under complete control under corticotherapy just like hiperglicemia.

Results: Actually, the patient is without Interferon, without corticotherapy and the transaminases fluctuate from normal until 2-3 fold of norme.

Conclusion: Should we restart the treatment with PEG Interferon in cases like this?
Specific knockdown of MEK1 and MEK2 demonstrates differential contribution for the two kinases in Herpes Simplex Virus type 2 (HSV-2) replication

H. Zhang¹, Z. Luo², Y. Peng¹
¹Peking University Health Science Center, Beijing, China, ²Boston University School of Medicine, Boston, MA, USA

Background: Recent studies have shown that Raf/MEK/ERK signal pathway consisting of Raf, MAPK/ERK kinase (MEK) 1/2 and ERK1/2 plays an essential role in HSV-2 replication, which accounts for about 2/3 of all new genital infections, and the most common cause of neonatal herpes. Studies have indicated that HSV-2 proteins activated Raf/MEK/ERK signal pathway as a key step for its replication, which was inhibited by MEK specific inhibitor U0126. MEKs comprising two isoforms, MEK1 and MEK2, play a key role in connecting the Raf/MEK/ERK signaling network. Recent studies have suggested that the MEK kinases are not functionally redundant but might have very different roles. In addition, little is known about the specific contribution of MEK1 and MEK2 to virus replication. Thus, we used the RNAi technology to specifically silence MEK1 and MEK2 expression in human embryonic kidney (HEK) 293 cells, one of permissive cells, in order to assess their roles in HSV-2 replication in vitro.

Methods: siRNAs were transfected into HEK293 cells. Cells were then infected with HSV-2. At different time points, cells and supernatants were collected separately. Cellular proteins and viral proteins were analyzed by Western blot. Cytotoxic effect (CPE) was observed by microscope and viral infectious titration in supernatants was detected by end-point assay. Results: Activation of the ERK pathway was required for HSV-2 replication which was severely suppressed in the presence of the MEK-specific inhibitor U0126. Silencing MEK1 expression inhibited activation of ERK signal pathway induced by HSV-2 replication (Fig.1B) and caused a marked inhibition of viral titers, viral proteins (Fig.1E,1F), whereas knockdown of MEK2 had little effect (Fig.1E,1G), despite that it also inhibited the virus-induced ERK activation (Fig.1D).

Differential effects of MEK1 and MEK2 on ERK activation in mock- and virus-infected cells and on HSV-2 replication. A, B and C,D HEK 293 cells were transiently transfected with siMEK1 and siMEK2. E,F and G Viral titers, viral proteins were assayed. Conclusion: Our study demonstrates that the different functions between MEK1 and MEK2 subtypes on HSV-2 replication. MEK1 plays a key role in the replication of HSV-2, suggesting that MEK1 could be a potential target to develop new safer anti-HSV-2 drugs.
Clinical features of focal forms of tick-borne encephalitis

A. Bondarenko, K. Kontyakova, E. Tikhomolova, I. Zykova, S. Abbasova, O. Ezhova
Kirov State Medical Academy, Kirov, Russian Federation

Background: Tick-borne Encephalitis (TBE) morbidity in Kirov region (it’s situated in the northeast of the European part of Russia) 4-times exceeds the average morbidity rate in Russia (in 2008–9.6 and 1.98 per 100 000 pro tanto). In comparative analysis of the disease structure in 1996-1998 and in 2006-2008 it was revealed the 7-times increase of severe encephalitic forms (from 4.2% to 28.2%, p<0.001). The aim of our research was to analyze clinic-laboratory features of focal forms of TBE.

Methods: 33 patients (47.2±2.8 years old) of Kirov Clinical Hospital of Infectious Diseases was study in 2006-2008. Evaluation for TBE included epidemiological history, clinical symptoms, laboratory and serological tests (IFA) in dynamics.

Results: In the structure of focal lesions the meningoencephalitis composed 48.5%, polioencephalomielitis-24.2%, poliomyelitis-18.2% and polioencephalitis-9.1%.

Meningoencephalitic form (n=16) characterized by the impairment of consciousness in half of the cases, hyperkinesia (56.2%), convulsive syndrome (31.3%). Involvement into pathologic process of craniocerebral nerves happened in 62.5% of the patients, the development of slight central monoparesis-in 18.8%. The meningoencephalitic form had relatively favorable character and ended with full recovering in 43.8% cases or with asthenovegetative syndrome in 56.3%. The polioencephalomielitic form (n=8) had more severe clinical course and often lesion of a bulbar group of cranial nerves (75% of patients). Once there was a lethal termination, 87.5% had flaccid paresis and muscular dystrophy. Poliomyelitic form (n=6) in 83.3% cases finished by flaccid mono- or paraparesis of upper limbs and muscular dystrophy. 33.3% patients had progressive clinical course. Polioencephalitic form (n=3) was characterized by upper spinal lesion and finished by full recovering.

In blood test we found neutrophilic leukocytosis 12.3±0.4x10^9/l in 66.7% of the patients, lymphocytopenia; ESR was 23.9±3.5 mm/h. In the analyses of the spinal fluid neutrophilic or mixed pleocytosis was registered in 48.1% cases (twice more often than in the case of meningeal form, p<0.05).

Conclusion: Thus polioencephalomielitic and poliomyelitic forms could be regarded as prognostically the most unfavorable. The criteria of development of focal forms are leukocytosis in the general blood test on the first week of the disease and neutrophilic pleocytosis in the cerebrospinal fluid.
A case of misdiagnosed infectious mononucleosis
X. Doçi¹, A. Hatellari²
¹Durres Regional Hospital, Durres, Albania, ²Durres Regional Hospital, Durres, Albania

Background: Infectious mononucleosis or “kissing disease” is result of primary infection with EBV. Triad of fever, lymphadenopathy, and pharyngitis are noted in more than 50 percent of patients. Lymphadenopathy is tender and characteristically found in posterior cervical chain. Examination of posterior pharynx varies from mild erythema to grossly enlarged tonsils with white exudates. EBV is transmitted primarily by saliva through close contact but also via blood transfusion, breast milk and genital secretions.

Methods: We are referring this case report aiming to stress importance of correct diagnoses of Infectious mononucleosis. This study was designed as a case report assay. Evaluation of patient and diagnosis were done relying on anamnesis morbii, laboratoric evaluation, and immunologic examinations.

