Preventing Disease in the Time of War: Immunizations for immigrants and refugees, and challenges during humanitarian emergencies

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Outline

• Current public health context in the region and impact on immunizations

• WHO framework for immunizations in humanitarian emergencies

• Current activities in the region and challenges

• Conclusions
World Immunization Week, 24-30 April, 2018  #VaccinesWork

Protected Together, #VaccinesWork

20 February 2018 -- World Immunization Week -- celebrated from 24-30 April 2018 -- aims to highlight the collective action needed to ensure that every person is protected from vaccine-preventable diseases. This year’s theme: “Protected Together, #VaccinesWork”, encourages people at every level -- from donors to the general public -- to go further in their efforts to increase immunization coverage for the greater good.

Campaign essentials

116.5 million
During 2016, 116.5 million infants worldwide received 3 doses of diphtheria-tetanus-pertussis vaccine, protecting them against infectious diseases that can cause serious illness and disability.

84% drop
In measles deaths between 2000 and 2016 worldwide, due to measles vaccination.

3 countries
Polio cases have decreased by over 99% since 1988. Today, only 3 countries (Afghanistan, Nigeria and Pakistan) remain polio-endemic, down from more than 125 in 1988.
Emergencies in the Region

- **62 million** people in need of health care as a result of emergencies – 50% of all people in need globally

- **30 million** people displaced (internally and in neighboring countries)
  - 9 million refugees originate from EMR
  - 21 million internally displaced in EMR

- **3 Level 3** emergencies in Syria, Iraq, Yemen

- Greatest number of **longstanding** emergencies

- **Factors** associated with mass population movements and resettlement increasing **risk** for VPDs:
  - overcrowding;
  - poor hygiene and sanitation,
  - lack of safe water;
  - Poor nutrition
  - Poor access to health care)
Immunization Program under the Humanitarian Emergency in the EMR

• Massive refugee influx to neighboring countries stretched the health system

• Remarkable efforts to maintain immunization programs in conflict affected countries and to reach every child with life-saving vaccines, even under the active war

• Successful interventions in Syria, Yemen, Iraq, Libya, Egypt,…

• Almost all EMR countries that have not achieved the GVAP target of routine immunization coverage are those affected by acute or protracted emergency situation
WPV Cases in Syria and Iraq, April 2013 – March 2014
Diphtheria outbreak, Yemen, Oct. 2017-Sept. 2018

Total: 2311 Cases
Immunizations - Impact of conflict:

DTP3 Coverage %

Year

1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017

81
3.2 million infants have not received their third dose of DTP vaccine in the EMR in 2017, >90% of them are in the conflict-affected countries.

Source: WHO-UNICEF estimates
Trend of Measles in Iraq, Syria, and neighbouring countries, 2010-2018 August

Source: EMRO measles/rubella surveillance data base
Vaccination in acute humanitarian emergencies: A framework for decision making

(http://www.who.int/immunization/documents/who_ivb_17.03/en/)

The Strategic Advisory Group of Experts (SAGE) on Immunization stressed the need to develop guidance on use of vaccination in humanitarian emergencies to:

- Provide an evidence-based approach to assist decision-makers on the use or non-use of vaccines
- Foster agreement among stakeholders on vaccines to use
  - Framework developed by SAGE working group, released 2013
  - Package of documents to guide implementation in development
Vaccination in acute humanitarian emergencies: A framework for decision making

3-step approach to assess which vaccine(s) to use in the context of a humanitarian emergency:

- All potential vaccines (including routine if disturbed)
- Short term impact unless protracted crisis
### Vaccination in acute humanitarian emergencies: A framework for decision making

- **STEP 1**: Assessment of **general risk factors** and assessment of **risk factors specific to the vaccine-preventable disease**.

<table>
<thead>
<tr>
<th>Level of risk due to factors specific to the VPD</th>
<th>Level of risk due to general factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td><strong>Definitely consider</strong></td>
</tr>
<tr>
<td>Medium</td>
<td><strong>Definitely consider</strong></td>
</tr>
<tr>
<td>Low</td>
<td><strong>Possibly consider</strong></td>
</tr>
<tr>
<td>High</td>
<td><strong>Definitely consider</strong></td>
</tr>
<tr>
<td>Medium</td>
<td><strong>Possibly consider</strong></td>
</tr>
<tr>
<td>Low</td>
<td><strong>Do not consider</strong></td>
</tr>
<tr>
<td>High</td>
<td><strong>Definitely consider</strong></td>
</tr>
<tr>
<td>Medium</td>
<td><strong>Do not consider</strong></td>
</tr>
<tr>
<td>Low</td>
<td><strong>Do not consider</strong></td>
</tr>
</tbody>
</table>
Table 3  
Worksheet for determining the presence of key general risk factors

