



Outbreak response in humanitarian settings

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Objectives of this session

After this session you should be able to:

- Define an outbreak
- Define an epidemic threshold
- Describe and explain the roles and responsibilities of an Outbreak Response Team
- Describe and explain the core pillars of outbreak response

What is an outbreak?

A disease outbreak is the occurrence of disease cases **in excess of normal expectancy**. The number of cases varies according to the disease-causing agent, and the size and type of previous and existing exposure to the agent.

-WHO

See lecture on 'Outbreak investigation'

What is an epidemic threshold?

- Level of disease above which an urgent response is required
- Specific to each disease and context
- Depends on:
 - Infectiousness of pathogen
 - Other determinants of transmission
 - Local endemicity levels

Examples of epidemic thresholds

One suspected case of the following diseases represents a potential outbreak and requires immediate investigation:

- Cholera
- Measles
- Typhus
- Plague
- Yellow fever
- Viral hemorrhagic fever

An increase in the number of cases above a given threshold (or in numbers of cases per 1000 population) of the following diseases indicates a potential outbreak and requires immediate investigation:

- Malaria
- Shigellosis
- Meningococcal meningitis

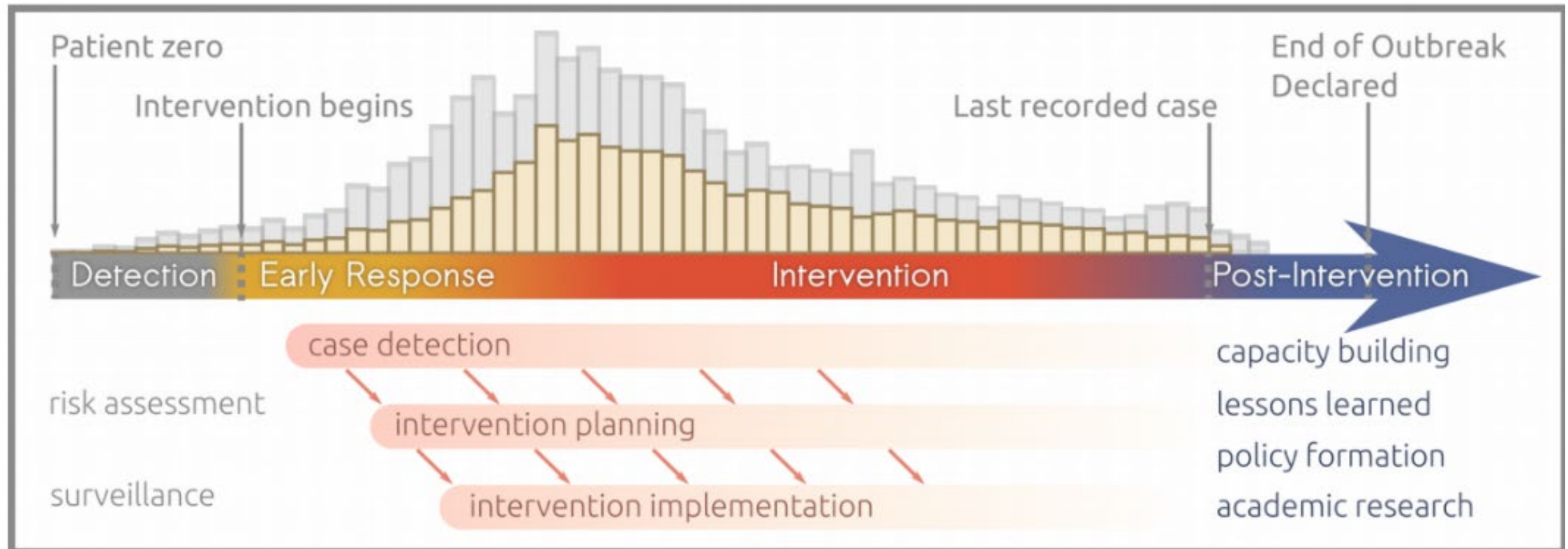




Key questions in outbreaks

- Is it an outbreak?
- What is it?
- How is it transmitted?
- Who is most at risk for infection?
- How bad is it? What are people dying from?
- How bad will it get?
- What can we do?
- How do we mobilize the resources?

Outbreak response: when?