Results: 16 years old girl came in ambulatory clinic presenting fever 39°C, pharyngitis, lymphadenopathy, fatigue, rigors, headache. Because initially it was considered a bacterial infection, she was treated with Augmentin (Amoxicilline + Ac. Clavulonic) 375mg q8h, Acetaminophen. Symptoms started to subside but 7 days after, she developed a pruritic erythematous eruption in trunk, sparing palms and soles but involving also oral mucosa. We started systemic corticosteroids and clearance began since second day but was accompanied with prominent desquamation. Laboratory findings demonstrated lymphocytosis, with lymphocytes accounting 70 percent of the absolute white blood cell count with atypical lymphocytes, neutropenia and thrombocytopenia. Transaminases were elevated. On immunologic examinations was noted presence of heterophile antibodies confirming diagnosis of infectious mononucleosis.

Conclusion: 70 to 100 percent of patients with infectious mononucleosis develop an eruption when ampicillin, amoxicillin, cephalaxin, erythromycin, and levofloxacin are administered. Rash is thought to be a result of EBV-induced antibodies produced in response to the administered drug; these antibodies form immune complexes, which fix complement. This exanthem does not indicate a permanent allergy to the medication. An exanthem due to EBV alone may also occur in 5 to 15 percent of the patients. This rash is also morbilliform and pruritic; usually it commences during the first few days of illness and resolves faster, in 1 to 6 days. Periorbital and eyelid edema may be seen in up to 50 percent of those with infectious mononucleosis. In 25 percent of cases, enanthem is noted.
Final Abstract Number: ISE.335  
Session: International Scientific Exchange

Lassa fever outbreaks and response in Nigeria  
D. Asogun¹, S. Abah²  
¹Irrua Specialist Teaching Hospital, Irrua, Edo, Nigeria, ²Irrua Specialist Teaching Hospital, Irrua, Nigeria

Background: Lassa fever is an acute viral hemorrhagic fever that has assumed epidemic proportions in many parts of Nigeria in recent times. The current case fatality rate in endemic communities is 15%.. According to the World Health Organization, the occurrence of 1 confirmed case of Lassa fever in any given geographical area is regarded as an epidemic. In response to report of 3 outbreaks (Taraba State in 2007, Benue State in 2008 and Ondo State in 2009) a team of experts mandated from the Federal Ministry of Health was mobilized each time to site. The primary objective was to immediately investigate the reported outbreak and institute interventional measures as appropriate.

Methods: In each location, health workers on site and victims were interviewed. The residential houses and their immediate surroundings were inspected. Blood samples were taken from Clinical suspects who were also isolated and treated with Ribavirin. Other emergency measures instituted include, community education and training of health workers. Improved environmental sanitation through community mobilization and formation of community based awareness campaign and environmental sanitation committees were proposed as sustainable long term control measures.

Results: In Taraba State, of 210 clinical suspects, 15 were confirmed by RT-PCR with 7 deaths. In Ondo State, of a total of 17 clinical suspects, 9 were confirmed by RT-PCR technique and 3 persons died. In Benue State, 1 of the 10 clinical suspects was RT-PCR positive, but none died. In the 3 locations, risk factors that favor the breeding of mastomys around human dwellings were present in the community. They include refuse and weeds close to human dwellings.

Conclusion: Presence of the risk factors coupled with the cultural practice of drying food items on bare ground, against the backdrop of low awareness of the disease increases the likelihood of primary infection of man with the virus which is shed in the urine and droppings of infected mastomys.Lassa fever is a public health problem with no sufficient attention. There is need for active surveillance, community education, and emergency preparedness and above all a national emergency plan of action for control.
Electron microscopic studies of the brain of fetuses from schizophrenic mothers

S. Mesa
Psychiatric Hospital of Havana, Havana City, Cuba

**Background:** The neurodevelopmental hypothesis in the aetiology and physiopathology of schizophrenia is considered one of the most consistent at present. Among the possible etiological candidates are viral infections. The minor physical and functional anomalies are due to some injury occurring during the first and more probable second trimester of foetal life, and are more common among patients with schizophrenia and in their unaffected siblings than in the general population. A virus acting in this important and critical stage of the development interacting or not with genetic factors can be responsible for the cascade of biological events that appear later on and could explain the period of relative stillness that exists between the birth and the appearance of the symptoms in the puberty that could be related to the reactivation of a latent viral infection. The ability to direct examine these putative aggressors is limited in human studies. Prenatal brain development is not open to direct scrutiny. In our electron microscopic studies of brain of foetuses from schizophrenic mothers we have observed within the nuclei of neurons the presence of complete and incomplete viral particles, nuclear bodies and mithocondria alterations. The present work is related to this finding considering the increased interest about the role of prenatal viral infection in the etiology of this disease in the last years.

**Methods:** Previous informed consent a brain sample was obtained [tip of the left temporal lobe] of foetuses from schizophrenic mothers whose pregnancy was interrupted for medical indications. Electron microscopic studies were done.

**Results:** In the studied foetuses it was observed within the nucleus of neurons the presence of spherical empty particles of 100 nm occupying the centre of an electron-lucid area

**Conclusion:** The importance of this finding can have practical applications in the prevention of the illness keeping in mind its direct relation to the aetiology and physiopathology of schizophrenia.
Background: Varicella is not always benign in children. In certain well-defined groups, chickenpox can be severe and even fatal. The ones that most commonly get kids into the hospital are central nervous system complications. The damage may cause long-term cognitive or physical problems, depending on the specific areas of the brain affected. AIMS: Varicella vaccine has an excellent safety profile and high performance and imperative for vaccination exists in our country.

Methods: Kids patients with encephalitis suffer from fever, headache and photophobia with weakness and seizures also common. All children chickenpox patients evaluated and data from Bosnian Health Institutions and Hospitals for varicella neurological complications. Rapid diagnostic tests for detecting DNA by using polymerase chain reaction or direct fluorescent antibody assay (DFA) are the methods of choice for confirming varicella cases.

Results: The most common of neurological complications are cerebellar ataxia, which occur in about 1 out of 10000 children with chicken pox in Bosnia and Herzegovina. And encephalitis, which occurs in about 1 out of 75000. The maximum incidence of varicella is in children aged 2-6 years.

Discussion: Universal varicella vaccination not only reduces mortality but also provides an effective means of limiting severe and incapacitating disease-related complications.