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Main effects on VPDs</th>
<th>Key questions to ask</th>
<th>Possible indicators to consider</th>
</tr>
</thead>
</table>
| High prevalence of malnutrition                  | Increased risk of infection, disease progression and case fatality                   | Is there evidence of a nutritional crisis, either already established or unfolding? | - Prevalence of acute malnutrition among children 6-59m old ≥ 15%  
  or ≥ 2% measured within the last three months, above and beyond seasonal levels  
  • Deteriorating food security indicators (e.g. price of staple foods or livestock; yield of last harvest)  
- Average nutritional intake or food ration < 2100 kcal per person per day |
| High burden of chronic diseases                  | Increased risk of infection, disease progression and case fatality                   | Is there an unusually high burden of chronic diseases in the general population?    | - Prevalence of chronic diseases including diabetes, cardiovascular, cancer, immunosuppressive drugs and renal diseases in the general population  
  • Medium- to high-income population |
| Young population and/or high birth rate          | Greater pool of susceptibles for VPD’s mainly affecting children. Higher herd immunity threshold | Are there a high number of children? Is there an increase in deliveries?            | - Proportion of children aged under 5y ≥ 15%  
  • Crude birth rate ≥ 30 per 1000 people per year |
Vaccination in acute humanitarian emergencies: A framework for decision making

STEP 2: Consideration of vaccine characteristics and amenability to the envisaged service delivery

- Vaccine availability in sufficient quantities
- Time till protection
- Vaccine efficacy at full schedule and efficacy at less than full schedule as well as vaccine effectiveness
- Vaccine safety
- Storage and cold-chain requirements
- Implementation considerations
Table 12: Characteristics of potential vaccines to be considered as part of the intervention

<table>
<thead>
<tr>
<th>Antigen</th>
<th>Presentation</th>
<th>Full course</th>
<th>Efficacy at full course</th>
<th>Efficacy at 1 dose</th>
<th>Efficacy at 2 doses</th>
<th>Target age</th>
<th>Packaging</th>
<th>Stability</th>
<th>Cold-chain volume (cm³/dose)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCG</td>
<td>BCG</td>
<td>1</td>
<td>50% all TB. Fulminant TB in infancy &gt;70%</td>
<td>50% all TB. Fulminant TB in infancy &gt;70%</td>
<td>n/a</td>
<td>Neonates</td>
<td>10, 20 dose vial</td>
<td>VVM14–30</td>
<td>10 dose: 1.33-2.25, 20 dose: 0.54-2.6</td>
</tr>
<tr>
<td>Cholera</td>
<td>Dukoral®</td>
<td>2-3 doses</td>
<td>~70%</td>
<td>~70%</td>
<td>≥2 years</td>
<td>1 dose</td>
<td>-</td>
<td>1 dose: 136</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Shanchol®</td>
<td>2 dose</td>
<td>≥65%</td>
<td>≥65%</td>
<td>≥1 year</td>
<td>1 dose</td>
<td>-</td>
<td>1 dose: 16.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Euvichol®</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>≥1 year</td>
<td>1 dose</td>
<td>-</td>
<td>1 dose: 11</td>
<td></td>
</tr>
<tr>
<td>Diphtheria, Tetanus, Pertussis, Hib, and HepB</td>
<td>DTP (liquid)</td>
<td>3</td>
<td>&gt;90%</td>
<td>Varies with antigen. For the pertussis antigen, a primary series of both whole-cell (wP) and acellular (aP) pertussis vaccines significantly decrease disease-related mortality in the first year of life though the use of aP vaccines may result in a resurgence after</td>
<td>-</td>
<td>≥6 weeks to &lt;7 years, pregnant</td>
<td>1,10, 20 dose vial</td>
<td>Do not freeze</td>
<td>1 dose: 2.53-26.1, 10 dose: 2.11-2.46, 20 dose: 2.43</td>
</tr>
</tbody>
</table>
Vaccination in acute humanitarian emergencies: A framework for decision making

STEP 3: Assessment of contextual constraints and facilitating factors.

