



# **EBOLA RESPONSE ROADMAP**

**(Advance Copy)**

## **GOAL**

To stop the ongoing Ebola transmission globally within 6-9 months, while addressing the broader socioeconomic impact in areas of intense transmission and rapidly managing the consequences of any international spread.

## **CONTEXT**

The 2014 Ebola Virus Disease (EVD, or “Ebola”) outbreak continues to evolve in alarming ways, with the severely affected countries, Guinea, Liberia, and Sierra Leone, struggling to control the escalating outbreak against a backdrop of severely compromised health systems, significant deficits in capacity, and rampant fear.

To accelerate actions to prevent the spread of EVD in West Africa, WHO convened a Ministerial meeting in July 2014 in Accra, Ghana, and established an operations coordination centre in Conakry, Guinea. The escalating scale, duration and mortality of the outbreak led the Governments of Guinea, Liberia, and Sierra Leone and WHO to launch an initial Ebola Virus Disease Outbreak Response Plan on 31 July 2014 which outlined the main pillars for action based on the situation at that time and an initial estimate of resource requirements. Since then the outbreak has been further complicated by spread to Lagos, Nigeria.

In August 2014, an Emergency Committee was convened by the Director-General of WHO under the International Health Regulations (2005) [IHR 2005] which informed the Director-General’s decision on 8 August 2014 to declare the Ebola outbreak a Public Health Emergency of International Concern and issue several Temporary Recommendations to reduce the risk of international spread.

As of 19 August 2014, the cumulative number of Ebola cases in the affected countries stands at more than 2100, with over 1100 deaths, the largest Ebola outbreak ever recorded. An unprecedented number of health care workers have been infected (194) and 95 have died.

National authorities in the affected countries have been working with WHO and partners to scale-up control measures. Despite this, the EVD outbreak remains grave and transmission is still increasing in a substantial number of localities, aggravating fragile social, political and economic conditions in the sub-region and posing increasingly serious global health security challenges and risks.

The Ebola response activities to date have generated significant knowledge on the effectiveness and limitations of current approaches, highlighting key areas for course corrections. Clearly a massively scaled and coordinated international response is needed to support affected and at-risk countries in intensifying response activities and strengthening national capacities. This updated and more comprehensive roadmap builds on current, country-specific realities to guide response efforts and align implementation activities across different sectors of government and international partners.

## **PURPOSE OF DOCUMENT**

To assist governments and partners in the revision and resourcing of country-specific Ebola operational plans, and the coordination of international support for their full implementation.

## **OBJECTIVES**

1. To achieve full geographic coverage with complementary Ebola response activities in countries with widespread and intense transmission
2. To ensure emergency and immediate application of comprehensive Ebola response interventions in countries with an initial case(s) or with localized transmission
3. To strengthen preparedness of all countries to rapidly detect and respond to an Ebola exposure, especially those sharing land borders with an intense transmission area and those with international transportation hubs

## PRIORITY ACTIVITIES

### OBJECTIVE 1: To achieve full geographic coverage with complementary Ebola response activities in countries with widespread and intense transmission

**Key Milestones:** Reverse the trend in new cases and infected areas within 2 months, and stop all residual transmission within 6-9 months