Conclusion: Healthy children and adults recover from varicella without any treatment. Varicella Encephalitis is a rare disease, extremely uncommon in Bosnia and Herzegovina. Neurological examination revealed an aggressive and irritable child.
Novel combination for treatment of H1N1 (Swine Flu)

S. hussin
El Rehab Private hospital , Cairo, Egypt

**Background:**
This novel study disclosed brilliant effective therapeutic compositions for Treatment of patients infected with H1N1, it shares multiple agents mixed to obtain a synergistic antiviral effect. These include [Mouse anti human IgM, reverse transcriptase enzyme and Transixamic acid].

**Methods:** We designed these agents to be injected by I/M or S/C route in liquid form, every cc contains "2mg of specific anti human IgM, 100 mg Transexamic acid and 5 u/cc specific immunological enzyme " We randomly allocated 6 patients having H1N1 {Previously diagnosed by RT-PCR system in real- time PCR system} with mean age 22=50 years {Males 90%" And "Female 10%}. We used this regimen, every patient advised to take 100 units from the combination dividing them in 5 successive days. 0.10 ml after breakfast and 0.10 ml after dinner with 8 Hrs intervals after that one week rest. The patients were advised again to repeating the tests showed previously.

**Results:** revealed that (98%) of all studied come negative results for H1N1 with using RT-PCR system in real- time PCR system and all of them shown good response in all their vital state with complete disappearance of H1N1 symptoms in 5 days .

**Conclusion:** The results of the present study showed a marked increase in antiviral effect when we used different agents. Every one of them induces direct effect on H1N1. This Therapeutic composition has open the way for all patients to achieved treatment. The cure is now possible in 98% of patients. We hope for use this combination in achieving highly cure rate with other RNA viruses.
Recent findings in neonatal tetanus (NNT)-Nigeria
T. A. ajayi¹, J. Yohanna², O. A. Ayandosu¹
¹university of sheffield, sheffield, United Kingdom, ²emory rollins school of public health, sheffield, United Kingdom

**Background:** Neonatal tetanus although said to be eradicated to a highly significant level globally, still accounts for the cause of under 5 mortality and morbidity rate, most especially in the developing world. Ogun state Nigeria as a case study.

**Methods:** Hospital records of babies affected by neonatal tetanus whose mothers received at least 2 doses of anti tetanus vaccine during pregnancy were identified and were compared to the affected babies whose mothers were not immunized against tetanus during pregnancy in a Nigerian hospital.

**Results:** Out of the 250 records of women observed, there were 50 (20%) cases of neonatal tetanus, 200(80%) cases without neonatal tetanus. However, the mothers 73(29.2%) immunized against tetanus during their antenatal clinics, and the mothers of 177(70.8%) babies were not immunized against tetanus.

**Conclusion:** All babies born to the mothers that had tetanus vaccine during pregnancy did not have neonatal tetanus. Hence role of vaccines for the primary prevention of tetanus in the developing country, can not be overemphasized. As its use has undoubtedly assisted in reducing the incidence of under 5 mortality and morbidity in the developing country – Nigeria.
Impact of Influenza A "H1N1" in hospital personnel President Peron
A. H. Romani
Hospital Presidente Perón, Provincia De Buenos Aires, Argentina

**Background:** To identify areas of greatest impact, the groups most affected and high-risk practices. To try to build risk maps. We adapted the survey prepared by the Ministry of Health of Buenos Aires, deployment on the whole study population personnel diagnosed with flu during the outbreak (epidemiological week 20-30).

**Methods:** A descriptive analysis using variables such as sex, age, influenza vaccination, occupation, service area, comorbidity, compliance with biosafety regulations, causes of non-contact. We also evaluated the impact of human resource depletion, time off work, type of insulation, symptoms and complications, adverse effects treatment and possible sequelae.

**Results:** 31/82 agents who profit license during that period presented suspected influenza illness, being among the nursing staff and the intensive care sector the most affected group, being almost indifferent the previous vaccination as a prevention or reduction of disease, one third presented no comorbidity, smoking and COPD were the most frequent. The biosecurity compliance could not be assessed by this survey. 500 working days lost, representing 2% of the total work capacity, being more importantly, the fear, not to feel protected, to usufruct provincial legislation, which quadruple the number of days lost. Only 3 cases required hospitalization. Febrile Syndrome was low intensity, cough and myalgia appeared as important. 1/3 showed radiographic evidence of viral pneumonitis and 1/3 radiological signs of bacterial pneumonia. No adverse effects were reported, and only one case remained sequelae underlying pathology.

**Conclusion:** Supervisory personnel must enforce control and increase the quality and use of biosecurity measures, improve the respiratory isolation areas for airborne diseases, develop a human resources program that generates a turnover of trained personnel in critical areas. Although the entire hospital was exposed to flu patients, most affected were those who had increased contact and exposure to the aerosolization of secretions from more severely ill patients, while in other areas of the hospital where the exposure has not been so close, those affected did not request sick leave. The distribution of the disease in hospital staff did not express what happened in the general population, suggesting that there are factors at work that should be considered as occupational risk.
Prevalence of Anti-HbsAg Antibody in Health Care Workers in a Tertiary Care Hospital in Delhi
V. malhotra
lady hardinge medical college and kalawati saran children hospital, 110001, new delhi, India

Background: Hepatitis B infection is the major health problem world over and according to CDC estimates 18,000 healthcare workers become infected with HBV each years. As a result of this 250 health care workers may become prone to fulminant hepatitis, Cirrhosis or liver cancer.

In the present study 120 health care worker from KSCH, New Delhi were included to find out the immune status by measuring Anti HBsAg antibody.

Methods: Blood samples were collected from 120 health care workers and ELISA test was performed for detecting anti HBsAg antibody using ElAgen (anti HBsAg) kit (adaltis Italia)

Results: Thirty (25%) health care workers had antibody levels <10mlU/ml(milli international units)75% had>10mlU/ml. Out of these 75% only were vaccinated and 35% had Anti HBsAg levels >20mlU/ml showing thereby that they were clinically protected (vaccinated).