- Ethical considerations
- Political considerations
- Security considerations
- Human resources
- Financial considerations
- Alternative interventions
- Add-on interventions
- Research considerations
### 8.2 Risk-assessment worksheets

#### 8.2.1 Cholera disease-specific risk factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Risk level</th>
<th>Medium</th>
<th>Low</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population immunity</td>
<td>High</td>
<td>The population does not experience year-round cholera transmission, and</td>
<td>A vaccination campaign was conducted ≤3 years ago with a</td>
<td>Current vaccines afford, cumulative protective efficacy of the vaccine at 5 years was 65% (95% CI 52–74; p&lt;0.0001) and confer strong transmission reduction effects, even at low coverage. Most cholera vaccines require more than one dose and efficacy varies according to doses received</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No vaccination has taken place before or</td>
<td>coverage of 50%–79%; or &gt;3 years ago with a booster dose ≤3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>A vaccination campaign was conducted ≤3 years ago with coverage &lt;50%; or &gt;3</td>
<td>years ago with coverage of ≥50% and a booster dose campaign ≤3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>years ago and no booster dose ≤3 years ago/booster dose ≤3 years ago</td>
<td>years ago with coverage of 50%–79%</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>with coverage &lt;50%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burden of disease</td>
<td>High</td>
<td>The area has experienced one or more large outbreaks in the past 5</td>
<td>The area has experienced one or more outbreaks in the past 5</td>
<td>The area refers to where emergency-affected people are currently living, and could be a city or a district/region. A large outbreak could consist of &gt;100 cases or &gt;10 deaths (&gt;1% CFR).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>years</td>
<td>years, but none of them large</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geography, climate and</td>
<td>Widespread flooding resulting in potential large-scale contamination</td>
<td>The population lives alongside and gets water from a large body of</td>
<td>Minimal contamination of water supply; good water supply;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>of water supply with excreta; dry weather</td>
<td>water (river, estuary, lake); Warm surface water</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Implementation guide

1. Defining acute humanitarian emergency and target audience
2. Architecture of the response structure: Leadership, management, coordination and partnership
3. Planning and implementing of the immunization intervention
4. Reporting and periodicity
5. Monitoring, evaluation and supportive supervision
6. Exit strategy and early recovery of immunization services
7. Annexes: (Example of micro plan, Country case studies)
Issues to consider

- Vaccine Supply: Introduction of vaccines in accordance with the country regulatory framework:
  - Timelines of standard regulatory pathways not appropriate

- Specific alternative procedures can be considered in such cases:
  - Waiving of registration requirements for vaccines supplied by the UN
  - Waiving of registration requirements for vaccines produced and registered by countries with a functional NRA

- Regulatory planning required

- Customs considerations for timely importation

- Mechanism for access to vaccines at lowest price for use in emergency (compassionate use, strictly for emergencies, flexibility …)
A large NGO wanted to introduce PCV in Northern Syria:

- Risk assessment: kids under 5 at increased risk for pneumonia due to poor nutrition and housing situation
- Vaccine characteristics: PCV very effective for pneumonia, Hib already in routine EPI, safe
- Country context: PCV not in routine immunizations
- Cost: NGO negotiated low price
- Ethical issues: could it be given to all kids in affected areas?
- Logistics: will need to train HCW, but not too difficult
- Demand: OK
Efforts for strengthening immunization programmes and achieving the targets under difficult situations
Striving to overcome long standing challenges in low performing districts - Pakistan

- Increase in HR
- Priority for capacity building
- Vaccine and logistic supplies
- Cash incentives for vaccinators and managers

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### Penta 3 coverage, age 6-11 months old

