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GLOBAL STRATEGIES:
PLANNING & RESPONDING TO PUBLIC HEALTH EMERGENCIES
Panel 1
11:15 – 12:30
Global Strategies: Planning & Responding to Public Health Emergencies

- Jagan Chapagain, International Federation of Red Cross and Red Crescent Societies (IFRC)
- Chibuzo Eneh, National Center for Disease Control Nigeria
- Nathalie Imbault, CEPI – Coalition for Epidemic Preparedness Innovations, London
- Dr. Georges Ki-Zerbo, World Health Organization (WHO) African Region
- Dr. Julie Swann, NC State University, Moderator
Global Strategies: Planning and Responding to Public Health Emergencies- *Experiences from Nigeria*

Pharm Chibuzo Eneh
Health Emergency Preparedness and Response
Nigeria Centre for Disease Control
Pandemics: A threat to health and prosperity

- Nigeria CDC activated for multiple outbreaks in 2017-18: Lassa Fever, Yellow Fever, Monkey Pox, Cerebrospinal Meningitis

- SARS (2009) resulted in 900 deaths and cost an estimated $54 billion USD

- Ebola (2014) resulted in 11,310 deaths and cost an estimated $2.8 billion USD

JEE Assessment Scores

• Lower Middle Income
  • Population size ~ 186 million
• Annual population growth rate of 2.6%
• Low total expenditure on health as a percentage of GDP
Nigeria’s National Public Health Agency

Mandate

• Prevent, detect, and control diseases of public health importance.

• Coordinate surveillance systems to collect, analyse and interpret data on diseases of public health importance to guide action

• Support States in responding to small outbreaks, and lead the response to large disease outbreaks

• Develop and maintain a network of reference and specialised laboratories

• Conduct, collate, synthesise and disseminate public health research to inform policy

• Coordinate the compliance with international health regulations
**The NCDC vision**

**NCDC Vision**

A healthier and safer Nigeria through the prevention and control of diseases of public health importance

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**NCDC Mission**

To protect the health of Nigerians through evidence based prevention, integrated disease surveillance and response activities, using a one health approach, guided by research and led by a skilled workforce

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**five key goals**

1. **A:** Accurately measure the burden of infectious diseases in Nigeria
2. **B:** Meet international obligations as a member of the World Health Assembly
3. **C:** Develop a PH laboratory service network to support the detection, prevention and response to critical infectious diseases
4. **D:** Reduce the adverse impact of predictable and unpredicted public health events
5. **E:** Clear focus of disease prevention, risk communication and programmes coordination
The Incident Coordination Centre (ICC)
Serve as the physical space within NCDC where ALL incidents are routinely managed: i.e. logged, assigned, monitored and response decisions determined

1. Streamlined coordination
2. Efficient Resource Utilisation
3. Incidence response status tracking
4. Manageable Span of Control
5. Automated Operations
Innovation: We are developing a Medical Countermeasures supply chain plan

A framework for managing MCM logistics and supply chain operations in response to infectious disease outbreaks including MoUs with partners

 Applies to events that require distribution of Medical assets from NCDC strategic national stockpile, MDAs to States & LGAs and other partners

Addresses supply chain operations for disease outbreak response requiring levels 2 and 3 response operation that have requirements exceeding the usual threshold and re-emerging and non endemic diseases in Nigeria

NIGERIA CENTRE FOR DISEASE CONTROL
Thank you

Nigeria Centre for Disease Control

A healthier and safer Nigeria through the prevention and control of diseases of public health importance
Coalition for Epidemic Preparedness and Innovations: A Global Partnership
What is the Coalition for Epidemic Preparedness Innovations (CEPI)?

CEPI—a new global R&D organisation for epidemic preparedness and response

The outbreak of Ebola in West Africa in 2014 highlighted the need for a new global R&D organisation for epidemic preparedness and response. CEPI stands for the Coalition for Epidemic Preparedness Innovations. It is a new global R&D organisation for epidemic preparedness and response, founded in 2016 by the Gavi Alliance, the World Health Organization and the Bill & Melinda Gates Foundation.

