

ProMED-mail

The informal sector and Emerging Disease Detection The role of an internet based early warning system



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ProMED-mail

International Society for Infectious Diseases

<<http://www.promedmail.org>>

Presented at IMED 2007



WHO Epidemic and Pandemic Alert and Response

- **Vision**

An integrated global alert and response system for epidemics and other public health emergencies based on strong national public health systems and capacity and an effective international system for coordinated response.

Source: WHO EPR website <<http://www.who.int/csr/en/>>

Sources of disease information a.k.a. “Epidemic Intelligence”

- Formal sources
 - Ministries of Health
 - National Institutes of Public Health
 - WHO Regional and Country offices
 - WHO collaborating centers
 - Civilian and military laboratories
 - Academic institutes
 - Non-governmental organizations (NGOs)

Source: WHO EPR website <<http://www.who.int/csr/en/>>

Sources of disease information a.k.a. “Epidemic Intelligence”

- Informal sources
 - electronic media
 - electronic discussion groups
 - other

INFORMATION SOURCES USED BY WHO

- Real time gathering of information related to outbreak events from Multiple sources
- GPHIN (Global Public Health Information Network) 39%
- WHO System 33%
- ProMED 6%
- Others (labs, NGOs.) 22%

Source: WHO Ray Arthur Presentation ICEID 26 Mar 2002



The global electronic reporting system for outbreaks of emerging infectious diseases and toxins, open to all sources

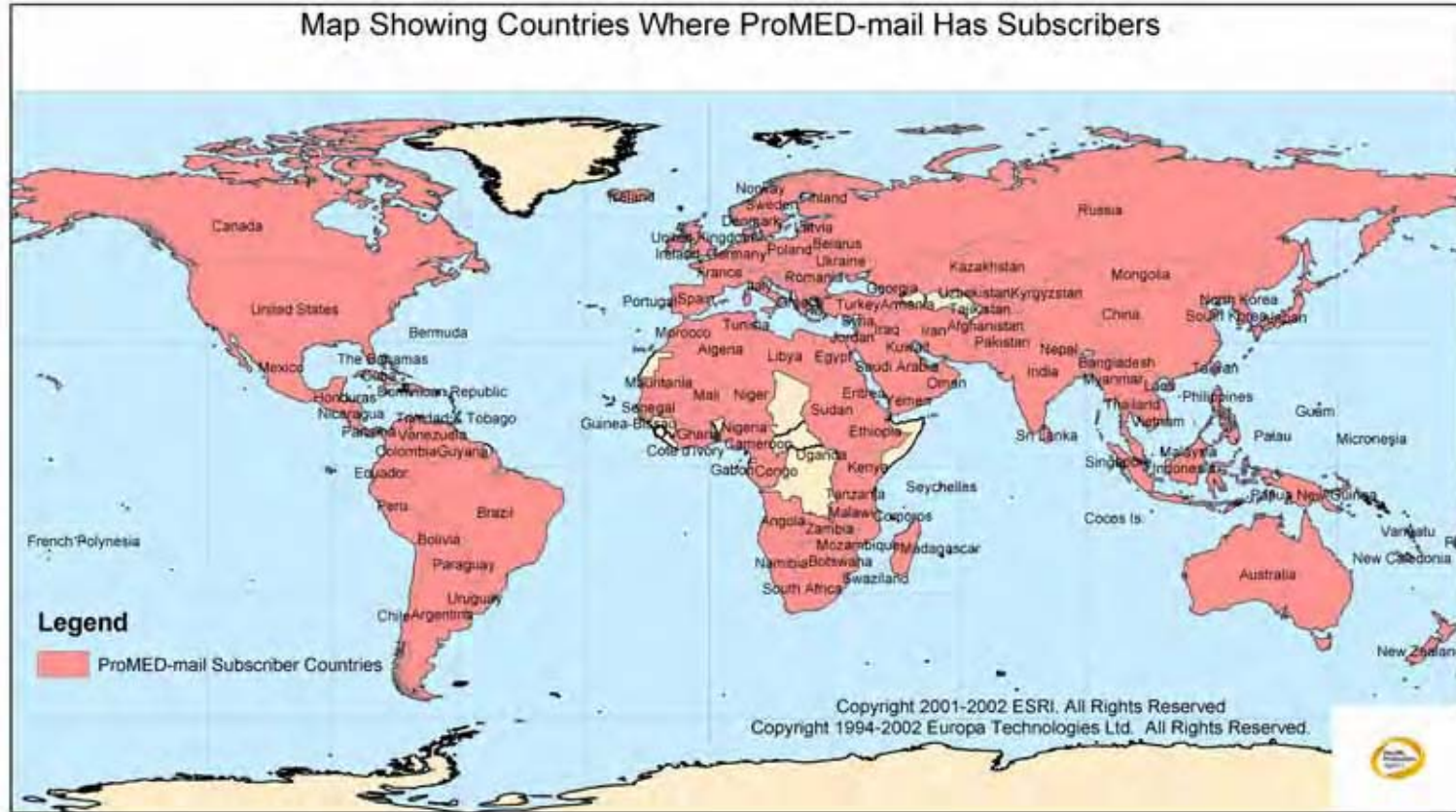
<http://www.promedmail.org>

About ProMED-mail

- Inaugurated on the Internet in August 1994
- Moderated e-mail listserve and website
- Free subscription
- 38,000+ subscribers in 172 countries
- All reports are screened by expert Moderators before posting
- Average of 7 reports per day
- Free of political constraints

ProMED-mail subscribers

Map Showing Countries Where ProMED-mail Has Subscribers



Regional Programs of ProMED-mail

- **ProMED-ESP**
- **ProMED-PORT**
- **ProMED-RUS**
- **Mekong Basin Disease Surveillance Collaboration (PRO-MBDS)**
 - MOHs of Cambodia, China (Yunnan Province), Laos, Myanmar, Thailand, Vietnam
- **East Africa Integrated Disease Surveillance Network (PRO -EAIDS)**
 - MOHs of Kenya, Tanzania, Uganda, Medical Societies, Schools of Public Health

ProMED-mail home page <<http://www.promedmail.org>>

[about ISID](#) | [membership](#) | [programs](#) | [publications](#) | [resources](#) | [12th ICID](#) | [site map](#)

INTERNATIONAL SOCIETY FOR INFECTIOUS DISEASES

ProMED-mail

The global electronic reporting system for outbreaks of emerging infectious diseases & toxins, open to all sources. ProMED-mail, the Program for Monitoring Emerging Diseases, is a program of the International Society for Infectious Diseases.