Source:

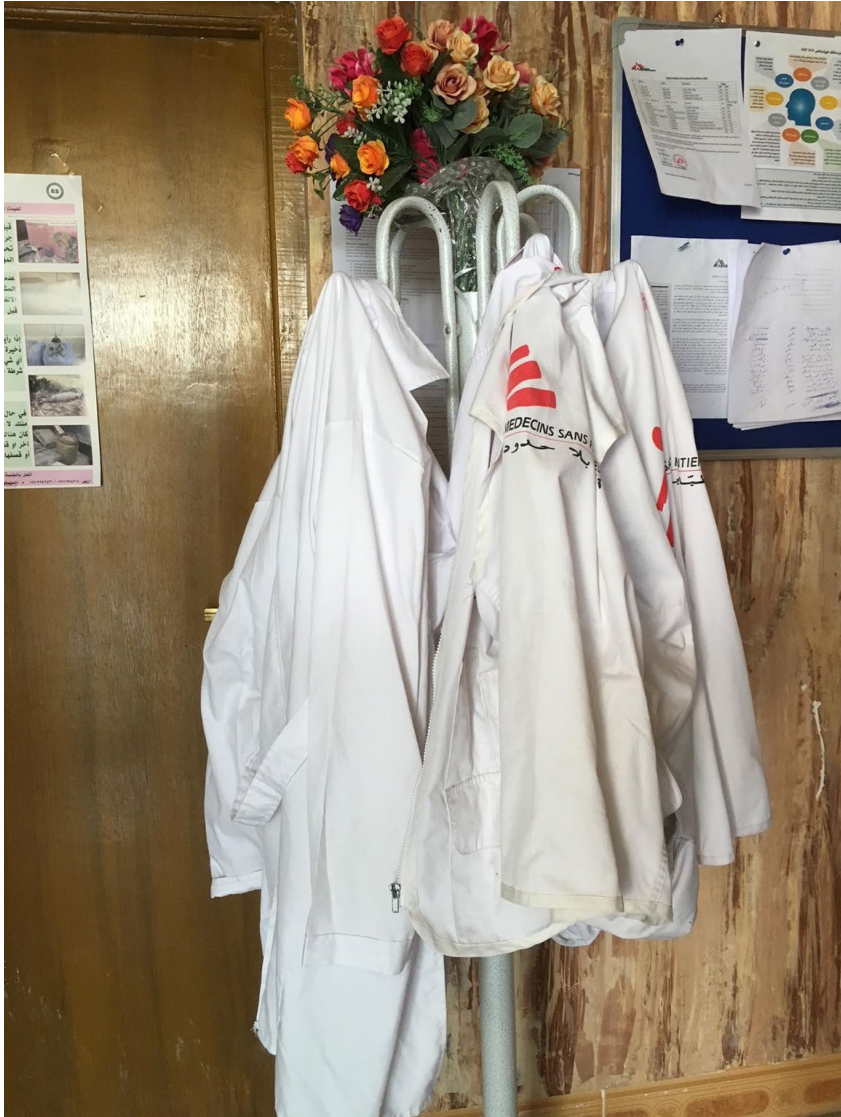
Polonsky, Baidjoe et al. Phil Trans R Soc B 2019

Criteria for setting up an Outbreak Control Team

- Varies according to the seriousness of the illness, its geographical spread, local circumstances and available resources

An OCT might be set up if:

- Outbreak poses an immediate health hazard to the local population
- Disease is important in terms of its severity or transmissibility
- Cases have occurred over a widespread area without obvious point source
- Cases have occurred in high-risk establishments



Objectives of Outbreak Control Team

- To maximize the scientific quality of the investigation in a complex environment
- More specific objectives will vary according to the context of the outbreak and usually include "identify the source" or "identify the main risk factor for infection"
- Lead outbreak response

Who is on the Outbreak Control Team?




- Epidemiologist
- Microbiologist
- Clinician
- Environmental Health Specialist
- Water and Sanitation Expert
- Veterinarian
- Risk Communication Expert
- Social Scientist
- Data Manager
- Representative of local community (community leader)