CEPI was established to fund and accelerate the development of vaccines for emerging infectious diseases. The goal is to provide the world with vaccines before outbreaks occur, ensuring that the world is better prepared for future pandemics.

CEPI operates independently from existing organisations and is focussed on rapid development of vaccines to tackle existing and new pathogens. CEPI is not itself involved in vaccine research or production, but funds the development of vaccines from concept to licensing stage. The development of vaccines is done by a network of research organisations, academic institutions and biotech companies.

CEPI is committed to addressing many of the existing vaccine gaps by focusing on developing vaccines for diseases that currently lack vaccines, for diseases that are difficult to control with existing vaccines, and for diseases that are likely to become more prevalent due to climate change and globalisation.

CEPI is a non-profit organisation and is governed by a Board of Directors comprising representatives from the founding partners and other stakeholders. CEPI is funded by contributions from a wide range of public and private sources.

CEPI's mission is to ensure that the world is better prepared for future pandemics, by developing vaccines that can be used to prevent, control and reverse the spread of the world's most damaging infectious diseases. CEPI believes that by investing in research and development now, we can help prevent the next pandemic and protect the world from the devastating consequences of infectious diseases.
Strategic objectives

1. Preparedness
2. Response speed
3. Market predictability
4. Equity
## CEPI is both facilitator and funder in a complex ecosystem

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<td>Responding Organizations (e.g. MSF)</td>
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<td>Regulators</td>
<td>BARDA/DTRA etc.</td>
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### Significant focus by others

- Academia
- Governments
- WT/NIH
- EC/IMI
- GLOPID-R
- Industry
- Regulators
- Biotech

### CEPI as facilitator

- Industry
- Governments
- Regulators
- WT/NIH
- EC/IMI
- Bill and Melinda Gates Foundation
- BARDA/DTRA etc.
- WHO
- Biotech
- PDPs

### CEPI as funder

- Industry
- Governments
- Regulators
- WHO
- GHIF

### Significant focus by others

- GAVI
- UNICEF
- PAHO
- Governments
- WHO
- Industry
- Pandemic Emergency Facility (World Bank)
- WHO Contingency Fund
- Countries
- WHO
- UNICEF
- Responding Organizations (e.g. MSF)

### New vaccines for a safer world

[www.cepi.net](http://www.cepi.net)
CEPI’s initial targets derived from WHO R&D Blueprint

CEPI’s Scientific Advisory Committee chose three initial diseases based on expected public health impact, risk of an outbreak occurring, and feasibility of vaccine development.

Just in Case Vaccines:

- **MERS-CoV**
- **Lassa**
- **Nipah**
Four partnership agreements signed

• Novel proprietary platform to develop vaccines against Lassa Fever and MERS-CoV
  - Up to $37.5 million
  - Lassa vaccine could enter phase 1 clinical trials by late 2018/early 2019.

• Using Inovio’s ASPIRE platform to develop DNA vaccines against Lassa Fever and MERS-CoV
  - Up to $56.0 million

• Partnership to support development of IAVI’s replicating viral vector-based Lassa vaccine candidate,
  - Up to $10.4 million to support the first phase of the project, with options to invest up to a total of US$54.9 million over five years (including stockpile).

• Partnership to advance development and manufacture of a vaccine against the Nipah virus
  - Up to $25 million

• Profectus to receive development funding for advance its Nipah virus vaccine; Emergent to provide technical and manufacturing support for the CEPI-funded program.
  - PATH to work on clinical development.
Just in Time Vaccines: Platform Technologies

• CEPI will support the development of vaccine platform technologies that can be rapidly deployed against known and newly emerging pathogens, to limit or prevent future outbreaks of known or new diseases

• Projects must demonstrate
  ➢ Safety and immunogenicity
  ➢ Validation of the platform using 3 pathogens:
    – 2 with known correlates of protection & validated animal model
    – 1 from the WHO priority pathogen list

• Manufacturing performance characteristics
  ➢ 16 weeks for development of vaccine for a new pathogen (up to phase I)
  ➢ 6 weeks to clinical benefit after 1st dose
  ➢ 8 weeks to produce 100,000 doses after go-decision
CEPI in epidemic response: learning to accelerate vaccine development: Lassa, 2018