Navigation

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Archive Number:

Sponsored Links

VCU
Internal Medicine
Virginia Commonwealth University
Medical College of Virginia Campus
Chairman: Richard P. Wenzel

Gerson Lehrman Group **Healthcare Council**
Consulting, Education and Collaboration for Healthcare Professionals

Today on ProMED-mail

February 23, 2007

- [PRO/AH/EDR > Avian influenza \(41\): Afghanistan \(Nangarhar, Kunar\)](#)
- [PRO > Trypanosomiasis, Chagas disease, blood donor screening - USA](#)
- [PRO/AH/EDR > Streptococcus suis, porcine, human - USA \(NY\)](#)
- [PRO/EDR > Cholera, diarrhea & dysentery update 2007 \(09\)](#)
- [PRO/AH/EDR > Listeriosis, smoked fish - Australia \(VIC, NSW\): alert, recall](#)
- [PRO/AH/EDR > Salmonellosis, serotype Tennessee, peanut butter - USA \(07\)](#)
- [PRO/AH/EDR > Undiagnosed die-off, fish - USA \(MD\)](#)
- [PRO/AH > Rabies, animals - Belarus \(02\)](#)

February 22, 2007

- [PRO/EDR > Clostridium difficile, mortality, 2000-2005 - UK \(England, Wales\)](#)
- [PRO/AH/EDR > Salmonellosis, serotype Tennessee, peanut butter - USA \(06\)](#)
- [PRO/AH/EDR > Opisthorchiasis - Russia \(Yamal-Nenets\)](#)
- [PRO/AH/EDR > Avian influenza \(40\): Pakistan, China \(Hong Kong\), Russia](#)
- [PRO/AH/EDR > Lassa Fever - South Africa ex Nigeria](#)
- [PRO/EDR > Botulism - Kazakhstan \(Manqijustauskaya\): RFI](#)
- [PRO/EDR > Meningococcal disease update 2007 \(08\)](#)
- [PRO/EDR > Food poisoning, staphylococcal, dessert - Canada: alert, recall](#)
- [PRO/AH/EDR > Salmonellosis, serotype Tennessee, peanut butter - USA \(05\)](#)
- [PRO/AH/EDR > Undiagnosed die-off, mallard ducks - Canada \(AB\)](#)
- [PRO/EDR > Mass poisoning, fatal - Cambodia: RFI](#)
- [PRO/AH/EDR > Equine herpesvirus - USA \(multistate\) \(05\): VA](#)

Postings from last 30 days...

Latest Information on Avian influenza

- [23-FEB-2007 / Avian influenza \(41\): Afghanistan \(Nangarhar, Kunar\)](#)
- [22-FEB-2007 / Avian influenza \(40\): Pakistan, China \(Hong Kong\), Russia](#)
- [21-FEB-2007 / Avian influenza \(39\): Russia, Pakistan, Afghanistan](#)
- [21-FEB-2007 / Avian influenza \(38\): UK-Hungary virus sequence](#)
- [20-FEB-2007 / Avian influenza \(37\): Russia, prevention](#)

[More...](#)

Latest Information on Anthrax

- [19-FEB-2007 / Anthrax, human, bovine - Australia \(VIC\) \(05\)](#)
- [19-FEB-2007 / Anthrax, bovine - Canada \(SK\)](#)
- [14-FEB-2007 / Anthrax, human, bovine - Australia \(VIC\)\(04\)](#)
- [11-FEB-2007 / Anthrax, human, caprine - Peru \(Ancash\)](#)
- [07-FEB-2007 / Anthrax, human, bovine - Australia \(VIC\) \(03\)](#)

[More...](#)

2007 IMED
International Meeting on Emerging Diseases and Surveillance
Vienna, Austria
23-25 February '07
[More Information](#)
[Abstract Submission](#)

ProMED-Port, Português

ProMED-ESP, español

ProMED-RUS, Русский

Chinese Page

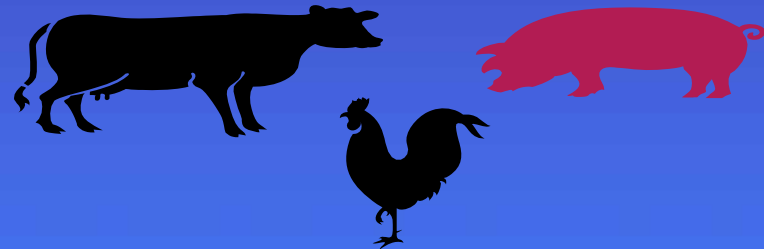
Japanese Page

Disease Focus

- Plant
 - food security



- Animal
 - veterinary
 - zoonotics



- Human
 - infectious
 - acute toxic



**ProMED-mail reports by disease category
(18 most frequent report categories)
1994-2006**

<u>Disease</u>	<u>Number of reports</u>
Avian Influenza	1727
Foot and Mouth Disease	913
Dengue	891
West Nile Virus	891
Cholera	785
Anthrax	777
Bovine Spongiform Encephalopathy	745
Rabies	741
Unknown illness	660
Ebola	484
Salmonella	441
Creutzfeldt-Jakob Disease	429
Influenza	387
Hantavirus	367
Yellow Fever	363
Malaria	359
E. coli O157	298
SARS	262

Sources of information

- ◆ Official reports from National and International Public Health Authorities
- ◆ ProMED-mail subscribers
- ◆ Lay press reports -- “The media”

Constraints to sources of information

- Official reports from National and International Public and Animal Health Authorities
 - require confirmation from reporting unit
- ProMED-mail subscribers
 - is the source reliable?
 - Is there a political agenda?
- Lay press reports
 - is the source reliable?
 - Is there a political agenda?



