Anticipating emerging infectious disease epidemics

1-2 December 2015
Geneva, Switzerland
Session 1

Summary of the meeting
Session 1: learning from the past (1)

Preparedness (inter-epidemic period) is a priority: flexibility in implementing plans at national and sub national level, value of exercises and simulation

Countries in the driver seat to develop their core capacities - focus on local response and education of citizens

Create order before the epidemic creates disorder

• Coordination: Increasing number and diversity of players involved - humanitarian circus
  - need for incident management system
  - need for joint preparedness
  - Whole of society; Intersectoral response incl. private sector, religion

• Leadership

• "Followership"
Session 1: learning from the past (2)

Communication: essential element of the response
- transparency, consistency, trust

Social emotional pattern: fear, hope – to be better understood

Better link between care and PH for surveillance and response: involve clinicians in early detection

Involve social scientist: before, during, after

Involve local people as early as possible

Importance of logistic during response
Session 2: infections

Early detection at the Human animal interface

- Surveillance involving front line responders: people working with animals (farmers), customs
- Social acceptance + technically sound measures (food safety, access, trade, increased demand for proteins)
- Share information and do joint risk assessment incl outbreak investigation:
- Use endemic problems/known risks to strengthen H and A sector collaborations
- Re imagine human resources: Workshops, trainings
Session 2: infections

Microbiota
• Basic paradigm of infectious diseases transmission being challenged: 1 pathogen - 1 disease
• Impact on vulnerability to infections, treatments, diagnostic, vaccine efficiency, vector competency

Ecosystem surveillance for high consequence agents
• Outbreak may not be evitable but epidemics are preventable
• Biological, ecological and behavioural drivers
• Focus enhanced surveillance on value chain and hotspots of viral diversity
• Do we need risk assessment tools for pathogens and/or for pathways of emergence?
Session 3: science and technologies

New technologies for surveillance and response

• Next generation sequencing
• Synthetic biology
  - Nature is still better at producing threats than human new technologies
  - Use for surveillance (bio sensors) for drugs, for vaccine and for vector control
• Diagnostics: essential
  - New assays- POC, multipurpose
  - Systemic approach for diagnostic
• R&D financing, sustainability
Session 3: science and technologies

Communications tools and approaches

- Central role: People not technologies
- Different types of communities
- 2 way communication
- Social thermometer: Adapt messages to outbreak dynamic (risk perception)
- Trust, listening, professionalism, coherence multiple channels
- Resources: 17 millions of RC volunteers
Session 4: data and information (1)

• Early days of big data: like "teen age sex"
• Data ranging from the Micro (gene) to the macro (human mobility)- multidimensional nature of infectious diseases epidemics
• Opportunity for forecasting like for weather forecast (50 years ago)
  - Exchange of information
  - New paradigm in the analysis
  - Joint interpretation with users
• Modelling and decision making: what if analysis during epidemics (projections)
Session 4: data and information (2)

• Challenges:
  - Use and misuse: need for rules and regulations (privacy, ownership, security, ethics, etc.) who is big brother?
  - Data sharing (public, private sector)
  - Tools for managing high volumes
  - Quality and accessibility of health data in certain settings
  - Interpretation (analysis and translation into action)

• New approaches
  - Foresight to identify blind spots
  - Popular epidemiology /data for good
  - Democratisation small brothers and sisters – local risk mapping (cross border)
Session 5: systems for health (1)

• Infection prevention and control
  - Processes, standards (screening, etc.)
  - Structure of HC Facilities: flow of patients,
  - Human factor (awareness and training, incentives, etc.)
  - Environment (communities, etc.)

• Interaction Public health /care/patients
  - New roles for HCW: trusted party, source and recipient of information, making them more compliant
  - Best use of new tools to frame this relationship don't let Dr google decide.
Session 5: systems for health (2)

Health system:

• Many elements, identify quick wins in particular in low resources countries
• Issue of surge during outbreak
• Role of state:
  - Accreditation, prevention
  - How to mobilise politicians, resources?
    • popular mobilisation?
    • Accountability, results?
• For epidemic revisit the paradigm (triangle): amplification, dissemination, interaction - role of the health system
• Analyse external pressures preventing strong Health System
Session 6: Interconnected world (1)

- Limiting spread: Same issue but different approaches
  - Predict / Prevention
  - Security / social protection
  - Health/Multisectoral
  - Local capacity - national ownership
  - Smoke detector/fire fighting

- Global inequality and segregation

- Securitising health or medicalising security?

- Urbanisation: 2 drivers: inequality, informality. Consider equal voice for all inhabitants and safe informality
Session 6: Interconnected world (2)

• Conditions for effective quarantine, isolation: Risk based, time limited, Incentive, information, support material and psychosocial, communication, planning

• Tourism: growing economic an societal activity
  - Data collection and sharing- trust dependant
  - Travel "restrictions" : need consistency, think different about borders and travel documents.

• Mobility and access: migration, ground crossing, point of entry

• Point of view of politicians
  - Political determinants: awareness, risk perception,
  - Approach to risk: plan for the worst hope for the best? Fair distribution?
  - Capacity to apply the heath security concept? Mistrust
Bingo words

• TRUST
• TRAINING
• Social, social science,
• Solidarity
Information systems

• Approach:
  - Reflexion on emergence, hotspots,
  - New paradigms on infection transmission
  - Cross sectoral
  - Foresight

• 360 radar
  - People: front line workers: clinicians, farmers
  - Tools (big data-modelling- diagnostics, risk assessment tools

• Data: social, behavioural, climate, systems,
Preparedness

• Approaches:
  - PREVENTION-PREPAREDNESS
  - Crisis management
    • Countries in the driver seat / international involvement: leadership/followership
    • Coordination: new mechanism, eradicate bad management, professionalism IMS
  - Local – not one size fits all e.g. urban setting
  - Foresight, scenarios, dynamic
  - New players, sectors,
  - Core capacities
  - Human resources (training, culture change)
  - Communication: media, risk communication, internet
  - Use known risks, endemic or even outbreaks to practice collaboration, to strengthen systems.
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http://www.who.int/csr/disease/anticipating_epidemics/en/
Thank you and see you soon in this interconnected world