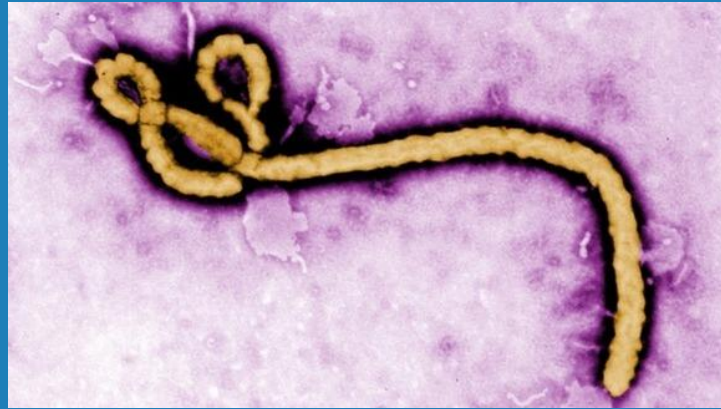


# EBOLA WHAT WE KNOW AND WHERE WE MIGHT BE GOING



**Milano, 27 ottobre 2015**

*organizzato in collaborazione con*  
Progetto europeo ASSET- Action Plan on Science  
in Society related Issues in Epidemics and Total Pandemics  
**Università degli Studi di Milano, Palazzo Greppi**  
Sala Napoleonica

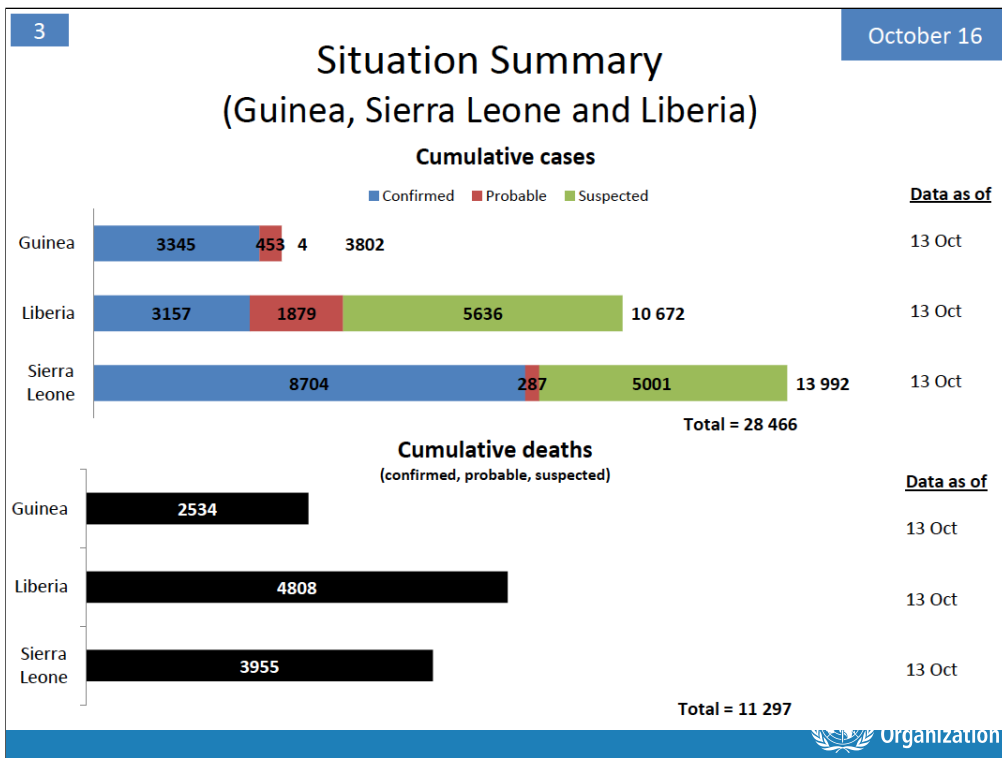


**World Health  
Organization**

Thanks the organizers of the meeting for inviting me at this important meeting

## Today's presentation

1. What we know today
1. How we can change it
1. Potential Future risks



## What we know today

- Incubation 2-21 days
- Case Fatality Ratio 24-89%
- Handling specimens requires BSL 4
- Treatment is supportive
  - rehydration, intensive care,
- Some potential specific treatment
  - Monoclonal antibodies
  - Very limited availability
  - Limited information on safety & efficacy
  - Candidate drugs also in early stages of testing
- Vaccines in development (prevention is promising, cure is in development)

## How Ebola Outbreaks Start

### First human cases start with infection by an animal

Chimpanzees, gorillas, monkeys, forest antelopes, fruit bats, porcupine...