#### PRIORITY ACTIVITIES

- **Apply full Ebola intervention package to the extent of available resources**
  - Case management: Ebola treatment centres with full infection prevention & control (IPC) activities; Ebola referral/isolation centres; referral processes for primary health care facilities
  - Case diagnosis: by a WHO-recognized laboratory
  - Surveillance: contact tracing and monitoring
  - Burials: supervised burials with dedicated expert burial teams
  - Social mobilization: full community engagement in contact tracing and risk mitigation
- **Develop and apply complementary approaches for intense transmission areas**
  - Case management: community-based care supported by intensified IPC and appropriate PPE
  - Case diagnosis: by epidemiologic link to case confirmed by WHO-recognized laboratory
  - Surveillance: monitoring for new transmission chains (i.e. in infected areas)
  - Burials: trained and PPE-equipped community burial teams
  - Social mobilization: community engagement to implement complementary approaches
- **Institute short-term extraordinary measures to limit national spread**
  - Implement specific programmes to ensure continuity of essential and supportive services in containment areas (e.g. primary health care, psychosocial support, food)
  - Stop non-essential movement in and out of intense transmission/containment areas
  - Defer mass gatherings until intensity of transmission is reduced
- **Implement WHO's Temporary Recommendations under IHR to prevent international spread**
  - Prohibit travel of all Ebola cases and contacts
  - Implement and monitor exit screening at international airports, seaports and major land crossings
  - Align practices of all international airline carriers with national travel policy
- **Ensure essential services and lay the foundation for health sector recovery and strengthening of national core capacities for outbreak response**
  - Establish short-term capacity to address critical gaps in essential services (incl. health, food, education, WASH (water, sanitation and hygiene)) through national service providers, NGOs, UN agencies, humanitarian organizations and other partners, and based on needs assessment and gap analysis
  - Develop a medium-term investment plan to strengthen health services that includes syndromic surveillance and laboratory networks to diagnose relevant pathogens
  - Introduce a fast-track training programme for priority health worker gaps (incl. surveillance)

**OBJECTIVE 2: To ensure emergency and immediate application of comprehensive Ebola response interventions in countries with an initial case(s) or with localized transmission**

**Key Milestone:** Stop all transmission within 6-8 weeks of index case

**PRIORITY ACTIVITIES**

- **Initiate emergency health procedures**
  - Immediately communicate the case and relevant information to WHO through the IHR
  - Establish an emergency operations center and activate relevant national disaster/emergency management mechanisms
  - Coordinate operations and information across all partners, and the information, security, finance and other relevant sectors
  - Initiate public crisis/risk communications plan
  
- **Immediately activate Ebola response protocols and facilities**
  - Immediately isolate all suspect and confirmed cases in designated Ebola treatment centre with full IPC
  - Secure access to diagnostic capacity in a WHO-recognized laboratory
  - Fully implement contact tracing and monitoring
  - Ensure safe burials
  - Implement public communications strategy to facilitate case identification, contact tracing and risk education
  
- **Implement IHR Temporary Recommendations to prevent international spread**
  - Prohibit travel of all Ebola cases and contacts

**OBJECTIVE 3: To strengthen preparedness of all countries to rapidly detect and respond to an Ebola exposure, especially those sharing land borders with areas of active transmission and those with international transportation hubs**

**Key Milestone:** Full Ebola surveillance preparedness and response plan established in areas sharing a land border with an Ebola infected country and at all major international transportation hubs within one month

**PRIORITY ACTIVITIES**

➤ ***In all unaffected countries***

- Provide advice to travelers to Ebola affected areas with relevant information on risks, measures to minimize those risks, and steps to take following a potential exposure
- Identify an isolation unit where any suspect Ebola case could be properly investigated and managed
- Verify access to a diagnostic capacity in a WHO-recognized laboratory
- Establish a strategy for identifying and monitoring the contacts of any suspect Ebola case

➤ ***In all unaffected countries sharing a land border with an Ebola infected area***

- Establish active surveillance for clusters of unexplained deaths or febrile illness in areas bordering Ebola-affected countries and in major cities
- Provide the general public with accurate and relevant information on the neighbouring Ebola outbreak and measures to reduce the risk of exposure
- Establish a protocol for managing travelers who arrive at major land crossing points with unexplained febrile illness
- Identify and prepare an isolation unit where any suspect Ebola case can be properly investigated and managed
- Arrange a process for rapidly shipping diagnostic specimens to a WHO-recognized laboratory
- Engage international support team(s) if/as required to accelerate the development, implementation and assessment of preparedness measures

➤ ***In all unaffected countries with an international transportation hub***

- Reinforce the capacity to manage travelers who arrive at international airports with unexplained febrile illness and potential exposure to Ebola
- Ensure a protocol, and identify an isolation unit, for the investigation and management of any suspect Ebola case