The role of the media and unofficial groups in emerging disease surveillance

Examples in recent times



SARS

Severe Acute Respiratory Syndrome



PNEUMONIA - CHINA (GUANGDONG): RFI

Date: 10 Feb 2003

From: Stephen O. Cunnion, MD, PhD, MPH

International Consultants in Health, Inc

Member ASTM&H, ISTM

This morning I received this e-mail and then searched your archives and found nothing that pertained to it. Does anyone know anything about this problem?

"Have you heard of an epidemic in Guangzhou? An acquaintance of mine from a teacher's chat room lives there and reports that the hospitals there have been closed and people are dying."

Source: ProMED-mail archives 10 February 2003



SARS - Canada

Email received early 14 Mar 2003

“We have an unidentified severe respiratory illness cluster in a family, one of whom was in Hong Kong 14 days ago. Can you update me on what the illness cluster in Hanoi is please?”

Allison McGeer, MD, FRCPC

Source: ProMED-mail incoming mail 14 Mar 2003



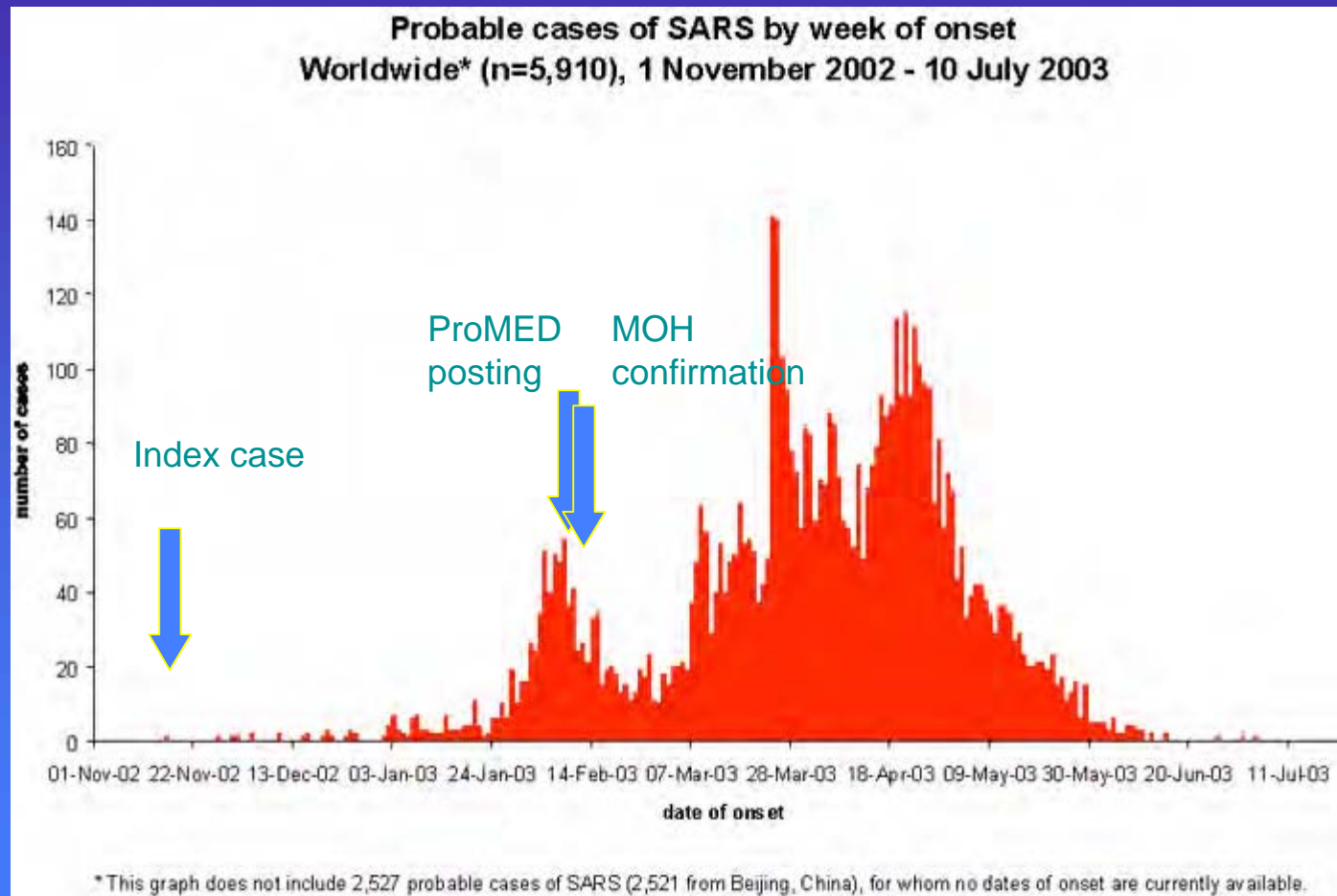
Sequence of events

- **10 Feb 2003** - Reports of atypical pneumonia in Guangdong China
- *Source: ProMED subscriber, plus newswire report (Chinese)*
- **19 Feb 2003** - Reports of H5N1 (avian influenza) human cases in Hong Kong with history of travel from Fujian Province to Hong Kong - *Source: newswire*
- **11 Mar 2003** - Reports of undiagnosed respiratory illness in hospital in Hanoi VietNam - *Source: newswire*
- **14 Mar 2003** - Reports of atypical pneumonia in East Asia -- Hong Kong, VietNam, Singapore, China (Guangdong Province), Taiwan, and Ontario Canada - *Source: official, hospital staff, newswires*
- **15 Mar 2003** -- Reports of severe acute respiratory syndrome worldwide - *Source: WHO advisory/alert following Singaporean ill on flight from USA to Singapore with stop in Germany*