Conclusion: Results from literature show that vaccine induced antibody levels might decline overtime, however immune memory (anamnestic) anti HBsAg response remains after immunization, but persons with Anti HBsAg levels <10 mlU/ml can be vaccinated again. Therefore all hospitals clinics should develop policies or guidelines to assume valid Hepatitis B immunization to protect against Hepatitis B infection.
Detection of *Mycobacterium avium* subsp. *paratuberculosis* in tissue samples of cattle and buffaloes

F. Anwar
Directorate of Veterinary Research Institute, Peshawar, Peshawar, Pakistan

**Background:** Tissue samples were collected at random from cattle (*Bos taurus*) and buffalo (*Bubalus bubalis*) from abattoir of district Lahore and were analyzed for the presence of *Mycobacterium avium* subsp. *paratuberculosis* (*Map*) and *Mycobacterium bovis* (*M. bovis*) through acid fast staining and Polymerase Chain Reaction (PCR). Body condition of animals and diarrhea was recorded.

**Methods:** Gross lesions were recorded in the tissue samples i.e., hemorrhage, mucosal thickening or corrugations, congestion, and edematous swelling, and scored semiquantitatively by severity using a mild (1), moderate (2), and severe (3) scale of assessment. Slaughter house was visited twice a week and 20 animals were examined daily (10 cattle and buffalo each).

PCR analysis and acid fast staining

The samples were subjected to the Ziehl-Neelsan's acid fast staining for recording the presence of AFB. The PCR was carried out for the detection of *Mycobacterium avium* subsp. *paratuberculosis* (*Map*). All the samples were also screened out for the presence of *Mycobacterium bovis* through PCR.

**Results:** Most of the animals were emaciated. Diarrhea was noticed in 15.6% buffaloes & 19.2% cattle. Intestinal pathology was observed in 29% buffaloes and 32.8% cattle. Number of mesenteric lymph node (MLN) showing gross lesions was a bit higher (35.6%) in cattle than buffalo (31.2%). Acid fast staining of tissue scraping smears revealed the presence of acid fast bacilli (AFB) in 17.4% intestinal and 16.4% MLN tissue samples in buffalo, while in cattle 19.2% intestinal and 17.8% MLN were found positive for AFB. In buffaloes, PCR confirmed 12.8% intestinal and 12.4% MLN positive samples for *Map*. However, in cattle, PCR analysis demonstrated 14.2% positive results for *Map* in both MLN and intestinal tissue samples. PCR also confirmed *M. bovis* in 5.8% cattle and 5% buffalo’s MLN and intestinal tissues.

**Conclusion:** PCR positive tissue samples for *Map* were from those animals which were emaciated, having diarrhea and severe gross lesions, AFB were also detected in tissue scraping smears of these animals. It is concluded that infection by various mycobacterium species can be differentiated by PCR, which is not possible by acid fast staining technique.
Detection of Amantadine resistance isolates among H9N2 isolates in Iran

A. Ghalyanchi Langeroudi
Faculty of Veterinary Medicine, Tehran, Iran, Islamic Republic of

Background: Avian influenza (AI) is a highly contagious disease with significant potential to harm poultry industry often resulting in extensive losses. Influenzaviruses cause a significant level of morbidity and mortality in the population every year and effects countries intertropical and tropical regions. There are twoclasses of drugs, which can be used, the older group known as adamantanes consisting of Amantadine and rimantadine and the newer group known as neuraminidase inhibitors (NI s). The adamantanes work by blocking the ionchannel formed by the Matrix (M) protein of influenza A viruses which inhibitsthe early stages of virus replication. However, the emergence of resistance following treatment with the adamantanes has been an issue in their use. Although resistance usually appears only transiently, following treatment and has not resulted in significant spread or maintenance of resistant strains in circulation. Since 1998, H9N2 AI outbreaks have been one of the major problems in Iranian poultry industry. Mortality rate of H9N2 influenza virus outbreak in broilers chicken farms during 1998-2001 in Iran was 20-60%. During this period, Iranian farmers consume Amantadine for prevention and medicine of bird flu in Iranian breeding farms.

Methods: In this study, we analyzed nucleic acid as well as amino acid sequence of M protein of H9N2 from Iranian AI isolates from broilers in Tehran province of Iran in during 1998 to 2007 and did Amantadine resistance detection assay for these isolates in vitro experiment.

Results: We find Amantadine resistance motif in position 31 (S to N). Although, based on molecular findings. We detect Amantadine resistance in these isolates in cell culture assay.

Conclusion: Our results provides useful data and indicated the appearance of antiviral resistance of H9N2 in Iran in recent years (2006-2007) and invitroexperiment approve the molecular findings.
Molecular characterization and phylogenetic study of nonstructural (NS) genes of H9N2 isolated from broilers in Iran during 1998 - 2007

A. Ghalyanchi Langeroudi1, K. Majidzadeh2
1Faculty of Veterinary Medicine, Tehran, Iran, Islamic Republic of, 2Tehran University of Medical Science , Tehran, Iran, Islamic Republic of

Background:
Since 1998, H9N2 AI outbreaks have been one of the major problems in Iranian poultry industry. The association of high mortality and case report of H5N1 and H9N2 influenza virus in wild birds in recent years raised the specter of a possible new genetic modified AI virus. In this study, We do genetic analysis on Full- length Nonstructural (NS) genes of seven H9N2 Isolates from Broilers in Iran , Tehran province during 1998 - 2007.

Methods:
After virus isolation, RNA was been extracted from Allantoic fluid. Full length of NS gene was been amplified by Two Pairs of Primers in RT_PCR reation. PCR product inserted to TA vector for Sequencing procedure and bioinformatic analysis.

Results:
All of Iranian isolates contains 230 acid amine as the same number as most of H9N2 strains isolated elsewhere except two recently H9N2 isolates. Phylogenetic analysis clearly shows that Iranian H9N2 isolates gene pools, corresponding to just NS allele A. Comparison of nucleotide sequences of isolated viruses revealed a substantial number of silent mutations, which results in high degree of homology in amino acid sequences. In addition, The cluster of Iranian H9N2 isolates could be subdivided into two subgroups, which matched their times of isolation especially around 2006 timeline. The high degree of similarity between the NS genes of the Iranian H9N2 isolates supports the hypothesis that these genes originated from a single predecessor.

Conclusion:
Our result provides useful molecular epidemiological data to understand the dynamics of H9N2 evolution during 9 years in Iran and support earlier phylogenetic observations.
Chest wall involvement as a manifestation of Brucellosis, Golestan, I.R.Iran

R. golsha
goletan medical university, gorgan, goletan, Iran, Islamic Republic of

Background: Brucellosis continues to be a common infectious disease in parts of the world esp. Middle East, central American countries. The disease has very different presentations, but chest wall involvement as a manifesting feature of brucellosis is rare.