## MAJOR ISSUES IN OPERATIONALIZING THE EBOLA RESPONSE ROADMAP

- **Human Resources for Strategy Implementation:** mobilizing and sustaining sufficient human resources to implement Ebola response interventions requires a comprehensive approach to their remuneration, training, equipment, physical security, and access to health care. Implementation of Ebola response activities to date have highlighted a number of specific considerations that must be addressed to operationalize fully the Ebola Roadmap:
  - National staff considerations:
    - *Remuneration:* Governments must rapidly establish a comprehensive package that defines the salary, hazard pay and – where appropriate – insurance/death benefit available to each category of worker required to implement the national strategy (e.g. physicians, nurses, physicians assistants, laboratory workers, cleaners, burial teams, surveillance officers). If necessary, UN (e.g. WHO) or partner agencies should assist Government as needed in implementing this package.
    - *Training & Equipment:* a specific accelerated training programme must be developed for each category of worker that is adaptable to the district/treatment center level and places particular emphasis on IPC and proper use of PPE. All Ebola workers must have access to sufficient quantities of the appropriate PPE.
  - International staff considerations:
    - *Mobilization of International Expertise:* WHO and partners will continue the intensive outreach to all international medical NGOs, humanitarian organizations (i.e. the Red Cross Movement), Global Health Cluster partners, foreign medical teams and Global Outbreak & Alert (GOARN) Partners to mobilize sufficient medical expertise to support the staffing of all Ebola Treatment Centres in countries with intense and widespread transmission. For newly infected countries, Rapid Response Teams should be deployed within 72 hours, if requested, to provide expert support to the establishment and staffing of new case management facilities.
    - *Accelerated Training of Supplementary International Expertise:* WHO will establish a specific programme to identify, train and deploy an extended roster of international health care workers to provide clinical care in Ebola treatment centres and Ebola referral/isolation centres.
  - *Medical Care of Health Workers:* WHO will continue its two-pronged approach to ensuring the best possible care of exposed health workers through a combination of national centres of excellence for Ebola treatment in affected countries (for national and international health workers) and medical evacuation where necessary and appropriate.
- **Security:** where necessary, and particularly in areas of intense transmission and short-term extraordinary containment measures, national/local authorities must plan for and deploy the security services necessary to ensure the physical security of Ebola facilities. Particular attention must be given to ensuring the security of the staff working in Ebola treatment centres, Ebola referral/isolation centres, laboratories and, if required, for teams working at the community level to conduct surveillance, contact tracing and safe burials.

- **Rapid Access to a WHO-Recognized Ebola Diagnostic Laboratory:** recognizing the limited number of facilities globally to reliably diagnose Ebola infection, WHO will work with its global network of collaborating centres and partners to ensure:
  - all countries with intense and widespread Ebola transmission have sufficient in-country diagnostic capacity to serve all Ebola treatment centres and Ebola referral/isolation centres
  - all countries that are newly infected with EVD or have localized transmission have either in-country diagnostic capacity or rapid access (within 72 hours) to a WHO-recognized diagnostic facility
  - all countries at particular risk for EVD have a designated WHO-recognized diagnostic facility that is prepared to receive and process as a matter of urgency samples from suspect Ebola cases.
  
- **Personal Protective Equipment (PPE), IPC Materials & Other Essential Supplies:** the escalation of the Ebola outbreak combined with enhanced preparedness efforts globally and the scale-up of response activities in affected countries, particularly through deeper community mobilization and engagement in essential response activities (e.g. community care, surveillance, safe burials), will make substantial additional demand on supplies of PPE, IPC materials and other essential supplies such as disinfectants, tents and body bags. Ensuring appropriate PPE, IPC and other essential materials are available in sufficient quantities for all infected areas will require further international coordination of supply. WHO will enhance its work in support of the procurement and provision of PPE and IPC materials for governments and partners, particularly those operating in worst affected areas. Collaboration with WFP will be strengthened to facilitate the timely transport and delivery of such materials as required.
  