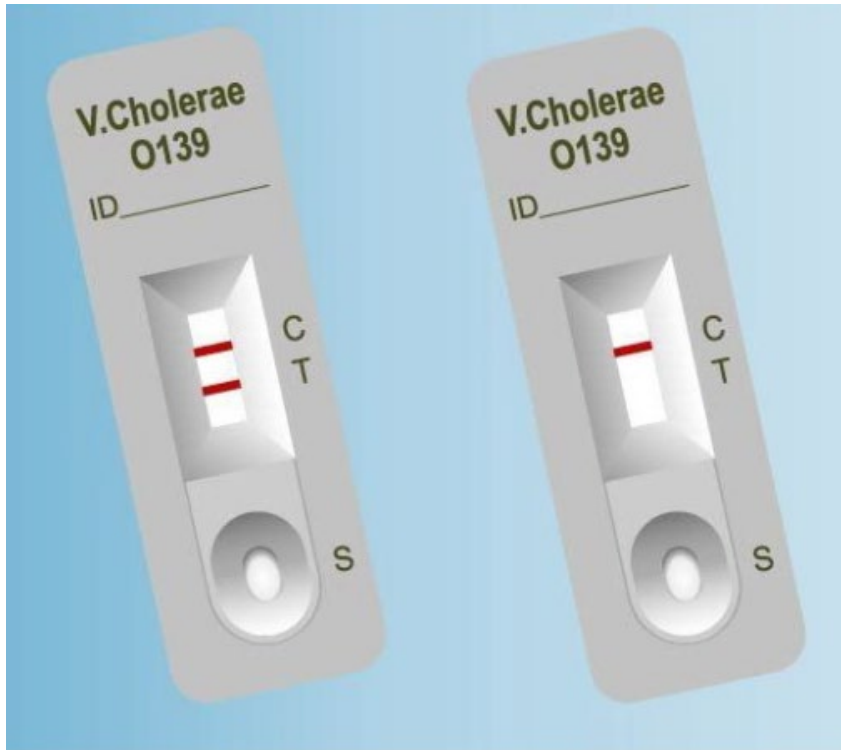
Multidisciplinarity is KEY



Case management

 COVID-19 Register									
Health facility:					Date:				
Project:									
Date of visit/admission (dd/mm/yy)	Patient number (MSF ID)	Phone number (optional)	Age	Unit of age (Days/Months/Years)	Sex (Female /Male)	COVID-19 Status 1 - Suspected 2 - Probable 3 - Confirmed 4 - Not a case	Date symptom onset (dd/mm/yy)	Outcome 1 - Died 2 -Cured 3 - Left against medical advice 4 - Transferred 5 - Sent back home (home care) 6 - Other	Date of outcome (dd/mm/yy)

- Provide medical care for diseased following guidance (MOH, WHO, MSF)
- Line listing
 - Time, place and person
 - Agreement on clear case definitions
 - Standardized format



Testing

- Aim is to test, test, test and base measures on test results

BUT:

- Availability of testing / laboratory capacity
 - Distance
 - Human resources
 - Reagents
- Testing after outbreak has been confirmed in low-resource settings

Surveillance and contact tracing

- Surveillance continues during the outbreak
- In addition: contact tracing

Steps of contact tracing:

- Contact identification
- Contact listing
- Contact follow up



Infection prevention and control (IPC)

- IPC measures depend on the pathogen and route of transmission
- Aim: to break the chain of transmission
- Could include:
 - Hand hygiene
 - Food hygiene
 - Personal Protective Equipment
 - Respiratory and cough etiquette
 - Safe waste disposal
 - Safe burial practices and dead body management



Bonus: Water and Sanitation

- Depending on the pathogen and route of transmission
- Examples of water and sanitation interventions:
- Desludging and cleaning of latrines
- Testing of source of drinking water
- Chlorination of drinking water
 - Point source
 - Bucket
- Distribution of water carriers, soap and chlorination tablets (be careful!)
- Etcetera



Community engagement

- Community engagement is crucial for a successful outbreak response
 - **Outbreaks start and end in the community**
- Should be:
 - Community-led
 - Data driven
 - Reinforce capacity and local solutions
 - Be collaborative
- Example strategies:
 - Involve community leaders from the get-go (for measures and feedback)
 - Ensure representativeness of community leaders
 - Ensure not just tokenistic involvement of the community, but active involvement and ownership