Methods: Here, we report 3 cases of brucellosis with chest wall involvement as manifesting feature in our infectious ward.

Results: case 1: was a young sheep man with a fluctuant mass in near the left sternoclvicular joint area. Pus culture revealed brucella melitensis.
Case 2: was a young girl with a bulging mass located in inters rib space 1 and 2 near the left border of the sternum. Laboratory data showed wright= 1/640 , 2ME=1/80
Case 3: was an 18 months old boy with history of parasternal multiple firm tender nodules for several months. Wright and coomb's wright and all workups for rickets were negative. Repeated serology was positive for brucella 8 weeks later. All of the patients responded to doxycycline and rifampin.

Conclusion: Brucellosis may present with strange and unpredictable manifestations and can bemisdiagnosed with tuberculosis and malignancies, esp. in endemic areas for both TB and brucellosis.
Background: Bartonella infection is a zoonosis, mainly related to pets. Its prevalence in Brazil is largely unknown. The present study aimed to determine Bartonella spp infection in cats and dogs bred by HIV positive patients, a more susceptible group, living in a semi-rural area of Rio de Janeiro City.

Methods: Cats and dogs belonging to HIV positive cat-breeders were visited in their homes for clinical examination, ectoparasite collection and blood taking for Bartonella serology. Peripheral blood was obtained by paw venous sampling, after the owner’s informed consent. IgG antibodies using a B. henselae commercial kit (Bion R, USA) was determined, with a cut off titer of 1:32. DNA extraction from human blood and ectoparasites was done using the Qiamp minikit, Qiagen, Hilden, Germany, as per protocol. PCR utilizing cat1/cat2 primers were used for human clots and ticks. Ticks and fleas were identified by classical entomological criteria.

Results: Twenty-two cats and 29 dogs were included. 37 ectoparasites were collected from them; 24 (65%) were Ctenocephalides canis (“dog flea”) and 13 (35%) Rhipicephalus sanguineus (“dog tick”). 14 of 22 cats were tested for Bartonella antibodies; 5/14 cats (35.7%) were seroreactive. Blood was obtained from 26/29 (90%) dogs and none were reactive for Bartonella spp.. PCR in blood clots of the 20 cat breeders and in ectoparasites was negative.

Conclusion: A 35.7% seroprevalence in cats was found, which is similar to findings in stray cats in the city of São Paulo. All the apparently healthy dogs tested did not have antibodies detected. This may be because the number of animals tested was small, or because antibodies to B. vinsonii were not sought for or that infection rate in dogs is indeed low in the southeast of Brazil. This is suggested by the one published study in 198 sick dogs in the city of São Paulo, where infection rate was 2% for B. henselae and 1.5% for B. vinsonii berkhoffii. The lack of DNA amplification for Bartonella spp suggests inactive, past infection in cat breeders, despite HIV seropositivity. Although no amplification was obtained from ectoparasites, only one specimen (a flea) was collected from cats.
Q fever as a cause of fever of unknown origin and thrombocytosis in the State of Rio de Janeiro, Brazil: First molecular documentation of a case
E. R. Lemos¹, M. A. Mares-Guia¹, N. Moreira¹, A. Favacho¹, D. Almeida¹, R. G. Silva¹, J. Barreira¹, T. Rozental¹, C. Lamas², P. V. Damasco³¹Instituto Oswaldo Cruz, Rio de Janeiro, Brazil, ²Instituto Nacional de Cardiologia, Rio de Janeiro, Brazil, ³Hospital Gaffre Guinle, Rio de Janeiro, Brazil

Background: Q fever is a worldwide zoonosis caused by *Coxiella burnetii*. Its epidemiology in Brazil is largely unknown.

Methods: Case report.

Results: A 49-year-old man from Rio de Janeiro was admitted to hospital with 40-day history of fever, abdominal pain, headache, nausea and malaise. Physical examination showed tenderness on abdominal palpation and the laboratory findings: hematocrit - 42.2%; ESR - 82mm; leukocytes - 16,200/mm³ and thrombocytosis (611,000/mm³). Bone marrow aspirate (BMA) showed hyperplasia of the monocyte-macrophage and granulocytic cells. Echocardiogram and tomographic scans of the abdomen and thorax were normal. Empirical treatment with cefepime was unsuccessful. He had story of contact with the birth products of 3 goats which had aborted, 20 days before becoming ill. Doxycycline and rifampin were started with the suspicion of brucellosis and the patient’s fever improved within 4 days. Brucellosis, toxoplasmosis, cytomegalovirus, hepatitis B and C, syphilis, bartonellosis, ehrlichiosis, spotted fever group rickettiosis, histoplasmosis and cryptococcosis serologic tests were negative. Direct examination, blood cultures and BMA culture for mycobacteria, fungi and leishmanias were negative. Two serum samples collected 40, and 70 days after onset of illness were tested for *C. burnetii* using a commercial indirect immunofluorescence assay for IgG (PANBIO) and showed titers of antibodies to phase II antigen of 1024 and 256, respectively. The molecular analysis (PCR) using specific primers that amplify the heat shock proteins genes (htpAB) of *C. burnetii* was performed and a 687-bp htpAB fragment was amplified from the 1st serum sample. PCR was repeated without positive control to minimize the risk of lateral contamination and the result was confirmed. Blood samples from the patient's family and 13 dogs were collected for analysis. The skimmed fraction of goats’ milk was regularly fed to the dogs, and the wife made cheese from it. The whole family ate goat’s cheese. The wife, asymptomatic, was seroreactive for *C. burnetti* (1:128); one dog (7 month old female) died before the patient became ill, another had aborted puppies while the patient was in hospital and 2 of the 13 asymptomatic dogs showed IFA reactivity.

Conclusion: Our findings provide definitive confirmation of Q fever in Brazil, where there are no molecular studies documenting *C. burnetii* infection.
Zoonotic infections caused by household pets in Fayoum city, Egypt  
A. Desouky, A. Moawad, S. Midany  
Faculty of Veterinary Medicine, Kafrelsheikh University, Kafr El-Sheikh, Egypt

**Background:** Pets are potential transmitters for pathogens to human (Bacteria, viruses, fungi and parasites) either through direct contact or contamination of the environment (food, soil and water resources).