- **Infrastructure & Transport:** enhanced response implementation and coordination requires the designation by national, subnational and local authorities of sufficient, appropriate and well-located facilities to house all elements of the response, from crisis management teams to Ebola treatment centres and Ebola referral/isolation centres. The international community and partners should be prepared to assist with the rapid repurposing and equipping of such facilities where required. Additional transport capacity must be properly assessed and budgeted in national operational plans to address all elements of the Ebola intervention package from the safe transport of cases and specimens, to the work of burial teams and contact tracers.
  
- **Information Management & Data Analysis:** tracking the impact of the Ebola Roadmap, optimizing the deployment of resources, and ensuring timely course corrections requires a substantial improvement in the collection, management, analysis and dissemination of relevant data on the epidemiology of the disease and the coverage and quality of the full range of control interventions. Additional investment will be made in data collection and management at all levels of the response, the analysis and twice-weekly publication of standard monitoring information and impact indicators, and institutional collaborations to facilitate more sophisticated data analysis and modelling.

- **Research & Product Development:** the primary objective of this work is to fast-track access to treatment and vaccine options to address Ebola Virus Disease, with major activities focused on facilitating the use of experimental medicines and vaccines through:
  - guidance on safety, efficacy, quality, regulatory standards and ethical use of therapies in the R&D pipeline.
  - accelerated development and clinical evaluation of promising experimental interventions.
  - coordination and facilitation of the ethical deployment of existing experimental treatments and vaccines.
  - convening the research community to ensure R&D is oriented towards actual, current needs .
  
- **Technical & Normative Guidance:** the extraordinary nature and geographic extent of this Ebola outbreak, combined with the need to adapt tactics to the intensity of transmission and availability of resources, requires accelerated development, or adaptation, and dissemination of normative/technical guidance to improve control measures in affected countries (e.g. guidelines on safe burials), guidance for at-risk areas (e.g. active surveillance for suspect EVD) and advice relevant to all countries (e.g. advice for travellers). Specific expert task teams, networks and inter-agency working groups will be established or convened as needed to accelerate the drafting, vetting, and finalization of such materials.
  
- **Coordination & Crisis Management**
  - Subnational Level***
    - Designated coordination & crisis management units should be established, or if present strengthened, at the district level in all areas of active Ebola transmission, with highest priority to areas of intense transmission, capital cities and major hubs in other transmission zones. Such units should be hosted by the relevant district authority, housing representatives of WHO, UNICEF, key NGOs and technical agencies, and other major implementing partners to facilitate the implementation and monitoring of the full Ebola package – or complementary approaches if necessary – in all infected localities.
  
  - National level***
    - National governments have responsibility for coordinating the national response effort within their borders, guided by a comprehensive National Ebola Emergency Operational Response Plan and operating through an Emergency Operations Center which houses representatives of all major partners operating in the response.
    - WHO – through its Country Office – will coordinate international support to the national operational plan, including crisis and risk communications. This role will be facilitated by ongoing needs assessment and gap analyses conducted with partner agencies, and comprehensive monitoring of the coverage, quality and impact of response activities. Where a health sector coordination mechanism either does not exist or does not meet the needs of the response, activation of a health cluster may be discussed with government, the UN Resident Coordinator and the United Nations Office for the Coordination of Humanitarian Affairs (OCHA).

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- The UN Country Team – through the UN Resident Coordinator – has responsibility for coordinating the inter-agency support to States with intense, widespread transmission. This may include requesting the activation, where he/she deems appropriate, of the necessary clusters to coordinate support to specific sectors.

***International level***

- WHO (working through its Headquarters, Regional Office for Africa, and Conakry Ebola Operations Hub) will coordinate the overall health response, including crisis/risk communications, through the development and updating of international strategy, the provision of technical guidance on Ebola, monitoring of strategy implementation, and collation, consolidation and dissemination of information on the outbreak and impact of response activities.
- The UN – through the UNSG’s Special Representative – has responsibility for coordinating the overall, multi-sectoral support to States with intense, widespread transmission (currently Liberia, Sierra Leone and Guinea).