• First focus remains on priority pathogens
• Even when vaccine candidates are not ready for clinical trials, CEPI must ensure that critical information is collected, with the goal of accelerating vaccine development
  • Epidemiology, good diagnostic tests, correlates of protection are all critical to vaccine development and trial design
• CEPI will contribute to strengthening in-country research capacity to conduct vaccine trials, between and/or during epidemics
• CEPI-WHO collaboration leverages work of WHO’s R&D Blueprint and new response structure to accelerate vaccine development
Thank you

Nathalie Imbault
Global Development Programme Manager
nathalie.imbault@cepi.net
@NathalieImbault
Planning and Responding to Public Health Emergencies

17-19 July 2018

Dubai

Georges Alfred Ki-Zerbo - WHO
Outline

• Frameworks
  • UHC/SDGs
  • WHO ERF and SoPs
  • WHO and UNISDR DRR

• Country Experience
  • From West Africa EVD to Likati 2017

• Way forward
  • EVD Vaccines for Guinea & for the World/WHO Blueprint
  • Robust One Health and DRR Platforms
  • Implement post IHR/JEE National Health Security Plans
4 Big Lessons from Ebola

- Pathogens pose **unique threat** to global security
- A little **preparedness** can have a huge impact
- **Humanitarian/emergency system** essential for effective outbreak response
- **WHO crucial role** in leading health emergencies
- **Resolution EBSS3.R1** (2015), DG Independent Advisory group, SG High level panel: **urgent need for reform**
Health Emergencies Panel

Healthy Lives and Wellbeing for All at All Ages

- UNIVERSAL HEALTH COVERAGE
  - Essential services availability
  - Essential services coverage
  - Financial risk protection

- OTHER SDGs HEALTH INTERVENTIONS
  1. Poverty
  2. Nutrition
  3. Education
  4. Equality
  5. Clean water
  6. Health security
  7. Partnerships

- HEALTH SECURITY

Impact
SDG 3 goal

Outcomes
Essential services utilization

Outputs
Health system performance

Inputs / Processes
Health system building block investments

National and sub national service delivery systems

- Health Financing
- Health Infrastructure
- Health Workforce
- Health Governance
- Medicines, Products & Supplies

Service Satisfaction
Reform of WHO's work in health emergency management

WHO Health Emergencies Programme

Report by the Director-General

1. In resolution EB113.R1 (2015), the Executive Board at its Special Session on the Ebola Emergency made a number of requests of the Director-General. These involved wide-ranging reforms to be undertaken in WHO’s work in outbreaks, humanitarian emergencies and crises. In keeping with decisions of WHO’s governing bodies, these reforms have been guided by an Ebola Interim Assessment Panel, a Director-General’s Advisory Group on Reform of WHO’s Work in Outbreaks and Emergencies with Health and Humanitarian Consequences, and a Review Committee on the Role of the International Health Regulations (2005) in the Ebola Outbreak and Response. The reform of WHO’s work in emergencies is also aligned with the report of the United Nations Secretary-General’s High-level Panel on the Global Response to Health Crises. The present report provides an overview of the design, oversight, implementation plan and financing requirements for the new Programme.
All-Hazards: Preparedness/IHR, risk assessment and response

WHO’s role in emergencies

- Natural Disaster (IASC/OCHA lead)
- Conflict (IASC/OCHA lead)
- Infectious Outbreaks (WHO lead role)
- Chemical (Specialized Mechanisms)
- Nuclear Disaster (Specialized Mechanisms)

Event Grading

IMS and Response
How is WHO meeting the challenge?

- Early warning, risk assessment, and emergency response
- Prevention and control strategies for high-threat infectious hazards
- IHR assessment and core capacities strengthening
- Health systems strengthening in high-vulnerability countries
# Key functions and expected results

| E1 | **Infectious Hazards Management** - All Countries are equipped to mitigate risks from high-threat infectious hazards |
| E2 | **Country Health Emergency Preparedness & IHR** - All countries assess and address critical gaps, including in IHR core capacities, to be prepared for health emergencies |
| E3 | **Health Emergency Information & Risk Assessment** - Health events are detected, and risks are assessed and communicated for appropriate action |
| E4 | **Emergency Operations** - Populations affected by health emergencies have access to essential life-saving health services and public health interventions |
| E5 | **Core services** - National emergency programmes are supported by a well-resourced and efficient WHO Health Emergencies Programme |
Support National Action Plans to address gaps

Country Self Evaluation is enhanced by the Joint External Evaluation (JEE).