**Methods:** Different kinds of samples were obtained from 60 household pets (18 puppies, 22 kittens, 10 broiler chicken and 10 ducks), in addition to 18 children (2-14 years old); most of them were in close contact with the previously mentioned pets. Rectal, nasal and mouth swabs and fecal droppings were obtained from chicken and ducks respectively and were cultivated on suitable bacteriological media. Skin scraping from puppies, kittens and children were subjected cultivation on suitable bacteriological and fungal media. Swabs from bite wounds and stool samples were also obtained from children and cultivated. Samples were also taken from floor dust and walls from different houses and the surrounding of the pets, from water and food troughs and were cultivated. Different kinds of fresh samples were examined microscopically for the presence of bacteria, protozoa, helminthes eggs and Dermatophytes. Blood samples from children were submitted for serology (Widal test and Antistreptolysin test).

**Results:** Results showed that *Campylobacter* species was isolated from puppies, kittens, ducks, chickens and diarrheic children, *Salmonella* species was isolated from puppies, kittens, ducks, chickens and diarrheic children, *Giardia intestinalis* from puppies and children, *Toxoplasma* oocyst from kittens and *Hymenolepis nana* from kittens and children. *Microsporum canis*, Beta hemolytic *Streptococci* and *Staphylococcus aureus* were isolated from skin scrapings from puppies, kittens and children either apparently healthy or having skin lesions. *Pasteurella multocida*, Beta hemolytic *Streptococci* and *Staphylococcus aureus* were commonly isolated from bite wound of children. *Pasteurella multocida* was also isolated from mouth and nasal swabs obtained from ducks and broiler chickens suffering from sinusitis. *Campylobacter* species, *Microsporum canis*, *Giardia intestinalis* cyst and eggs of *Hymenolepis nana* were isolated from floor dust, Walls and utensils in the area of pet’s dwellings. Prevalences of the infections were discussed

**Conclusion:** The results of the present study emphasis on the role of household pets in transmission of serious pathogens to human and the role of Veterinarians in controlling of infectious diseases, advising the community for responsibility ownership of pets and precautions for handling sick animals.
Evaluation of animal bite surveillance system in Irbid health directorate during the year of 2008

R. Al Rifai
Jordanian Ministry of Health, P.O Box 221, Irbid, Jordan

**Background:** Rabies; is a fatal viral disease in human. Yearly around 55,000 people die as a result of rabies. The total of cases that received by Irbid health directorate during the year of 2008 was 585 cases. Which, represent 19.25% of the total animal bite cases in the Jordan, with an attack rate of 92.01 case \( \div \) 100,000 people, without recording any death case. This study was designed to investigate the exact causes of continuous increase in the number of cases, and to evaluate the post-exposure measures taken to protect people from rabies disease.

**Methods:** With reference to the records of the Irbid health directorate for each case during the year of 2008, data were collected, classified and analyzed according to different criteria.

**Results:** The heights percent of cases was (65%) in Irbid, whereas the lowest (3%) was in Al–Taibeh region. 75.7% of cases were in males. Also, the results showed that the number of cases start to increase as the summer season start to begin, where the 33% of the cases was in this season. 48% of the cases resulted from dogs followed by 33.1% of cases resulted from rats. 492 cases have bitten from wild animals and the rest (166) bitten from pet animals, among of them, 22 cases were bitten from animals that confirmed positive to rabies virus, and 16 cases were in direct contact with those positive animals. 293 (50%) case of cases have received the full course (6 doses) of antirabies protective vaccine, 31 of them were bitten or were in direct contact with animals that were positive to rabies virus, 32% of the positive animals to the rabies virus were sheep.

**Conclusion:** The continues increase in the animal bite cases with years is an evidence that there is no effective control measures on the animals, which exposed many people life to the dangerous of the rabies disease, at the same time recording no any death case is an evidence to the strong and effective surveillance, and post exposure measures that applied. People education and animal control still the main steps to protect people.
Recidival echinococcosis of gluteal region muscules due to echinococcosis of ileal bone - A case report
S. Krkic Dautovic, A. Karavelic, N. Mostarac, I. Gavrankapetanovic, J. Arslanagic
KCUS, Sarajevo, Bosnia and Herzegovina

**Background:** Human echinococcosis is antopozoonosis widespread in rural areas. Treatment of this disease still a big medical issue all over the world due to high dissemination and recidivation risks, critical localisation, or possible anaphylactic reaction. Bone is a very rare localisation for echinococcosis (0,5-4% cases). The aim of this work is to present unusual localisation of echinococcal cyst, as well as to emphasize cooperation between infectious diseases specialists and surgeons.

**Methods:** We present a case of 14 years old girl who was admitted to Clinic for orthopedics in 2002. with pain in the region of left hip. She was feeling pain in whole gluteal region while walking. There was a bump size 5x5cm notices at the same region.

**Results:** Ultrasound was performed, following with surgical intervention and removing the cyst. A year later, another surgical intervention in the same region was done because a recidive appeared. We decided to combine surgical and conservative treatment, and we treated the girl with Praziquantel befor and after the surgery. In spite of that, she had two more surgical interventions in May 2004 and April 2005. She had secondary infections as well as echinococcal cysts prior to both of these interventions. She was treated with antibiotics Praziquantel and Albendazole. An MRI scan was performed and bone echinococcosis was diagnosed. Albendazole intermittently for 28 days was a treatment of choice. The patient is now 21 years old girl with no pain in either hip or leg, and MRI of ileal bone shows no signs of progression.

**Conclusion:** Late stages of echinococcosis can be a starting point for developing of muscular echinococcosis. Combined surgical and conservative treatment with Praziquantel/Albendasole combination is recommended for treatment of echinococcosis. Albendasole treatment depends on both serology tests and radiology scans.
Avian influenza virus H9 subtype in poultry flocks in Jordan
R. Al Rifai
Jordanian Ministry of Health, P.O Box 221, Irbid, Jordan

Background: Avian influenza virus (AIV) has been recognized as one of the most important pathogens in poultry. In March 1999, two influenza A H9N2 viruses were isolated from two children with a flu-like illness in Hong Kong. Genetic analysis of these two human H9N2 isolates revealed that they were similar to H9N2 virus isolated from quail in Hong Kong in 1997 (Butt et al, 2005). This study was designed to investigate the prevalence of AIV H9 subtype in commercial chicken flocks in Jordan by serological and molecular methods.