## MAJOR ROLES & RESPONSIBILITIES

- **National governments (affected and unaffected countries)**
  - Implement fully the relevant Temporary Recommendations issued under the International Health Regulations (2005) regarding the 2014 Ebola Outbreak in West Africa
  - Lead the organization, coordination, and implementation of national preparedness and response activities, including, where and when relevant, in collaboration with international development and humanitarian partners
  - Mobilize and provide technical expertise and additional medical capacity (esp. foreign medical teams) to countries undertaking large-scale Ebola response efforts
  - In countries with intense and widespread Ebola transmission, enable national agencies to act as rapidly as required, while providing the necessary civil protection and ensuring continuity of essential goods and services
  - When necessary, establish legal/regulatory frameworks and operating environment for international relief efforts
  - Engage in international development cooperation to exchange expertise, lessons learnt and best practices in the re-establishment of health and other essential services subsequent to national emergencies
  
- **Local Political, Community, Traditional, & Religious Leaders (in affected countries)**
  - Leverage deep roots in local communities and congregations to widely communicate accurate information about the risks of Ebola and measures to mitigate exposure
  - Ensure the full engagement of communities in appropriate Ebola control measures, particularly contact tracing and monitoring
  - In areas of intense transmission, lead the collaboration with Ebola response teams to facilitate the full implementation of community-based approaches
  - Take part in public engagement activities, such as community dialogues, to alleviate fear and establish trust in national and international efforts to halt the spread of Ebola
  - Coordinate community projects to ensure the provision of essential services
  
- **WHO**
  - Provide technical leadership and operational support to governments and partners for Ebola control efforts;
  - Monitor Ebola transmission and the impact of interventions in order to guide allocation of resources in line with operational plans
  - Assist in delineating existing response needs and encourage partners to provide the needed resources to meet such needs
  - Facilitate availability of essential health data/information and use of therapies
  
- **UN Agencies**
  - Assist national governments in development of national preparedness plans and, in infected countries, operational plans to guide partner actions and contributions
  - Support the government in garnering international support as needed
  - Provide support for essential services (e.g. health, food, WASH) in worst affected areas

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- Engage partners who contribute to the overall effort, under government leadership, at national and local level

➤ **NGOs**

- Heighten coordination with national authorities, UN agencies and other response partners
- Health
  - Address emergency case management needs and deficits
  - Repurpose existing primary health care and other programmes to support response efforts
  - Mobilize human resources and establish treatment centres
  - Assist in procurement and distribution of essential commodities
  - Support the government in garnering international support as needed
  - Social mobilization and engagement at community level
  - Maintain stocks of emergency supplies and commodities
- Other sectors (WASH, food security, livelihoods, logistics, governance, legal)
  - Repurpose existing programmes to support control efforts

➤ **National and International Technical Agencies & Academic Institutions**

- Provide strategic advice and guidance on the international Ebola response
- Assist through expert task teams and/or working groups to address priority gaps in normative and technical guidance and R&D
- Provide technical expertise, training and capacity building for essential targeted functions including surveillance systems, data generation, information management, and implementation of Ebola response interventions
- Assist with additional and specialized data analytical capacity
- Provide expert staff to augment international control and prevention efforts

➤ **Humanitarian Organizations**

- Deliver lifesaving aid to worst affected communities
- Provide essential services including food, education, and water and sanitation systems, and facilitate the rehabilitation of such services
- Build the capacity of local organizations and support civil society initiatives

➤ **Donors**

- Provide strategy perspectives and advice on the international Ebola response
- Assist with essential resources, including financial and material, to address key deficits in response activities

➤ **Private Sector**

- Provide in-kind supplies and assistance
- Assist international efforts to ensure continuity of airline services to worst affected countries
- Cooperate with international efforts to expedite R&D on experimental therapies
- Coordinate with international efforts to ensure sufficient supplies of appropriate PPE and IPC materials are available for affected countries and areas

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- Maintain business continuity and economic activity in affected countries
- Assist with essential resources, financial and/or material, to address key deficits in response activities

**MONITORING & EVALUATION FRAMEWORK**

The impact and implementation of the Ebola Roadmap will be monitored and evaluated on a twice-weekly basis through a combination of impact/outcome metrics and operational response performance indicators corresponding to each of the three major objectives as outlined below.