Source: ProMED-mail archives

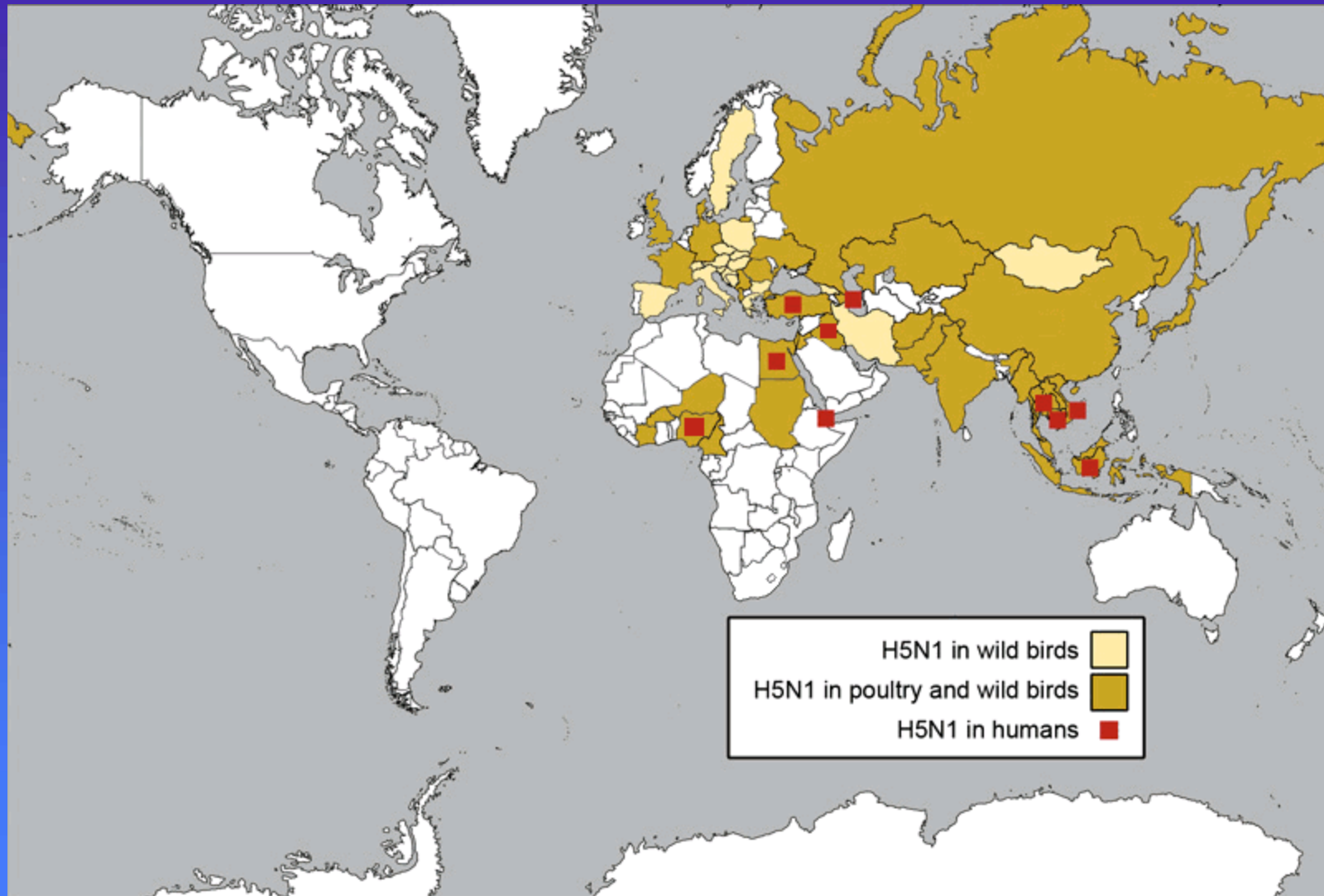


SARS EPIDEMIC CURVE



Source: Epi curve from WHO/CSR, annotated by ProMED-mail
<<http://www.who.int/csr/sars/epi/curve/epiindex/en/index1.html>>

Avian Influenza



Map source: <http://www.pandemicflu.gov/> (February 2007)

AVIAN INFLUENZA - INDONESIA: RFI

Date: 18 November 2003

From: ProMED-mail <promed@promedmail.org

ProMED-mail has received a report from a reliable source of rumors of the occurrence of an outbreak of avian influenza in domestic fowl in Indonesia (West Java and Sumatra). The accounts of the rumored outbreak emanate from 2 independent sources.

Further information from any informed person or organization in the area would be appreciated.

(Mod.CP)

Source: ProMED-mail archives 19 November 2003



Avian Influenza

- **Indonesia**
 - Unofficial source: ProMED-mail posting (*subscriber*)
19 November 2003
 - Official Report to OIE
6 February 2004

Avian Influenza

- **South Korea**
 - Unofficial source: ProMED-mail posting (*newswire*)
12 December 2003
 - Official Report to OIE
17 December 2003

Avian Influenza

- **Thailand**

- Unofficial source: ProMED-mail posting (*Malaysian newswire*)

5 January 2004

- Ministry of Health starts human disease surveillance -- human cases confirmed

23 January 2004

- Official Report to OIE

23 January 2004

Avian Influenza

- **VietNam**
 - Unofficial source: ProMED-mail posting (*newswire*)
6 January 2004
(outbreak ongoing since July 2003)
 - Official Report to OIE
8 January 2004
 - Human cases confirmed
11 February 2004
(first cases occurred in October 2003)

CHIKUNGUNYA - MAURITIUS AND REUNION ISLAND

Date: Wed, May 18 2005 15:13:47 -0400 (EDT)

From: Mohammad Issack <missack@intnet.mu>

In Mauritius, since early April 2005, several people have been attending the hospital and health centres of the capital city, Port-Louis, with fever and arthralgia of hands and feet... a rash was also noted.

Chikungunya virus was suspected based on the clinical presentation, the self-limiting course, and the recent report on ProMED-mail of a Chikungunya virus disease epidemic in the Comoros Islands.

Source: ProMED-mail archives -- 18 May 2005



CHIKUNGUNYA - MAURITIUS AND REUNION ISLAND

(continued)

The diagnosis has been confirmed on blood samples sent to Erasmus University in Rotterdam and Marseilles-Armies Laboratory in France.

The outbreak started in an area of the capital where there is a hostel often used by visitors from the Comoros Islands.