% PHS 2016, & change from Dec 2015

<table>
<thead>
<tr>
<th>District</th>
<th>% in 2016</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lodhran</td>
<td>95</td>
<td>78</td>
</tr>
<tr>
<td>TT singh</td>
<td>94</td>
<td>41</td>
</tr>
<tr>
<td>Sahiwal</td>
<td>92</td>
<td>17</td>
</tr>
<tr>
<td>Sialkot</td>
<td>89</td>
<td>34</td>
</tr>
<tr>
<td>Sargodha</td>
<td>89</td>
<td>10</td>
</tr>
<tr>
<td>Rawalpindi</td>
<td>87</td>
<td>16</td>
</tr>
<tr>
<td>Mianwal</td>
<td>84</td>
<td>33</td>
</tr>
<tr>
<td>Narowal</td>
<td>83</td>
<td>17</td>
</tr>
<tr>
<td>Mandi.</td>
<td>82</td>
<td>10</td>
</tr>
<tr>
<td>Jhelum</td>
<td>82</td>
<td>16</td>
</tr>
<tr>
<td>Kasur</td>
<td>80</td>
<td>69</td>
</tr>
<tr>
<td>Multan</td>
<td>80</td>
<td>61</td>
</tr>
<tr>
<td>Pakpattan</td>
<td>77</td>
<td>60</td>
</tr>
<tr>
<td>Bhakkar</td>
<td>76</td>
<td>58</td>
</tr>
<tr>
<td>Rahimyar.</td>
<td>76</td>
<td>55</td>
</tr>
<tr>
<td>Chakwal</td>
<td>75</td>
<td>44</td>
</tr>
<tr>
<td>Sialkot</td>
<td>74</td>
<td>38</td>
</tr>
<tr>
<td>Mianwal</td>
<td>73</td>
<td>38</td>
</tr>
<tr>
<td>Multan</td>
<td>71</td>
<td>38</td>
</tr>
<tr>
<td>Lodhran</td>
<td>71</td>
<td>38</td>
</tr>
<tr>
<td>Rajanpur</td>
<td>63</td>
<td>36</td>
</tr>
<tr>
<td>Faisalabad</td>
<td>60</td>
<td>36</td>
</tr>
</tbody>
</table>
Multi antigen immunization campaign in hard to reach areas, Syria 2016

Supporting capacity through training and country plan (cMYP) development

Providing Pentav., MR, OPV and IPV

Reaching >90% coverage in cross border activities despite the active war
<table>
<thead>
<tr>
<th>Immunization</th>
<th>1st Dose</th>
<th>2nd Dose</th>
<th>3rd Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPV</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IPV</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>HepB</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vitamin D</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- Immunization: Official Immunization Schedule
- 1st, 2nd, and 3rd Dose: Dates for each dose
- OPV: Oral Polio Vaccine
- IPV: Inactivated Polio Vaccine
- HepB: Hepatitis B Vaccine
- Vitamin A and D: Additional Vitamins

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**Service Providers Guidelines 2017**

**Dear Parents:**

Thank you for your participation in the immunization program.

[Signature]

[Date]
Integrated interventions, Syrian settlements in Lebanon
Afghanistan: identified the unreached populations to improve RI

EPI Dashboard provides real-time user access to analysis, reporting and to generate trends and analysis which will help in making evidence based planning and reporting.
Measles SIAs in Pakistan Oct. 2018 - 32 million children targeted! >90% coverage reached in most areas
Yemen: response to outbreaks and multi antigens campaigns – example of strong demand!

- 3 rounds of intensified multi antigens activities in 2018
- 3 rounds of vaccination campaigns in response to diphtheria outbreak
Iraq: Facing multiple challenges

Iraq: A complex of deserted government buildings hosting IDPs

Iraq: RI in IDPs and refugee Camps

Iraq: SIAs in IDPs and refugee Camps

National MR SIAs September 2015: coverage 94%
Reaching the hard to reach in Sudan
Somalia, 24 years of conflicts

IDPs

CHDs

MCV

DTP

Vit A

Deworming

TT
Conclusions

- Conflicts and humanitarian emergencies lead to reemergence and increase risk for VPDs

- A framework for use of vaccines during emergencies is available

- Need careful situation analysis and coordination among key stakeholders to ensure rapid access to life saving vaccines

“The deterioration in the public health situation in the Eastern Mediterranean Region is of an unprecedented and dramatic scale..... an immense threat to health security globally...”

Sustaining immunization activities and preventing VPD outbreaks during conflicts is very difficult and requires massive and adequately coordinated efforts by all parties, since the health of populations and children should transcend all political considerations.
Editorial

Vaccine preventable diseases and immunization during humanitarian emergencies: challenges and lessons learned from the Eastern Mediterranean Region

N. Teleb¹ and R. Hajjeh²

The last few years have seen the WHO Eastern Mediterranean Region suffer from multiple wars and conflicts leading to humanitarian emergencies of unprecedented magnitude. In addition, 2014, other VPDs resurged in the Syrian Arab Republic, including measles and pertussis. Both Jordan and Lebanon faced large outbreaks of measles due to the influx of Syrian refugees, as well as countries hosting refugees in the Region (5).

While concerted partners’ support was a key factor for accessing required
Much appreciation to the health workers who work hard to ensure continuity of EPI under very difficult circumstances.
THANK YOU

No Child should die from a vaccine preventable disease.....