**OBJECTIVE 1: To achieve full geographic coverage with complementary Ebola response activities in countries with widespread and intense transmission**

<b>MAJOR IMPACT METRICS</b>	Reverse the trend in new Ebola cases and infected areas within 2 months, and stop all residual transmission within 6-9 months
<b>MAJOR OUTCOME METRICS</b>	<p>Trends in cases (probable and confirmed) and deaths, by district</p> <ul style="list-style-type: none"> <li>• New, weekly and cumulative cases and deaths</li> <li>• Case fatality rates by month</li> </ul> <p>Trends in affected districts, by country</p> <ul style="list-style-type: none"> <li>• Active cases (within last 21 days)</li> <li>• No longer active (no new cases reported in the last 21 days)</li> <li>• Newly infected areas (new cases in the last 7 days)</li> </ul> <p>Trends in cases among health care workers (national and international), by country</p> <ul style="list-style-type: none"> <li>• Number of cases per week</li> <li>• Case fatality rates by month</li> </ul>

**Performance of the Operational Response (measured at district level)**

<b>MAJOR INDICATORS</b>	<p>Presence and quality of Ebola interventions by district:</p> <ul style="list-style-type: none"> <li>• Ebola treatment and referral centres</li> <li>• Laboratory access</li> <li>• Surveillance and contact tracing</li> <li>• Safe burial</li> <li>• Social mobilization</li> </ul> <p>Active exit screening at all major international airports, seaports and major land crossings</p>
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**Intervention-specific Indicators (measured at district level)**

<b>Ebola treatment center</b>	<ul style="list-style-type: none"> <li>• Number of treatment beds</li> <li>• Staff-to-bed ratios</li> <li>• Health care workers infected</li> </ul>
<b>Ebola referral centres</b>	<ul style="list-style-type: none"> <li>• Proper triage/investigation spaces designated (with IPC, staff, PPE, etc.)</li> <li>• Presence of safe transport systems to Ebola treatment center</li> </ul>

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<b>Diagnostic capacity</b>	<ul style="list-style-type: none"> <li>• Access to a WHO-recognized laboratory</li> <li>• Number of tests performed per week</li> </ul>
<b>Social mobilization / community engagement</b>	<ul style="list-style-type: none"> <li>• Presence of social mobilization programme/capacity</li> <li>• Number of events reflecting community resistance</li> </ul>
<b>Surveillance and contact tracing</b>	<ul style="list-style-type: none"> <li>• Completeness of weekly active surveillance reports</li> <li>• Number of contacts being traced</li> <li>• % of contacts followed for 21 days</li> </ul>
<b>Safe burials</b>	<ul style="list-style-type: none"> <li>• Number of trained and equipped safe burial teams</li> <li>• Number of safe burials per week</li> </ul>

**OBJECTIVE 2: To ensure emergency and immediate application of comprehensive Ebola response interventions in countries with an initial case(s) or with localized transmission**

<b>MAJOR IMPACT METRICS</b>	Stop all Ebola transmission within 6-8 weeks of an index case
<b>MAJOR OUTCOME METRICS</b>	<p>Trend in cases (probable and confirmed) and deaths, by infected area</p> <p>Number of infected areas</p> <p>Persistence of transmission over time</p>

**Performance of the Operational Response (measured by infected area)**

<b>Case Management</b>	% of suspect cases isolated with proper PPE and barrier measures within 12 hours of identification
<b>Diagnostics</b>	% of samples under shipment to a WHO recognized laboratory within 24 hours
<b>Surveillance and contact tracing:</b>	% of cases with contact tracing implemented within 24 hours; % of contacts followed-up for 21 days
<b>Social mobilization</b>	public information and risk communications campaign initiated within 48 hours of case confirmation
<b>Safe burials</b>	% of burials conducted by trained and properly equipped burial teams