On the French Indian Ocean Island of Reunion (230 km from Mauritius), according to newspaper articles, the 1st cases of Chikungunya virus disease were reported at the beginning of last week, but since then the number of cases has increased rapidly.

Source: ProMED-mail archives -- 18 May 2005



ANTHRAX, HUMAN - NORWAY: RFI

Date: 6 May 2000

From: Per Lausund

**Chief Veterinary and Preventive Medicine Section, Norwegian Army
Medical School**

The press (Norwegian Broadcasting Corp.) has reported that a drug addict (IV heroin) died some days ago from anthrax. It is reported that the heroin might have been the source of the bacteria, but at the same time they warn drug abusers to watch out for sores with black crusts and scabs. This sounds like cutaneous anthrax. ...On the other hand, no more deaths or infections have been reported, and if this was in the drug abusers' heroin it should affect more than one person.

Anyone heard of similar cases recently?

Source: ProMED-mail archives 6 May 2000



Sequence of Events

- **6 May** - ProMED-mail report of anthrax case in IDU in Norway

this led to

- Behind the scenes notifications

this led to

- Heightened awareness for illness & death in IDUs

Chronology of Reports

- 06 May Anthrax, human - Norway: RFI
- 10 May Anthrax, human- Norway: confirmation
- 11 May- 22 May Unexplained deaths, human - UK (Scotland)
- 12 May Drug overdose deaths - Canada (British Columbia) (5 cases)
- 18 May Botulism, wound, drug-related - UK (England) (1 case)
- 25 May Unexplained deaths, human - Ireland (Dublin)
- 31 May - 8 Jun Unexplained deaths, drug addicts - Ireland & Scotland
- 08 Jun - 13 Jun Unexplained deaths, drug addicts - UK
- 15 Jun Unexplained deaths, drug addicts - UK

*****DIAGNOSIS*****

Clostridium novyi

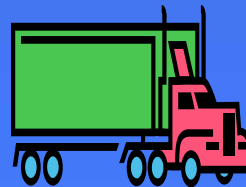
(more than 40 cases)

Source: ProMED-mail archives 2000



LESSONS LEARNED

We live in a global village

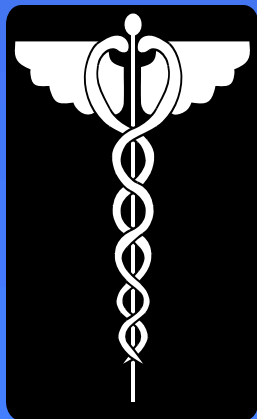


LESSONS LEARNED

No single institution has the complete capacity to address all needs and cover all bases with respect to disease surveillance



WHO



Ministries of Health



LESSONS LEARNED

Early alerts important and valuable -- prevent rumors, speculations



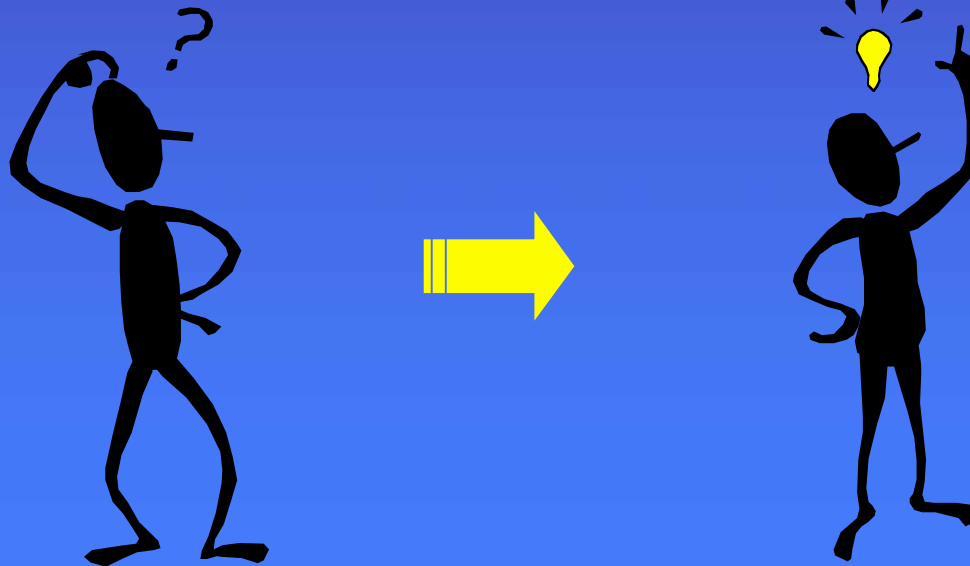
LESSONS LEARNED

Informal sector reports can lead to formal sector investigations with earlier identification of emerging infectious disease occurrences.



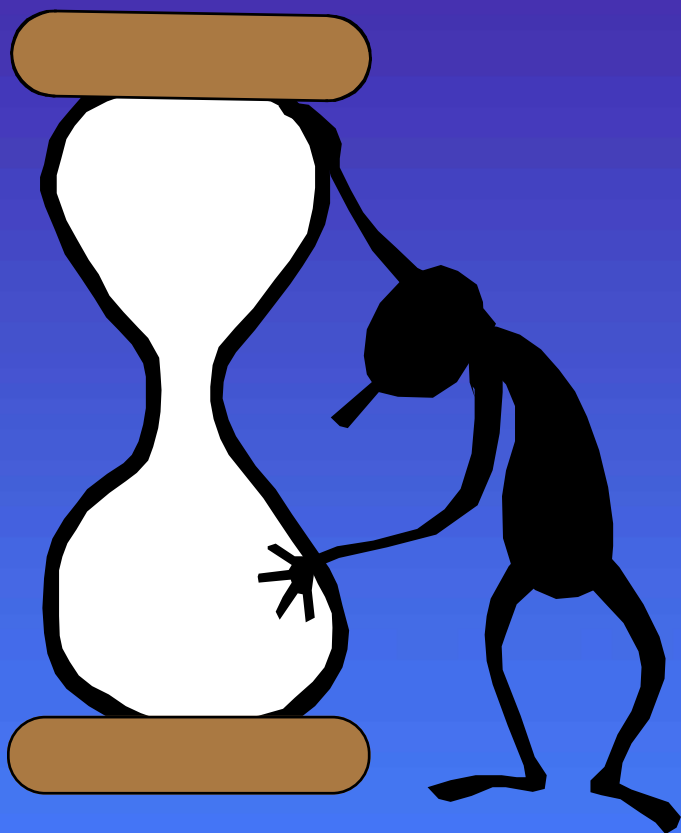
LESSONS LEARNED FROM OUTBREAK EXPERIENCES