Risk communication

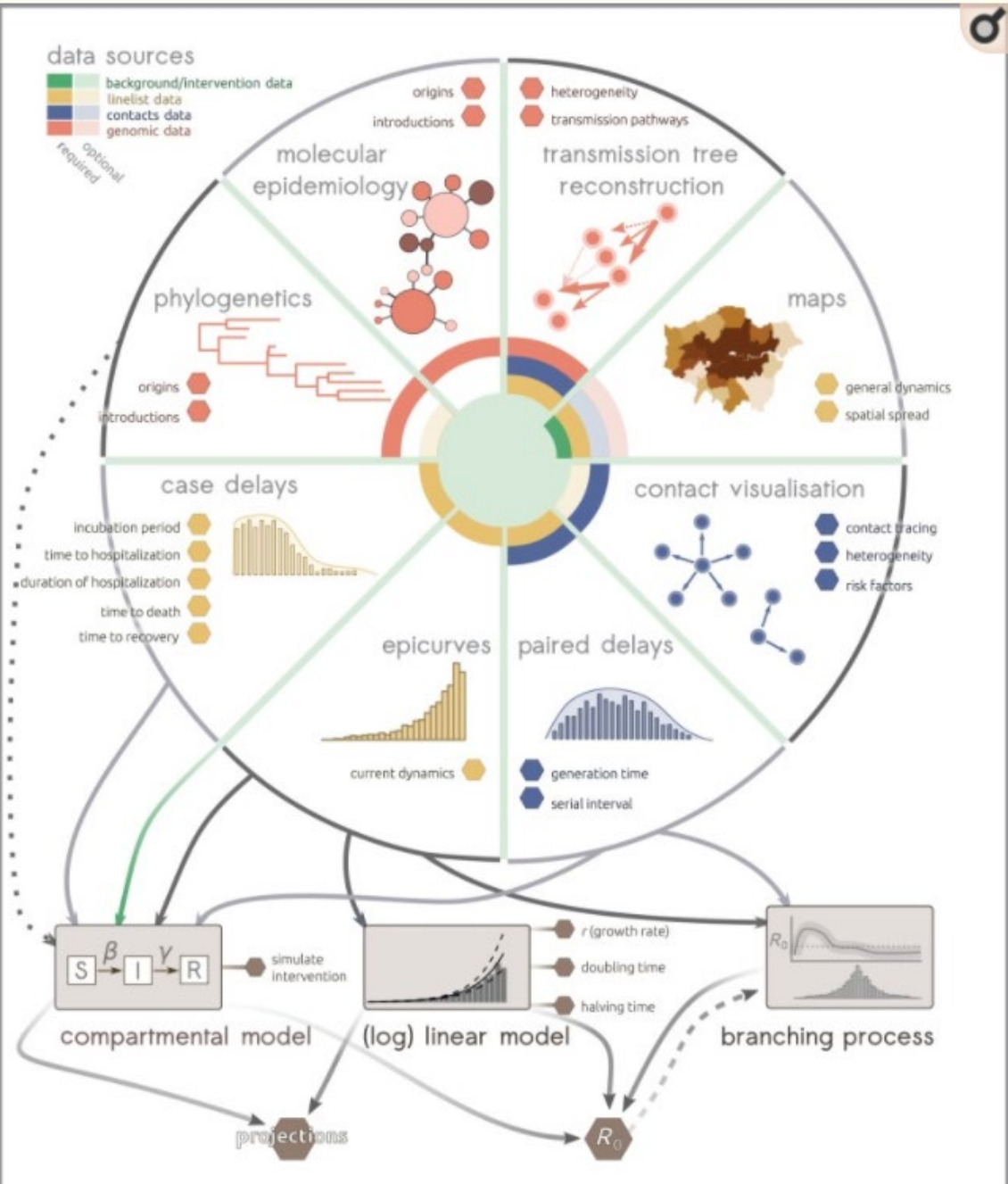
- Heavily intertwined with community engagement
- Strategies could include:
 - Information materials
 - Simple language or visuals
 - Multiple languages
 - Easily accessible
 - Information sessions and regular check-ins
 - Depending on the pathogen and route of transmission



Logistics

Outbreak response requires lots of logistics. Some examples:

- Reactive vaccination campaigns incl. cold chain management
- Soap/bednet/bucket/etc distributions
- Getting the right people in the right place
- Setting up rehydration points
- Setting up isolation wards
- IPC in health facilities
- Facilitating ambulances and transport to health facilities
- Safe burials and dead body management
- And much more..



Epidemiological and outbreak analytics

- Crucial to guide outbreak response
- Main challenges
 - Lack of data
 - Data sharing amongst actors
 - Poor data quality
 - Poor methods
 - Lack of standardization
- But: your outbreak response is only going to be as good as your data!

Source:

Polonsky, Baidjoe et al. Phil Trans R Soc B 2019

MEASLES SITUATION REPORT

Serial Number 12

Data as at December 31st 2020



HIGHLIGHTS

▪ In December, 2020:

- A total of 157 suspected cases were reported from 23 states of which 84(53.5%) were from Ekiti (33), Oyo (15), Bayelsa (15), Lagos (11) and Osun (10)

SITUATION UPDATES

Total (New in this month)