**OBJECTIVE 3: To strengthen preparedness of all countries to rapidly detect and respond to an Ebola exposure, especially those sharing land borders with areas of active transmission and those with international transportation hubs**

**Performance of the Operational Response (measured by country)**

<p><b><i>In all unaffected countries sharing a land border with an Ebola infected area</i></b></p>	<p>% of weekly active surveillance reports for clusters of unexplained deaths or febrile illness in areas bordering Ebola-affected countries and in the capital city</p> <p>Presence of a protocol for managing travelers who arrive at major land crossing points with unexplained febrile illness</p> <p>Presence of an isolation unit for Ebola case investigation and management</p> <p>Verified access to diagnostic capacity in a WHO-recognized laboratory</p> <p>Verified strategy for identifying and monitoring the contacts of any suspect Ebola case</p>
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## BUDGET IMPLICATIONS

**Estimation of Costs:** The US\$430m indicative budget for the Roadmap presents a consolidated view of the estimated global resources required over the next 6 months – by national governments, WHO, some UN agencies and other partners (e.g. , non-governmental agencies, humanitarian organizations) – for the health response to stop Ebola transmission. This indicative budget does not include the costs of broader support for essential services in the worst-affected countries, nor the costs of health systems recovery and strengthening in these areas.

**Financing the Ebola Roadmap:** full financing of the Ebola Roadmap will require a combination of domestic and international government financing, funding from development banks, private sector financing, and in-kind contributions. WHO has established dedicated capacity to ensure a concerted and accelerated resource mobilization effort for the health response, and to coordinate resource mobilization for the health response with consolidated appeals through the broader UN system to address the full range of support needed for essential and ancillary services, particularly in worst-affected areas.

EBOLA RESPONSE ROADMAP – ESTIMATED RESOURCE REQUIREMENTS\*

Objective	Estimate cost (USD '000)
<b>1. To achieve full geographic coverage with complementary Ebola response activities in countries with widespread and intense transmission</b>	<b>367,005</b>
Apply full Ebola intervention package to the extent of available resources	256,820
Develop and apply complementary approaches for intense transmission areas until full package can be implemented	32,516
Institute short-term extraordinary measures to limit national spread	75,000
Implement IHR Temporary Recommendations to prevent international spread	1,650
Ensure essential health services and lay the foundation for health sector recovery and national core capacities for outbreak response	1,020
<b>2. To ensure emergency application of comprehensive Ebola response interventions in newly infected countries or countries with localized transmission</b>	<b>13,275</b>
<b>3. To strengthen global preparedness to rapidly detect and respond to an Ebola exposure, with a particular emphasis on at-risk countries</b>	<b>8,500</b>
<b>Operationalizing the Ebola response roadmap</b>	<b>42,070</b>
Human Resources for Strategy Implementation	6,000
Rapid Access to a WHO-Recognized Ebola Diagnostic Laboratory	1,500
Information Management & Data Analysis	2,200
Research & Product Development	3,000
Technical & Normative Guidance	2,000
Crisis management and coordination	
<i>National crisis management and coordination</i>	3,870
<i>World Health Organization</i>	18,500
<i>UNICEF (estimate)</i>	5,000
<b>Total</b>	<b>430,850</b>

\*This estimation of costs was derived using a high-level unit-cost model, built for the most intense transmission areas, and reflects average operational costs grounded in the current situation in countries. The costs estimates are adjustable to the evolving epidemiologic situation and scaling of response measures. A consolidated, costed budget will be refined as countries adapt their operational plans to the Ebola Roadmap, national and local realities, and operating environments.

The major cost driver is the Ebola treatment and referral/isolation centres, constituting nearly 50% of field-level response costs. The major assumptions underpinning these cost estimates will be published on the WHO website.