How current outbreak started is unknown

### Infection from person-to-person creates an outbreak

- “ Direct or indirect physical contact with body fluids of infected person (blood, saliva, vomitus, urine, stool, semen)

### Well known locations where transmission occurs

- “ Hospital:
  - “ Health care workers, other patients, unsafe injections
- “ Communities:
  - “ Family, friends, contacts caring for ill, through funeral practices

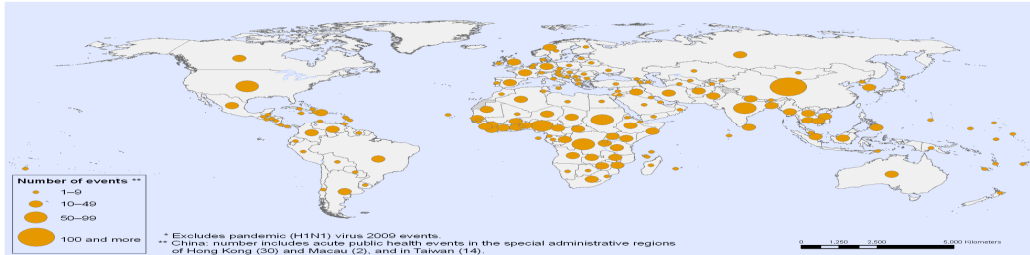


Ebola is introduced into the human population through close contact with the blood, secretions, organs or other bodily fluids of infected animals. In Africa, infection has been documented through the handling of infected chimpanzees, gorillas, fruit bats, monkeys, forest antelope and porcupines found dead or ill in the rainforest. For Marburgvirus, human infection results from prolonged exposure to mines or caves inhabited by Rousettus bats colonies.

# Global Travel vs. DiseasesÅ



Substantiated acute public health events, by country (EMS, 1 January 2001 – 9 June 2010, n=1,945) \*



Number of events \*\*  
 • 1-9  
 • 10-49  
 • 50-99  
 • 100 and more

\* Excludes pandemic (H1N1) virus 2009 events.  
 \*\* China: number includes acute public health events in the special administrative regions of Hong Kong (39) and Macau (2), and in Taiwan (14).

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Date Source: World Health Organization  
 Map Production: Public Health Information and Geographic Information Systems (GIS) World Health Organization  
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## Essential components for control

- National and Global leadership
- Community awareness/support (community outreach, social mobilization and other good practices)
- Care of ill
- Stop transmission
  - Actively identify, investigate ALL new cases, contacts, deaths
  - Maintain detailed databases
  - Monitor contacts for 21 days (isolate if ill)
  - Confirm absence of virus by testing during recovery
- Prevent
  - Informed HCW, consistent infection control /prevention
  - Culturally-sensitive practices to reduce transmission

## International Health Regulations - 2005

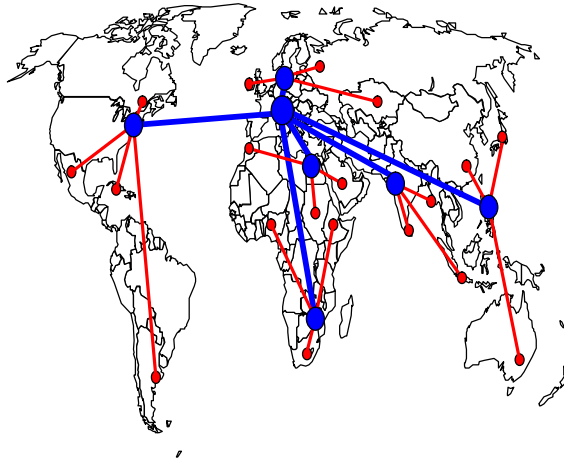
*“In today’s connected world, health security is a global issue...196 countries have agreed to work together to prevent and respond to public health crises...WHO plays the coordinating role. Through the IHR, WHO keeps countries informed about public health risks, and works with partners to help countries build capacity to detect, report and respond to public health events.”*





## WHO strengths and structures

- **Mandate** and International Agreement (IHR 2005)
- **WHO Decentralized Structure & Capacity**
  - 6 regional and 142 country offices
- Our collective **Experience** in managing public health events
- The **Networks and Partnerships**



## WHO Response To-Date

- Grade 3 emergency for WHO
- Information reports & communications
- > 200 experts deployed to 3 countries
  - WHO and GOARN partners
  - Epidemiology, logistics etc
  - Direct patient care
- Deployment of mobile labs & support national labs
- Ongoing shipments of PPE, other supplies
- High level meetings / support



## Critical Issues

- First large Ebola outbreak in West Africa
- Serious national & global health security threat
- Underlying weakness in health systems
  - Lack of preparedness
  - Surveillance, health care, communications ...
  - Health worker infections & inadequate infection control & prevention
- Effect of fear
  - Strong community resistance in places .....

