WHO Conference on the Health Aspects of the Tsunami Disaster in Asia
Phuket Thailand May 4-6th

Session 1.3 Health Protection and Disease Prevention: a critical review of the evidence

Health Protection and Disease Prevention: a Critical Review of Experience – The International Perspective

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This short presentation will critically review international evidence and experience concerning health protection and disease prevention in the context of responses to natural disasters as humanitarian emergencies. We will look relevant general public health principles of health protection, surveillance and response drawing on relevant domestic and examples from a number of countries. Lessons identified from evaluation of the needs assessments received, coordination of the response, planning to meet local needs for health protection and finally capacity building and preparation for future disasters will be highlighted.

The Health Protection Agency was established in 2003 in order to co-ordinate surveillance and provide early notification of potential public health issues. For those who do not know it these are the roles of the UK Health Protection Agency [Slide 2]. While these were our contributions to the response to the tsunami, [Slide 3]
In reviewing health protection and disease prevention in natural disasters, eight key themes can be identified:

1. Good objective intelligence and needs assessment are key
2. Infections are potentially a major threat
3. Good surveillance and early response saves lives
4. Evidence based interventions and use of previous experience are vital
5. Psychological sequelae are inevitable, including among the responders but can be reduced
6. Build on what you have already (rather than creating new structures)
7. Learn from experience and practice beforehand when you can
8. Anticipate the expected, but be prepared to be surprised

We will now discuss each of these with examples but pointing out that these themes are no different from those for dealing with health protection events in general outside the context of natural emergencies. The term health protection is not used universally so it is defined here.[Slide 4] You will note it deals with the threats to health from infections, chemicals and radiation put the emergency health response.

1. **Good objective intelligence and needs assessment are key** [Slide 5]

The example here comes from the Tsunamis itself. Although the primary role of the Health Protection Agency is to protect the population of the United Kingdom, it is recognised that public health priorities require a global approach in both surveillance and early identification of emerging threats. However, the Agency is not funded to provide international assistance or health protection services to outside agencies. Therefore our capacity to respond is limited by capacity and remit (we cannot send our staff abroad in numbers). However, the scale of destruction and loss of life caused
by the tsunami meant that in the first few days after 26th December we identified that a range of HPA expertise and services might be called upon and such was the scale of the Tsunami disaster that we were able to make an exception to the rule of not working abroad.

The message conveyed through media coverage of the tsunami was of overwhelming need and many staff from both the Health Protection Agency and the National Health Service offered to come to assist in the aftermath. Indeed much of our time was spent explaining that generalist teams were not being sent in addition to the specialist teams sent by relief agencies.

Early contact was made with relevant United Kingdom government agencies (Departments of Health, Department for International Development and the Foreign and Commonwealth Office) as well as the World Health Organization Communicable Disease Surveillance and Response and Health Action in Crises Departmentss, and the WHO SEARO) offering HPA expertise and requesting information on what services may be required. Following an alert from the GOARN mechanism (http://www.who.int/csr/outbreaknetwork/en/), over 100 HPA staff volunteered to assist in the call for specialists which included a request for communicable disease epidemiologists, laboratory experts and technicians, logisticians and data mangers.

It was quickly established by WHO that most countries did not require additional medical teams but that capacities of local health systems needed to be strengthened and that certain specialist expertise was needed. Eventually we only sent these staff [Slide 6] but they all performed valuable contributions. This is an example of the
importance of objective intelligence and rapid needs assessment. Though it has to be conceded that there are often tensions between early and imperfect interventions vs perfect interventions but delayed interventions. Non-governmental Organizations can perform an important role in the early stages of natural disasters because of their ability to be on the scene quickly.

2  **Infections are potentially a major threat** [Slide 7]

Following natural disasters, the loss of infrastructure, disruption to water supplies and the temporary displacement of populations and the impact on health services may result in increased risk of infectious diseases. WHO rapidly identified infectious diseases as a potential major threat to survivors of the tsunami for example through people needing to drink unsafe water. The threat is not as great as during complex emergencies (those involving conflict) but it is still important. An example of this would be … [Slide 8 to come] However the form that this risk will take is not easily predicted which leads to the importance of the third theme of

3  **Good surveillance and early response saves lives** [Slide 9]

Because the threats that will follow natural disasters cannot be anticipated in detail surveillance and Response are key [Slide 10 – Definition of Surveillance]. Here we have an example outside the field of natural disasters and from two decades ago but it makes some important points. This was the strategic public health interventions in the UK’s response to HIV AIDS in the early 1980s. Good surveillance in the USA and certain African countries alerted UK Community Based Organisations (in the gay community) and health authorities to the threat
of AIDS. The UK government at Cabinet level was persuaded by the then Chief Medical Officer (Sir Donald Acheson) of the seriousness of the threat and there was a massive, multi-sectoral publicity campaign aimed at the whole population in 1986-7 as well as discreet funding of the CBOs and politically sensitive interventions among gay men and injecting drug users. The effect was dramatic as can be seen here with the impact on the most sensitive objective indicator incidence of gonorrhoea[Slide 11]. As a consequence the UK has an HIV prevalence that is surprisingly low in relation to comparable western European countries.\(^1\) Though we cannot be complacent, as HIV transmission has risen again of late, there is another resonance here with the tsunamis. It emphasises the importance of multi-sectoral responses and political backing – “health is too important to be left to the Ministries of Health alone”. [Slide 12]

4 Be evidence and experience based [Slide 13]

For many years, the WHO has been dispelling the myths and realities surrounding disasters. Nevertheless, these myths are frequently repeated by the media, disaster professionals and government officials. A list of these myths is given in an Appendix. This is important as Misunderstanding the impact of natural disasters can lead to inappropriate interventions. [Slide 14]

One of the main reasons these myths persist is the lack of scientific evidence with which to contradict them\(^2\). The importance of a sound evidence base during the response to the tsunami disaster was clearly highlighted with regards to the management of dead bodies. After nearly all natural disasters, there is fear of the risk of epidemics from dead bodies. However, a risk assessment based on published literature has shown that the infectious disease risks for the public are negligible, and
for those who handle the bodies, the risks are small and can be further reduced by simple measures\textsuperscript{3,4}.