SUSPECTED CASES

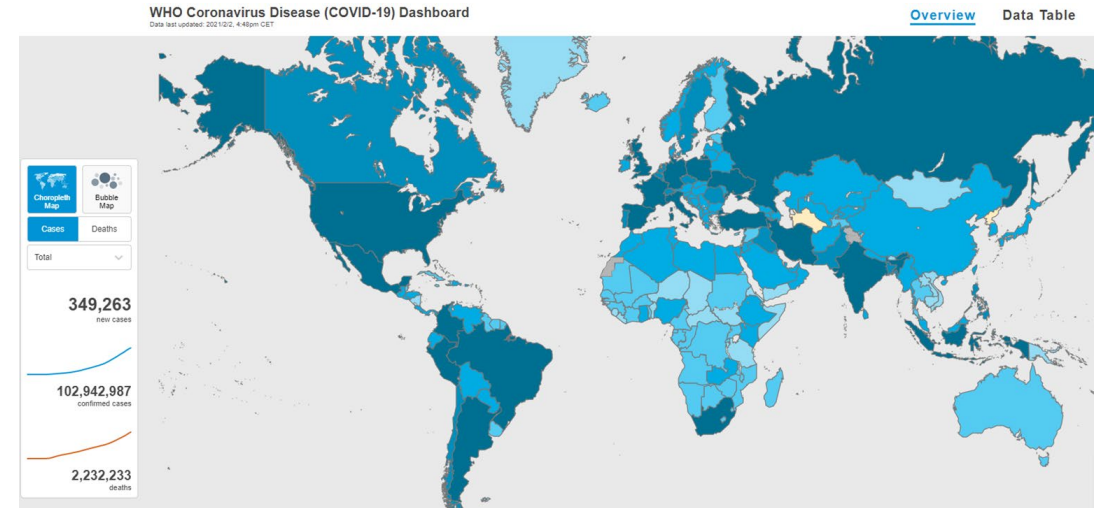
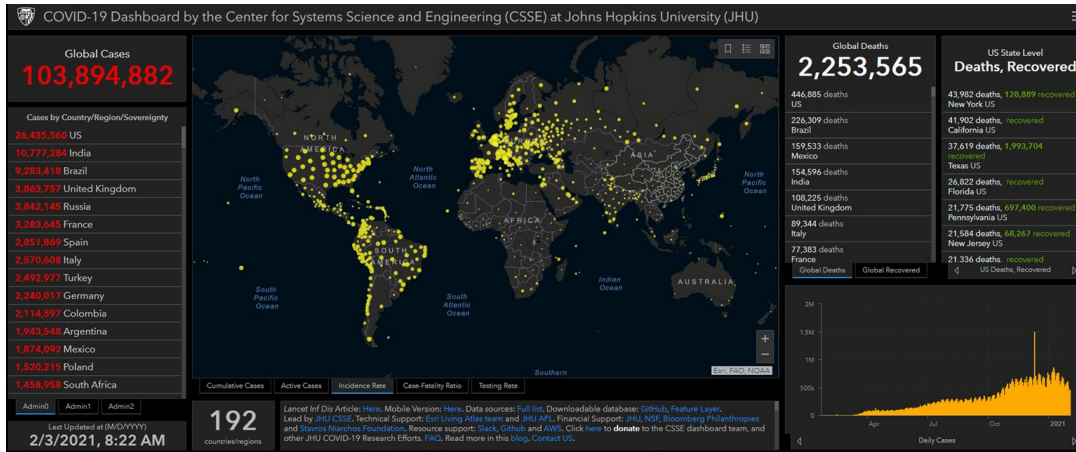
15,099 (157)



- The Public Health Emergency of International Concern (PHEIC) related to Ebola in West Africa was lifted on 29 March 2016. A total of 28 616 confirmed, probable and suspected cases have been reported in Guinea, Liberia and Sierra Leone, with 11 310 deaths.

Situation report

- Overview of the current situation
- Concise, focus on facts
- Structured, use existing templates if available
 - Descriptive epidemiology: Time, place, person
 - Epicurve, maps, description of affected population, health outcomes
- Development since last report (update)
- Risk assessment
- Scenarios, predictions
- Challenges
- Next steps



Data visualization: dashboards



Media

- Appoint one spokesperson
- Coordinate with other agencies
- Inform early and often
 - Interviews
 - Press statements
 - Press meetings
- Be clear about what is
 - Fact
 - Speculation
 - Not known
- Social media
 - Outbreak detection/early warning
 - Inform on progress / risk communication



Challenges in humanitarian outbreak response

- Complex settings
 - Conflict, Mass-displacement, Climate related events
- Access
- Lack of time
- Many organizations and actors
 - Coordination
 - Duplication
- Lack of functioning Ministry of Health in some settings
- Funding deficits
 - Less funding for protracted crises
- Inconsistent data from many different sources



Take away messages

- Outbreak response is all about an interdisciplinary approach
- Outbreaks often start and end in the community – active involvement of the community in outbreak preparedness and response is crucial
- All core pillars of outbreak response should be addressed in order to have an effective outbreak response
- Outbreak preparedness starts during the response to the last outbreak

References

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