## Critical Issues

- Cross-border infections & travelers
  - Nigeria
  - Ill travelers testing negative
  - Coordination & contact tracing
- Many partners at limits of capacity
  - Ongoing weaknesses in operations
- Socio-economic impact



When data from these studies is available, the following recommendations can be made in the context of the particular disease outbreak

For example: there are the general items shown earlier , avoid sick animals, but messages can be targeted to those in affected areas and those that may be affected in the future


Likewise, distribute bednets, repellants, etc to the affected population

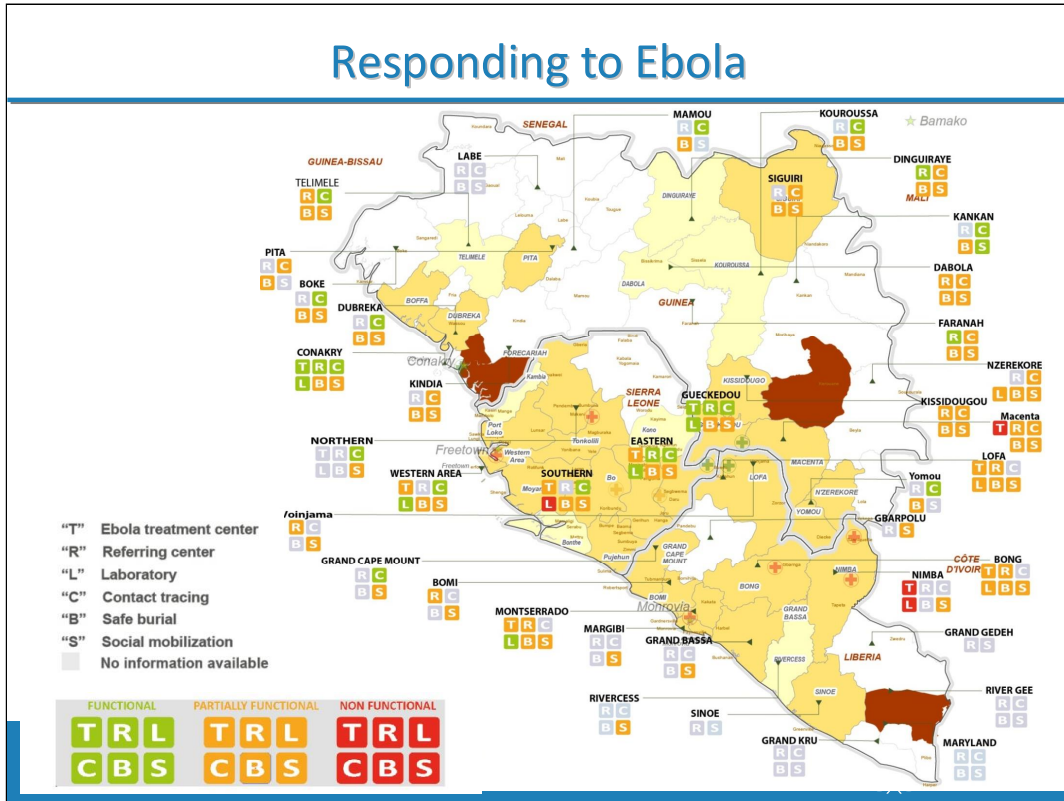
Implement effective vector control programs

movement of animals - from where to where

conduct vaccination campaigns safely in appropriate l

Ebola Response Roadmap	
OBJECTIVES	KEY MILESTONES
<b>1</b> Full geographic coverage with <b>complementary activities</b> in areas of intense transmission	Reverse trends in 3 months; Stop all Ebola in 6-9 months
<b>2</b> <b>Emergency application of Ebola response</b> in areas with new/localized case(s)	Stop outbreak in 8 weeks
<b>3</b> Preparedness, esp. countries with <b>land borders</b> with intense transmission areas	Within 1 month





## How we can change - 'Complementary Strategies'

***Massive scale-up of community  
engagement is essential to reduce the  
intensity of transmission  
(e.g. 'Ebola Care Units')***



## Essential Assistance Needed

- **Huge surge of expertise (esp. ETCs)**
- **In-country medical care & *medevac***
- **Material support & financing**
- **Maintain travel, trade & air bridge**



## Essential Services & Platform

**Stopping Ebola is increasingly  
dependent on ensuring essential services  
& a strong, common operational platform.**



## POTENTIAL FUTURE RISKS

- **Lack of an integrated approach**
- **Competing priorities**
- **Quality of visionary political Leadership**

## Lack of integrated approach

- **Shaping a better response for the future**
- **To accelerating sustainable growth we need to integrate social impact (measure the investment)**



September in NY the Global Assembly, before that the Financing for Development reMeeting in Ethiopia Social Development Goals (SDGs) now substituting the MDGs

## Lack of integrated approach

Although some improvements have been observed in the rescinding of excessive or inappropriate travel and transport measures, 34 countries continue to enact measures that are disproportionate to the risks posed, and which negatively impact response and recovery efforts. Furthermore, a number of international airlines have yet to resume flights to the affected countries



September in NY the Global Assembly, before that the Financing for Development reMeeting in Ethiopia Social Development Goals (SDGs) now substituting the MDGs

## Competing priorities

- Security
- Other epidemic
- Climate change
- Famine
- Migration

## Quality of visionary political leadership

- **Catalyst**
- **Future vision and understanding**
- **The Grand scheme of things, 'the bird eye view'**

## POTENTIAL FUTURE RISKS

- **Integrate current and future externalities in the response to epidemics.**
- **Drivers of a complex emergency:**
  - **Internal**
  - **Contextual**
  - **New factor - unknown**

## What to look for and where to look for it.