Early reports can alert “astute clinicians” elsewhere to look for possible new problems

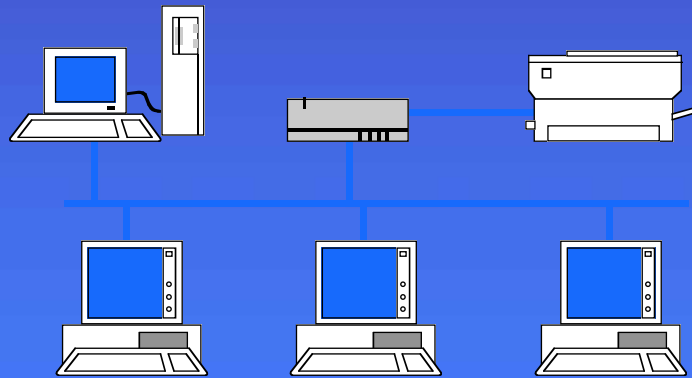


Conclusions

- This electronic means of communication of potential health risks has been successful as an early warning system for emerging diseases to both the formal health sector as well as the community at large.
- It further demonstrates that multiple disease reporting systems are complementary and enhance the early detection of unusual health events.
- The role of the astute clinician cannot be understated. In the event of the intentional release of a biologic agent, (by man or mother nature) early communication of the problem assists the astute clinician in early recognition of a problem in his/her community.



Thank you





QUESTIONS????