Methods: Serum samples from 180 chicken flocks (120 broilers and 60 layers) free from respiratory symptoms, were examined by hemagglutination inhibition (HI) test for specific antibodies against AIV H9 subtype, and 83 chicken flocks (60 broilers and 23 layers) with respiratory symptoms, were examined by reverse transcription-polymerase chain reaction (RT-PCR) using universal primers for influenza A viruses, then specific primers targeting AIV H9 gene were used for the flocks that were positive by universal primers.

Results: Overall, 65 out of 120 broiler flocks (54.2%), and 47 out of 60 layer flocks (78.3%) were positive for AIV H9 subtype antibodies. Nucleic acid of influenza A viruses was detected in 31 out of 60 broiler flocks (51.7%), and 15 out of 23 layer flocks (65.2%). AIV H9 subtype was detected in all flocks that were positive for influenza A viruses. The current study confirmed the endemic nature of AIV H9 subtype in broiler and layer flocks in Jordan.

Conclusion: It is essential that the biosecurity on poultry farms should be improved to prevent the introduction and dissemination of influenza and other viruses. Furthermore, farmers need to be educated about the signs, lesions, and the importance of this virus. Further researches are needed to test people who direct contact with poultry for avian influenza H9 antibodies.
Lassa fever trend, pattern and burden in Nigeria, 2009
M. Adamu Kida¹, P. Nguku P.², H. Akpan H.³, A. A. Aliyu⁴
¹Nigerian Field Epidemiology and Laboratory Training program, ABU Zaria, Abuja, Nigeria,
²Nigerian Field Epidemiology and Laboratory Training Program, Abuja, Nigeria,
³Federal Ministry of Health, Abuja, Nigeria,
⁴Ahmadu Bello University, Zaria, Nigeria

Background: Lassa fever (LF), first described in Nigeria in 1969, is a viral hemorrhagic zoonotic disease. With the advent of integrated disease surveillance and response in Nigeria, LF is among the 22 priority diseases. In the past, Nigeria had frequent reports of LF outbreaks. In January 2009, Nigeria recorded an outbreak that affected mostly health workers. National surveillance data were analyzed to describe the trend, pattern, and burden, and to recommend public health control measures.

Methods: We reviewed LF surveillance national data records from 2002-2009, interviewed health care workers and conducted contact tracing in March 2009, and analyzed the data obtained.

Results: From 2002-2009, Nigeria recorded 383 suspected cases of LF, with 141 deaths and a case fatality rate (CFR) of 36.8%. Edo State accounted for 286 (75%) of 383 cases with 79 (56%) of 141 deaths. Three of the six Nigeria regions had recorded 368 (96%) of 383 cases. In 2009, 77 suspected cases were reported with 17 deaths (CFR) (26%) and 56 confirmed positive LF Specific IgM. That same year, of the 105 contacts traced, 40 (38.1%) were confirmed contacts and 37 (93%) of these were health workers. Ribavirin was administered to all cases and confirmed contacts.

Conclusion: LF is endemic in Edo State. The route of LF can be traced to a region. Nasocomial transmission among heath workers are as a result of limited personal protective equipment (PPE). The Federal Ministry of Health should provide PPE and create awareness in the affected regions.
Background: Yersinioses have been notifiable to the Norwegian Notification System for Infectious Diseases (MSIS) since January 1, 1975 – URL: http://msis.no. The legal framework comes from The Infectious Diseases Control Act, implemented January 1, 1995, URL: http://www.lovdata.no. The main epidemic clones consist of Yersinia enterocolitica serogroups O:3 and O:9. Whereas salmonelloses mostly are imported infections in Norway, a rather high proportion of yersinioses are domestically acquired. Significant risk factors comprise consumption of contaminated surface water, and consumption meat products originating from swine. Due to improved slaughter techniques when it comes to animal husbandry, especially swine, the incidence of domestically yersinioses has declined since the late 1990s. The new slaughtering techniques focus on severing the hindgut of pigs – in order to eliminate fecal contamination of the meat processed.

Methods: The Laboratory for Medical Microbiology, Sykehuset Innlandet Trust diagnoses Yersinia enterocolitica using standard bacteriological cultivation/identification methods.

Results: Yersinioses in Oppland and Hedmark counties by year 1990 – November 20, 2009 (year and number of cases)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>12</td>
<td>11</td>
<td>22</td>
<td>28</td>
<td>16</td>
<td>20</td>
<td>10</td>
<td>20</td>
<td>24</td>
<td>21</td>
</tr>
<tr>
<td>2000</td>
<td>13</td>
<td>12</td>
<td>10</td>
<td>10</td>
<td>17</td>
<td>10</td>
<td>11</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
</tbody>
</table>

The total number of cases was 292. Oppland had 159 notifications, whereas Hedmark had 133 cases - throughout the time span described. Most cases occurred in June, July and August – whereas during the rest of the year fewer cases were notified.

Conclusion: The trends in Oppland and Hedmark counties reflect that of the epidemiological situation in Norway. The decline in incidence the two counties, as well as in Norway, coincides, throughout the period from the late 1990s and after, with improved slaughtering techniques and compliance to hazard-analyzes critical control point (HACCP)-related practices. The test algorithms for Yersinia enterocolitica – in the Norwegian medical microbiological laboratory setting may have, throughout the time span described, changed marginally, but not to any level of significance. Thus the decline observed is, most likely, attributable to improved slaughtering techniques of swine.
Seroprevalence of and risk factors associated for BHV-1, BVDV, *Leptospira* spp. and *Neospora caninum* in unvaccinated cow-calf herds from Nuevo León, Mexico

R. Avalos¹, D. Dominguez², J. Segura³, S. Cedillo¹, J. Zarate¹, J. Salinas¹, R. Cervantes⁴

¹Universidad Autonoma de Nuevo León, Escobedo, Nuevo León, Mexico, ²Center for Reproductive Biotechnology, Regional Association of Farmers from Nuevo Leon, Cd. Guadalupe Nuevo Leon, Mexico, ³Universidad Autonoma de Yucatan, Merida, Yucatan, Mexico, ⁴Center for Reproductive Biotechnology, Regional Association of Farmers from Nuevo Leon, Cd. Guadalupe Nuevo Leon, Mexico

**Background:** Risk factors that contributed to the presence of reproductive disease in cow-calf herds from Northeastern Mexico has not been determined. This study was carried out to estimated the seroprevalence and determine some risk factors for BHV-1, BVDV, *N. caninum* and *L. hardjo* in unvaccinated cow-calf herds from Nuevo León, Mexico.