Based on JEE (and PVS) results, costed action plan to address gaps.

Domestic resources + support by multilateral and bilateral partners to monitor progress and fully implement national action plan.

TARGETS AND VULNERABILITIES
inform country capacity evaluation

COUNTRY ASSESSMENTS

PARTNERS’ COMMITMENT & COUNTRY INVESTMENTS

COUNTRY ACTION PLANS

TEXT PARTNERS’ COMMITMENT & COUNTRY INVESTMENTS

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Performance management

**IMMEDIATE AFTER-ACTION REVIEW**
Immediate capture of strengths, areas for improvement, and needs through key stakeholder interviews

**OPERATIONS REVIEW**
Systematic assessment of action against operational plan

**EVALUATION AND LESSONS LEARNED REVIEW**
Formal reviews to assess performance standards with internal and external interviews

**PROGRAMME PERFORMANCE ASSESSMENT**
Annual programme assessment against 'Results Framework Indicators'
WHO's Incident Management System organizational structure: critical functions and sub functions
Summary – HWO role in Emergencies

- Programme established, strong progress being made, continued refinements needed

- HWO/WR role is key to success:
  - to support countries prepare, mitigate risk, respond & recover
  - to sustain support from national, regional & international donors

- Major focus now:
  - demonstrate leadership & concrete results at country level
  - implement country business model
  - strengthen local partnerships through regular engagement and joint problem solving
Strategic priorities

• Ensure high profile disease-specific strategies and are in place and applied in countries (yellow fever, cholera ...)
• Measure number, quality and comprehensiveness of national prevention and preparedness action plans (through joint external evaluation)
• Undertake robust and timely risk assessment and response to every significant new acute event (all-hazards)
• Strengthen partnerships for coordinated and predictable collective action
• Implement the new “country business model” in G3 / high-risk countries that result in delivery on the response plan
WHO R&D Blueprint for Action to prevent Epidemics: an overview

3 Approaches

A. Improving coordination
   - Steps to create a Global Coordination Mechanism for R&D
   - Options for financing R&D

B. Accelerating R&D
   - Revised list of prioritized pathogens
   - MERS-CoV roadmaps (Lassa, Nipah, CCHF, Zika) in process
   - TPPs for Zika, MERS-CoV, Ebola, Lassa, Nipah
   - EUAL procedure
   - Zika R&D response
   - Identification of potential platform technologies

C. Developing new norms & standards
   - ICMJE guidelines for sharing results
   - Steps to inform discussions on trial designs
   - Developing MTA capacity building tool
   - Options for liabilities
Global Ebola Vaccine Implementation Team

**Partners**

Guinea  Liberia  Sierra Leone

**Effort scope and objectives**

**Support development and dissemination of**

- Tools and guidelines
- Synthesis of evidence to inform strategies and policies
- Community engagement strategy and communications

*for future Ebola vaccine use*

**Provide capacity and work with Ministries of Health and partners to**

- Develop and implement their country plans
- Enable and facilitate in-country planning, management, and coordination mechanisms including Emergency Operations Centers

*for future Ebola vaccine use*
Efficacy and effectiveness of an rVSV-vector vaccine in preventing Ebola virus disease: final results from the Guinea ring vaccination, open-label, cluster-randomised trial (Ebola Ça Suffit!)


Summary

Background rVSV-ZEBOV is a recombinant, replication-competent vesicular stomatitis virus-based candidate vaccine expressing a surface glycoprotein of Zaire Ebola virus. We tested the efficacy of rVSV-ZEBOV in preventing Ebola virus disease in contacts and contacts of contacts of recently confirmed cases in Guinea, west Africa.