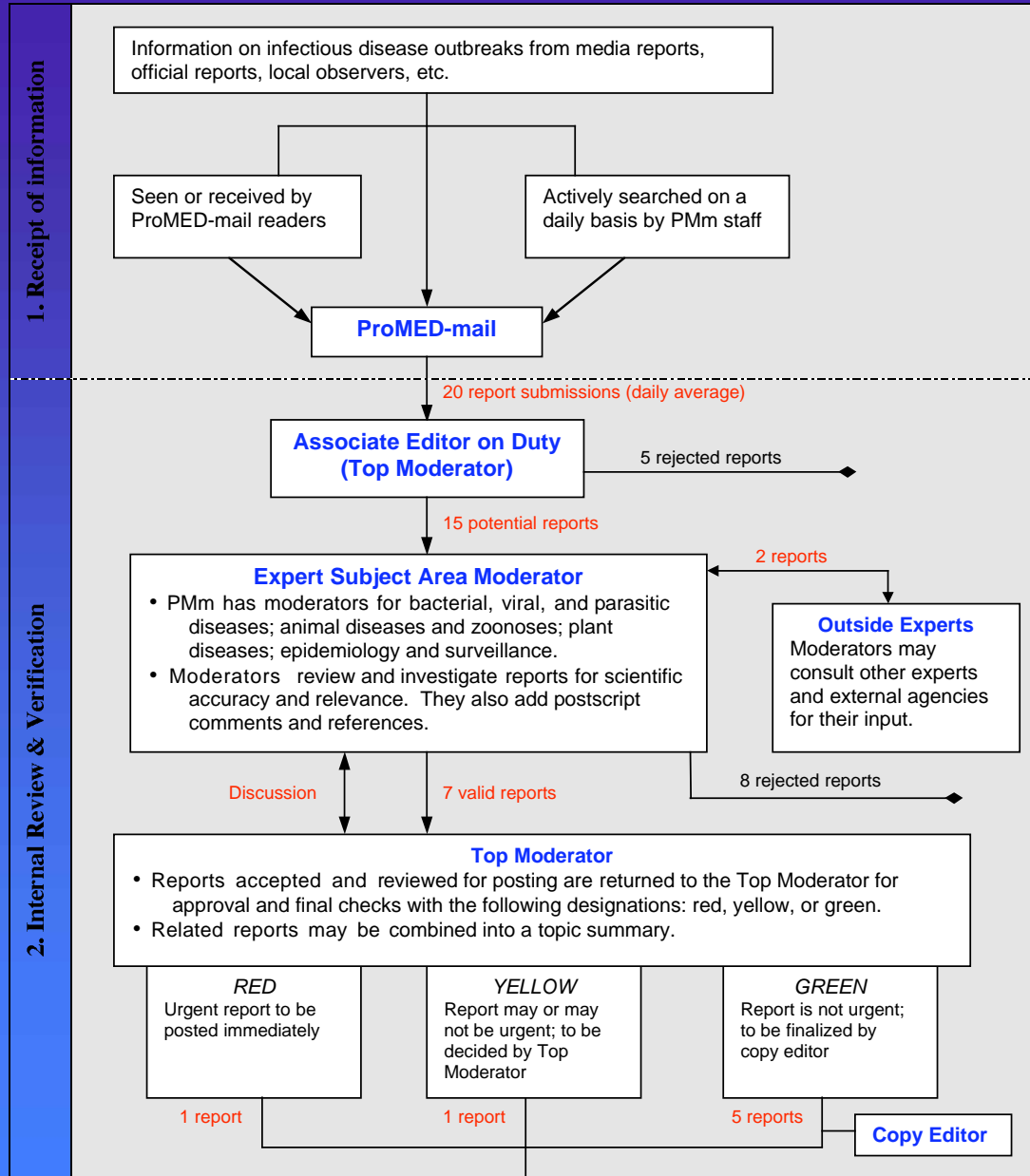
DISCUSSION



Information flow -- ProMED

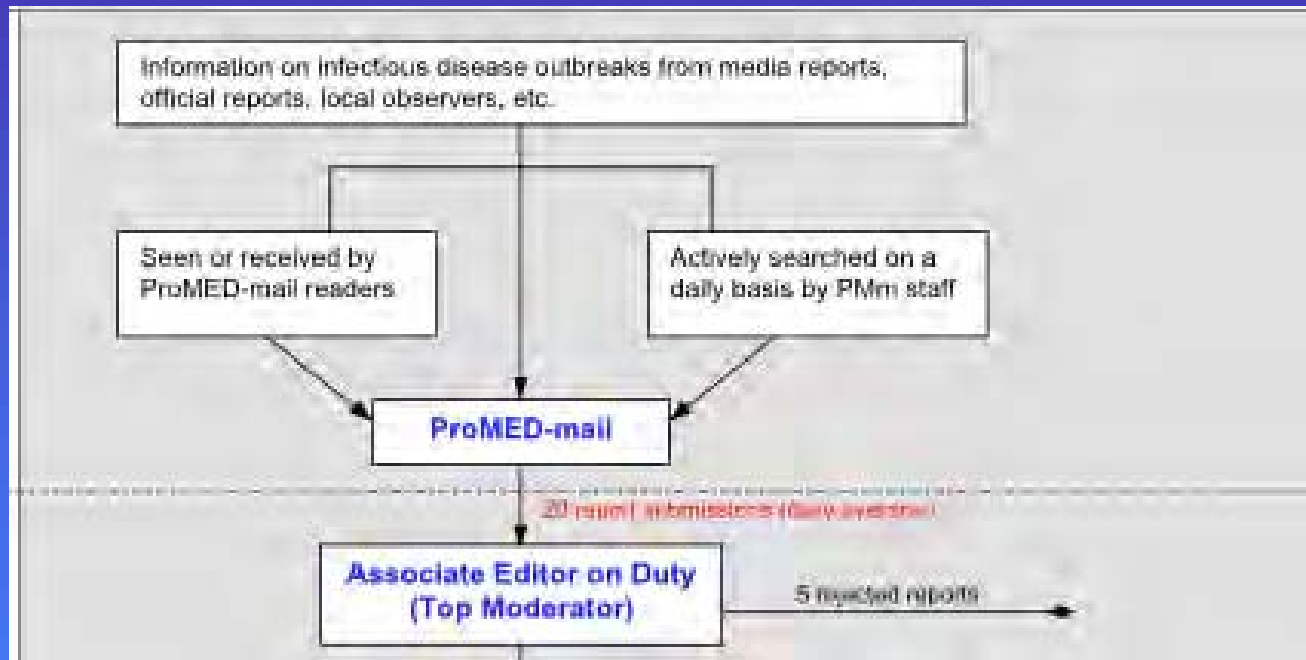


Flow diagram indicating the routing and control of information through ProMED-mail