**Methods:** 1073 animals from 48 cow-calf herds located in 12 municipalities of Nuevo León Mexico were studied between 2008 and 2009, based on the availability of the producer to cooperate and the history of lack of vaccination in the herd, against studied pathogens. From each herd blood samples from 10-20% animals over 12 month of age were taken for serological analysis. Antibody detection was carried out with commercial ELISA test for BHV-1, BVDV and Neospora. For *Leptospira* MAT was used against 12 serovars. Risk factors were obtained by a questionnaire, which was applied to each herd manager. Seroprevalences were calculated by herd for each pathogen. Seroprevalence data were confronted with risk factors obtained in the interview by chi-square test. Relevant risk factors were then subject to binary logistic regression using "SASv6.12" software package.

**Results:** The individual seroprevalences were 42.8%, 30%, 11.7% and 28.4% for BHV-1, BVDV, *N. caninum* and *L. hardjo*, respectively. Herd level seroprevalences varied for each pathogen (BHV-1= 20-90%, BVDV=10-56%, *N. caninum*=0-32%, *Leptospira* [L-hardjo] 18-77%). 54% of herds showed co-infection with the all 4 infectious agents. Size herd (OR’s:12.1=BHV-1, 1.9=BVDV, 7.0=N.c. and 7.9=L-hardjo), not separate aborted females (OR’s 5.7 = BHV-1, 7.7 = N.c.), sharing grazing land (OR’s 4.5 = BVDV y 10.2 = N.c.), no acknowledge of health status of introduced cattle (OR 12.3 = BHV-1), no proper disposal of placentas (OR 5.9 = N.c.) and age (OR 4.1 = BVDV) were significant risk factors.

**Conclusion:** This study confirm the endemic presence of the BHV-1, BVDV, *N. caninum* and *Leptospira* agents in unvaccinated cow-calf systems in Northeastern, Mexico. A large proportion of herds were co-infected and shown different seroprevalence levels against those infectious disease. Not all the risk factors associated with the presence of the pathogens were significant; however, all of them were related to the lack of herd biosecurity.
Seroprevalence of *Toxoplasma Gondii* infection in animals and human in Transilvania (Romania) and their importance in the prophylaxis of congenital malformations

L. M. Junie¹, V. Cosma², C. Costache¹, Z. Coroiu³

¹University of Medicine and Pharmacy, Cluj Napoca, Romania, ²Faculty of Veterinary Medicine, Cluj Napoca, Romania, ³IISP Cluj–Napoca, Cluj Napoca, Romania

**Background:** Toxoplasmosis is a widespread zoonosis. The parasite is mainly transmitted to intermediate hosts through infested food with oocyst spread by cats and other felines, meat insufficiently cooked or transplacental, inducing economic losses in the animal sector and through abortion, birth death and infertility. In Romania, dates on prevalence of *T. gondii* infection in animals are limited, and a high prevalence has implications on public health.

**Methods:** For the serological screening done in small ruminants in the center of the country 1706 blood samples from sheep and 401 from goats were collected.

**Results:** The prevalence of anti *T. gondii* antibodies (IgG) at ELISA, in adult sheep was 64.51% (1021/1585), and in adult goats was 63.88%. In lambs the prevalence of anti-*T. gondii* antibodies (IgG) at ELISA was 26.44% (32/121), and in kids was 3.33%. In newborn population a high *T. gondii* seropositivity (59%) was recorded. Cases of congenital toxoplasmosis among newborn with pathology suggestive for this clinical entity had a representative percentage (6.78%). In the north-north west of the country, in the human population *T. gondii* seropositivity (IgG) was 59.82%, with some variations which were caused by the investigated batch structure. IgG antibodies are higher in proportion in population from urban areas and in adults. To appreciate the necessity of preventive measures and protection of the population, especially the female population of childbearing age, it is very important to know the degree of receptivity of the population regarding *T. gondii* infection. Also the research in small ruminants showed a very high prevalence. Due to the high prevalence detected, there is a real risk of contamination of the human population from those areas, by consumption of insufficiently cooked meat and raw milk.

**Conclusion:** The toxoplasmic infection is one of the major causes of congenital malformations. To reduce the rate of infection and transmission of the Toxoplasma infection to these animals, it is required the implementation of appropriate measures for prevention and management and emphasize the need of national programs for the control of toxoplasmic infections in which modern techniques of diagnosis should be used both in pregnant women and in newborn children.
Prevalence of Babesios in domestic animals from Mazandaran Province, north of Iran during 2008

S. P. Ziapour¹, B. Esfandiarî¹, M. R. Youssefi², M. Alipour Espeh-kolaie³, M. Abouhosseini Tabari⁴, M. Mokhtari⁵

¹Pasteur Institute of Iran, Amol Research Center, Amol, Mazandaran, Iran, Islamic Republic of, ²Azad Islamic University, Babol Unit, Babol, Mazandaran, Iran, Islamic Republic of, ³Babol University Medical Sciences, Yahya-nejad Hospital, Babol, Mazandaran, Iran, Islamic Republic of, ⁴Tehran University, Faculty of Veterinary Medicine, Tehran, Tehran, Iran, Islamic Republic of, ⁵Veterinary central office of Mazandaran Province, Sari, Mazandaran, Iran, Islamic Republic of

Background: Babesios or Texas fever is a zoonotic, acute hemolytic and feverous disease occurs in animals through bites of hard ticks. These parasites are small protozoa which are located in vertebrate red blood cell. Clinical diagnosis of Babesia is difficult and should be differentiated from Leptospirosis and Anaplasmosis. This study aimed to determine prevalence Babesios in Mazandaran Province, north of Iran, during 2008.

Methods: With help statistics consulter, Mazandaran province divided to several divisions and cluster sampling was done. This study was done during April to December 2008 on 3761 blood samples including 575 cows, 2894 sheep and 292 goats in Mazandaran province. Thin blood smear of animals after recording data animal’s were stained by Gimsa staining method and studied by microscopic identification of the organism on thin blood smear with × 100 objective lens.

Results: From all 3761 blood samples collected in Mazandaran province in north of Iran, %19.30 (111 cases) of cattle, %7.64 (219 cases) of sheep and %12.67 (37 cases) of goat were infected by babesios in Gimsa staining method.

Conclusion: Babesios is one of the arthropod transfer diseases and infected vector tick is an effective factor in babesios distribution these infestation ticks can transfer of babesios for several generations. This disease in most Iran domesticated animals and reported and necessity attention about this more than ever feeling