Anticipating emerging infectious disease epidemics

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Session 5

Curing and not harming – that is the question
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Previously WHO's Assistant DG for Health Security and Environment, Representative of the DG for polio eradication and served as Executive Director of the WHO Communicable Diseases Cluster during which he headed the global response to SARS.

Medical epidemiologist in sub-Saharan Africa on assignment from the US CDC where he participated in the first and second outbreaks of Ebola Hemorrhagic Fever.

Fellow of the Institute of Medicine of the National Academies (US) and the Academy of Medical Sciences (UK)

Appointed an honorary Commander of the Most Excellent Order of the British Empire (CBE) for services to global public health in 2009
Hospital Implements, Yambuku, 1976
Ebola Haemorrhagic Fever by mode of transmission, Yambuku DRC, 1976

Cases: 318
Deaths: 280 (88%)

Source: CDC
Mission Hospital, Tandala Zaire (DRC), 1977

1 clinical case/died

1 contact (sister) fit possible case definition/survived
Ebola Haemorrhagic Fever by mode of transmission, Kikwit Zaire, 1995

315 cases
250 (80%) deaths

Source: WHO/CDC
Ebola outbreak, Boende, DRC, 2014

- Cases: 66
- Deaths: 49 (74%)
- Health workers: 8
- Duration: August-October
International spread of Ebola:
Europe and North America (as of 26 Jan 2015)
Sierra Leone, May–October 2014, Ebola infection in health workers
SARS Epidemic curve, China, 2002 – 2003: health worker to community

Figure 1.1 Guangdong epidemic curve, by date of onset, showing cases among community and health-care workers

Source: Xu R-H et al
SARS: international spread from Hong Kong, 21 February – 12 March, 2003

Source: WHO/CDC
SARS, chain of human-to-human transmission, Singapore 2003

Fig. 2. Chain of transmission of index case B (healthcare worker), Tan Tock Seng Hospital (TTSH).

Source: Tan Tock Seng, Singapore
SARS-like respiratory syndrome, London, September 2012
MERS Coronavirus outbreak, South Korea, 2015

SNAPSHOT OF AN OUTBREAK

Cases of Middle East respiratory syndrome (MERS) reported in South Korea and China.

Number of cases

Date of symptom onset

South Korea
China

12 May 2015
17 May
22 May
27 May
1 June
6 June
Dr Hamoud Al Garni (on behalf of Dr Abdullah M Assiri)

Ministry of Health of Saudi Arabia, Saudi Arabia
MERS-CoV Outbreaks in Healthcare Facilities (Lessons learned)

1. Never underestimate a novel virus
2. Get prepared
3. Make sure your Hospital gates are secured (Security Check Points)
4. Outbreak Quad
   - Overcrowding
   - Absence of Triage
   - Low index of suspicion
   - Non-adherence to IPC measures
5. Sick patient: efficient in getting MERS CoV, efficient in transmission.
6. Transmission happens because of what we do not what the hospital looks like
7. Cardiology patients and MERS CoV. Can pass unchecked.
8. Administration involvement makes the difference
9. Mobilize the community with you
10. MERS CoV does not respect borders
11. Build a national Surge plan
Dr Abdul Ghafur
Consultant in Infectious Diseases, Apollo Hospital, India

• From Ebola we learned that adherence to simple and basic measure such as hand hygiene is more important than building high tech facilities.

• At the same time we also learned that high tech facilities can help contain the infection at a very early stage, providing an argument for building similar well equipped infrastructure in more and more health care institutions in the developing world as well.

• Health care institutions of the future should amalgamate modern strategies to improve human behavior and at the same time building and designing health care facilities to provide a safe environment with the least risk of creation and amplification of dangerous pathogens.
Ms Hélène Lepetit
Managing Partner - Co-founder, Institut des Mamans, France
Patient–doctor relationship in the age of the Internet

Hélène Lepetit, @helenelepetit, IDM – Institut des Mamans

More than 50 000 new contents related to vaccination in France... each month

Results over time

Results 612.0K

2/12/2015
If implemented adequately, comprehensive components of health system should contribute to mitigating the impact of epidemics.

The most deadly epidemics occur generally in low-income countries where governments’ investments in health remain low despite their political commitment. Unless this lack of ownership is addressed, health system strengthening is doomed to failure.

Among critical issues for future, i) a thorough multi-stakeholders health system assessment/review to identify gaps; ii) a “menu à la carte” of low cost and high impact interventions to address gaps; iii) inter-country cooperation; iv) enhance socio-anthropology component of health system.
Questions from WHO

• How can the systems for health of the future minimise the risk of amplifying epidemics?

• What kinds of innovations in medical technologies and patient care will improve epidemic control?

• What kind of research is needed for the 21st century to better address the challenge of emerging pathogens
Some questions for the audience

- What are the elements that the health system of tomorrow must have in place to prevent the amplification of epidemics and mitigate their impact?
- How can we change routine clinical practices including adaptation to cultural beliefs and practices to better prevent and manage infections?