Methods We did an open-label, cluster-randomised ring vaccination trial (Ebola ça Suffit!) in the communities of Conakry and eight surrounding prefectures in the Basse-Guinée region of Guinea, and in Tombofél and Bombali in Sierra Leone. We assessed the efficacy of a single intramuscular dose of rVSV-ZEBOV (2x10^6 plaque-forming units administered in the deltoid muscle) in the prevention of laboratory-confirmed Ebola virus disease. After confirmation of a case of Ebola virus disease, we definitively enumerated on a list a ring (cluster) of all their contacts and contacts of contacts including named contacts and contacts of contacts who were absent at the time of the trial team visit. The list was archived, then we randomly assigned clusters (2:1) to either immediate vaccination or delayed vaccination (21 days later of all eligible individuals e.g., those aged 18 years and 20 pregnant, breastfeeding, or severely ill). An independent statistician generated the assignment sequence using block randomisation with randomly varying blocks, stratified by location (urban vs rural) and size of rings (<20 individuals vs >20 individuals). Ebola response teams were instructed to vaccinate contacts of contacts of contacts who were absent at the time of the trial team visit and who were subsequently confirmed cases.
Response to Ebola in DRC—2017

- Strong MoH leadership matched by WHO “reforms in action” to provide immediate technical support: Minister visit to Likati, RD mission to Kinshasa. WHO staff deployed from WCO, AFRO and HQ; IMS rapidly set up in Kinshasa, Brazzaville and Geneva.

- Initial alert received from NGO (ALIMA), rapid laboratory confirmation at INRB, immediate risk assessment, information sharing through IHR with MS, GOARN partners and stakeholders.

- WHO technical and operational coordination of multi-disciplinary, multi-agency outbreak response team deployed in Likati to support MoH/local health authorities; addressing major logistical and infrastructure challenges, including security and staff health.

- Deployment of first field lab from INRB for EVD response; key role of Red Cross volunteers at community level; strong partner coordination and communication on response planning and implementation of major “EVD pillars” – MSF/ALIMA, UNICEF, Red Cross, and technical advisory role for GOARN partners.

- 12 tons of response materiel deployed, including PPE, isolation facilities, field labs, field coordination office and equipment, communications equipment, and field support for 30 staff including transport.
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<tr>
<th>Date</th>
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<td>22 Apr</td>
<td>Possible index case</td>
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<tr>
<td>9 May</td>
<td>Signal of undiagnosed illness detected by MOH/WHO</td>
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<td>10 May</td>
<td>First deployment from MOH/WHO</td>
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<td>11 May</td>
<td>Laboratory confirmation by INRB</td>
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<td>12 May</td>
<td>DRC notifies WHO, MS notified; RD visit; IMS and GOARN activated</td>
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<tr>
<td>13 May</td>
<td>Alert posted on WHO website</td>
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<td>14 May</td>
<td>Agreement reached with WFP and UNHAS to provide helicopter transportation</td>
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<tr>
<td>15 May</td>
<td>First WHO surge team deployed</td>
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<tr>
<td>16 May</td>
<td>First public situation report on website</td>
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<td>17 May</td>
<td>Minister of Health and WR fly to Likati and PPE/supplies, mobile lab</td>
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<td>18 May</td>
<td>Vaccine protocol to national authorities</td>
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<td>19 May</td>
<td>Inter-Agency Coordination Group meeting</td>
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<td>20 May</td>
<td>Samples tested at mobile lab in Likati</td>
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**Response to Ebola in DRC--faster timeline**
Universal health coverage and health emergencies are cousins—two sides of the same coin. Strengthening health systems is the best way to safeguard against health crises.

Dr Tedros Adhanom Gebreyesus

WHO DG
Following SAGE 2017 conclusions & recommendations

Ring vaccination is the recommended delivery strategy, including people at risk:

(i) contacts and contacts of contacts
(ii) local and international health care and front line workers in the affected areas
(iii) health care and front line workers in areas at risk of expansion of the outbreak

SAGE supported the ongoing development of all candidate vaccines and recommends that vaccine developers submit data as they become available to the WHO Secretariat to inform policies.
Thank you to our 2018 HHL Conference Sponsors!