Importantly, the availability of this information after the tsunami resulted in more responsible reporting by the media. Work is now underway to develop a field manual, based on available knowledge and research, for those who are required to manage dead bodies after natural disasters.

That leads onto the issue of

5 Psychological sequelae. [Slide 15]

These will include the responders to crises. Mental and psychosocial aspects of the tsunami will be discussed tomorrow in greater detail and will not be covered here however we take care in the HPA to debrief those coming back from work in disasters and outbreaks abroad.

6. Build on what you have already (rather than creating new structures) [Slide 16]

This seems self evident but I will give you an example from the UK where we initially constructed a Emergency Response Division in our Agency which confused people by implying that this would somehow take over and run the Response. Of course this was non-sensical as it meant that the rest of the organisation was not sure what to do. Indeed the implication was that they had no role in an emergency. So the Division has been renamed as the Division for Emergency Preparedness and Response emphasising its main focus being on Emergency Preparedness, running exercises and ensuring that when emergencies occur the whole organisation contributes. Which leads onto our next point
7 Learn from experience and practice beforehand when you can. [Slide 17]

Preparation for health protection and disease prevention requires planning and preparation. Whilst natural disasters cannot be prevented, planning can be made to reduce their impact on public health. PAHO has undertaken work in developing emergency preparedness. The experience of Cuba, which had undertaken emergency planning for disaster in Hurricane George in 1998, showed that planning can reduce the impact of hurricanes whilst neighbouring countries did not have the same levels of preparation and suffered in consequence.[Slide 18]

8 Anticipate the expected, but be prepared to be surprised [Slide 19 - Yogi Berra]

One example notes was that many organisations responding to the tsunami had not planned for the incidence experienced of tetanus and did not have anti-toxin as part of their supplies.

As the national and international response has moved from emergency response to long term re-building, the HPA are continuing to liaise with the Department of Health, the Department for International Development and the World Health Organisation to support international efforts to re-store infrastructure and a pleasant spin-off has been a development of a three way educational link between the Ministry of Health in Sri Lanka, our Department of Health in the UK and the Health Protection Agency

1676 words

Conclusion [to come]
1. Good objective intelligence and needs assessment are key

2. Infections are potentially a major threat

3. Good surveillance and early response saves lives

4. Evidence based interventions and use of previous experience are vital

5. Psychological sequelaes are inevitable, including among the responders but can be reduced

6. Build on what you have already (rather than creating new structures)

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8. Anticipate the expected, but be prepared to be surprised

Finally we would like to thank those who have supported us in preparing this presentation. Especially our families and colleagues who have made their own contributions by allowing us to work on this, putting up with the neglect and covering us for our usual work. Like everything else in the response to the Tsunamis the work was done at speed and we do not claim to have all the answers and comments on this presentation will be much appreciated to:

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References


2. de Ville de Goyet C. Stop propagating disaster myths. Lancet. 2000;356:762-64


## Appendix

### Box. Disaster myths and Realities

<table>
<thead>
<tr>
<th>MYTH</th>
<th>REALITY</th>
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<tbody>
<tr>
<td>1 Foreign medical volunteers with any kind of medical background are needed.</td>
<td>The local population almost always covers immediate lifesaving needs. Only medical personnel with skills that are not available in the affected country may be needed.</td>
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<td>2 Any kind of international assistance is needed, and it's needed now!</td>
<td>A hasty response that is not based on an impartial evaluation only contributes to the chaos. It is better to wait until genuine needs have been assessed.</td>
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<td>3 Epidemics and plagues are inevitable after every disaster.</td>
<td>Epidemics do not spontaneously occur after a disaster and dead bodies will not lead to catastrophic outbreaks of exotic diseases. The key to preventing disease is to improve sanitary conditions and educate the public.</td>
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<td>4 Disasters bring out the worst in human behavior.</td>
<td>Although isolated cases of antisocial behavior exist, the majority of people respond spontaneously and generously.</td>
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<td>5 The affected population is too shocked and helpless to take responsibility for their own survival.</td>
<td>On the contrary, many find new strength during an emergency, as evidenced by the thousands of volunteers who spontaneously united to sift through the rubble in search of victims after the 1985 Mexico City earthquake.</td>
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<td>6 Disasters are random killers.</td>
<td>Disasters strike hardest at the most vulnerable group, the poor --especially women, children and the elderly.</td>
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<td>7 Locating disaster victims in temporary settlements is the best alternative.</td>
<td>It should be the last alternative. Many agencies use funds normally spent for tents to purchase building materials, tools, and other construction-related support in the affected country.</td>
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<td>8 Things are back to normal within a few weeks.</td>
<td>The effects of a disaster last a long time. Disaster-affected countries deplete much of their financial and material resources in the immediate post-impact phase. Successful relief programs gear their operations to the fact that international interest wanes as needs and shortages become more pressing.</td>
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Source: http://www.paho.org/English/PED/myths.htm