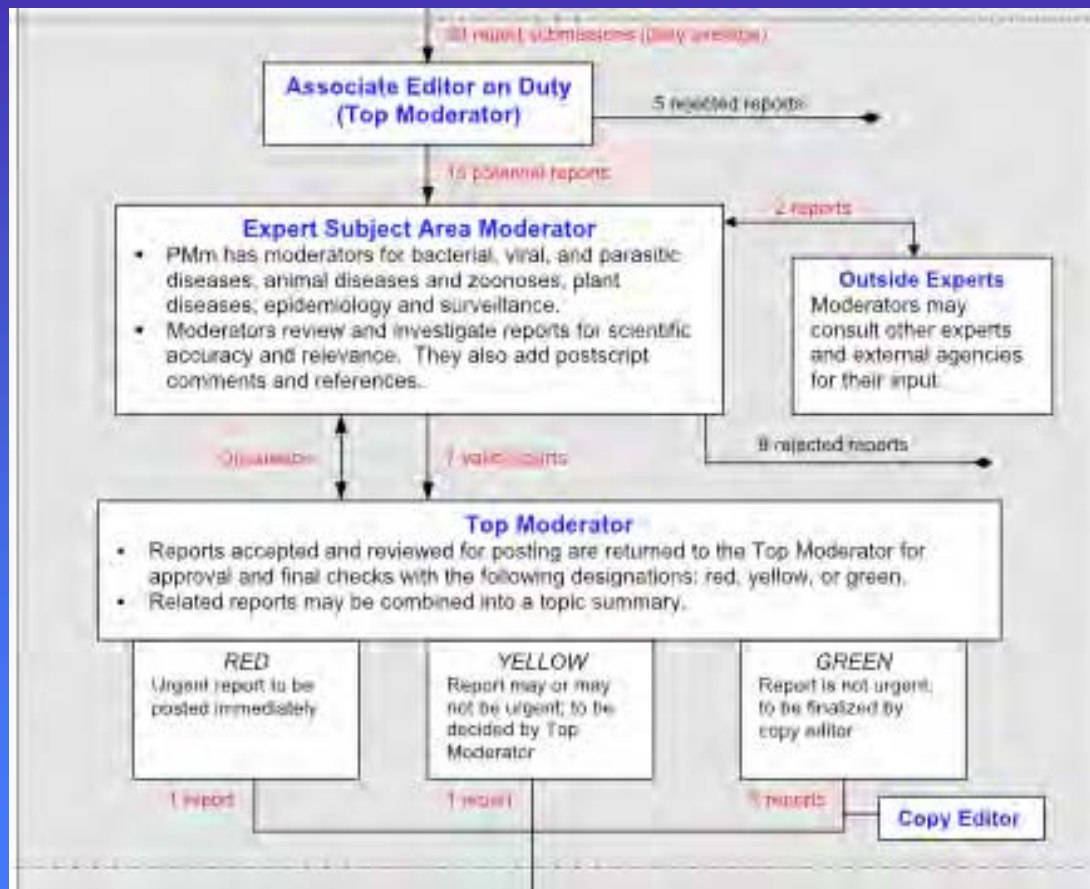


An overview

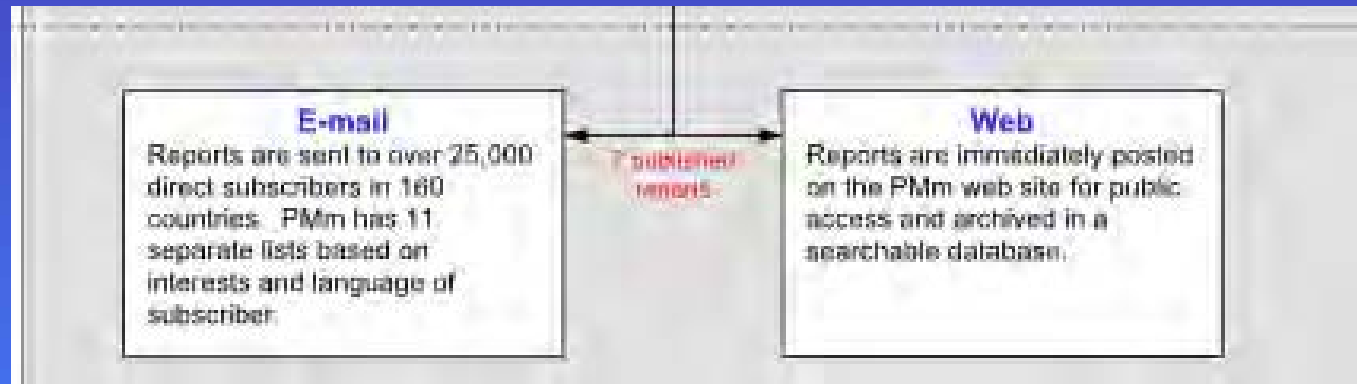
1. Receipt of information



2. Internal Review and Verification



3. Dissemination of Information



AVIAN INFLUENZA -- SOUTH KOREA: SUSPECTED

Date: Fri 12 Dec 2003

From: Stephen M. Apatow <s.m.apatow@humanitarian.net

Source: Reuters Alertnet, Fri 12 Dec 2003 [edited]

<<http://www.alertnet.org/tenews/newsdesk/SE0207636.htm>

South Korea: Suspected Outbreak of Highly Pathogenic Avian Influenza

South Korean veterinary experts are carrying out tests on chickens at a farm near the capital Seoul for suspected cases of a highly contagious type of bird flu, which can in the cases of certain strains be deadly to humans.

The final results would be released next week and, if confirmed, they would be the first cases of highly pathogenic avian influenza in South Korea, the agriculture ministry said in a statement on Fri 12 Dec 2003.

Source: ProMED-mail archives 12 December 2003



AVIAN INFLUENZA -- THAILAND: RFI

Date: Sun 5 Jan 2004

From: ProMED-mail <promed@promedmail.org>

Source: Malaysia Star, 5 Jan 2004 [edited]

<<http://www.thestar.com.my/news/story.asp?file=2004/1/5/nation/7036583&sec=nation>>

Penang farmers fear smuggled Thai chicks may spread bird flu

The Penang Poultry Farmers Association has voiced concerns about the possibility of live chicken smuggled from Thailand being infected with the bird flu..... a report yesterday that the Terengganu Livestock Breeders Association had urged the state Veterinary Services Department to control the entry of chicken from Thailand following the detection of a virus that causes avian influenza among birds in that country.

Source: ProMED-mail archives 5 January 2004



AVIAN INFLUENZA HUMAN -- THAILAND: SUSPECTED

Date: Thur., 22 Jan 2004

From: Akira Goto <dolphin@mail.ne.jp>

Source: Bangkok Post online, Thu 22 Jan 2004 [edited]

<http://www.bangkokpost.com/News/22Jan2004_news06.html>

Thailand: Three Suspected Human Cases of Avian Influenza in Three Provinces

Three Thais with pneumonia-like symptoms are being tested for avian influenza, Public Health Minister Sudarat Keyuraphan said yesterday [Wed 21 Jan 2004].

...the three are a butcher from Nakhon Sawan, a child from Suphan Buri and a farmer living in Kanchanaburi. The three provinces are reeling under widespread chicken deaths..... The Public Health Ministry recently launched its own monitoring system.

Source: ProMED-mail archives 22 January 2004



FOWL CHOLERA -- THAILAND

Date: Wed., 21 Jan 2004

From: ProMED-mail <promed@promedmail.org>

Source: Bangkok Post, 21 Jan 2004 [edited]

<http://www.bangkokpost.com/News/21Jan2004_news05.html>

Mass slaughter gets go-ahead: 850 000 [chickens] killed so far

The Agriculture Ministry yesterday launched its “ultimate action” to contain the outbreak of chicken disease; a mass slaughter of poultry in 20 provinces in a bid to end the outbreak by the end of this week.

.....In Nakhon Sawan province, a chicken butcher has reportedly fallen ill, but it has not been confirmed whether he had contracted bird flu.

[A] Nakhon Sawan senator said the butcher’s condition had worsened...

Source: ProMED-mail archives 20 January 2004



**UNDIAGNOSED DEATHS, CHICKENS - VIETNAM
(TIEN GIANG, LONG AN): RFI**

Date: Mon 6 Jan 2004

From: ProMED-mail <promed@promedmail.org>

Source: The Australian 6 Jan 2004

<http://www.theaustralian.news.com.au/common/story_page/0,5744,8334533^1702,00.html>

Disease kills Vietnam chickens

A mysterious disease has killed more than 40 000 chickens in southern Vietnam, and local officials have been ordered to kill all sick animals and quarantine affected areas, an official said today.

The deaths occurred in two districts in Tien Gian province, with the disease threatening to spread to other provinces.

(One of two newswires contained in this posting)

Source: ProMED-mail archives 6 January 2004



UNEXPLAINED DEATHS, DRUG ADDICTS - UK: DIAGNOSIS

Date: Thu, 15 Jun 2000 10:16:23 -0700

Source: EuroSurveillance Weekly, Issue 24, 15 Jun 2000

Greater Glasgow Health Board has announced that bacteria of the *Clostridium* family have been isolated from nine IDUs by laboratories in Glasgow. Two of these have been confirmed as *C. novyi* type A by the PHLS Anaerobe Reference Unit and the same has also been identified in tissue from a third patient by the Centers for Disease Control and Prevention in Atlanta. The PHLS has confirmed that the strain they isolated produces toxin.

Source: ProMED-mail archives 15 Jun2000

