U.S./CDC public health response to the Ebola epidemic – role in the global response

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Overall Goals in Outbreak Response

- **Stop human-to-human transmission**
  - Case identification
    - Isolation/care
    - Limitations -> ETU/CCC needs
  - Contact tracing
  - Infection control
  - Safe burials
  - Health communication
  - Coordination: IMS

- **Improve patient care**
  - Triage
  - Experienced staff
  - Strict use of personal protective equipment
What CDC is Doing

- CDC staff deployed to West Africa to assist with surveillance, contact tracing, data management, laboratory testing, incident management, EOC development, safe isolation and health education
- CDC staff also deployed to non-affected border countries to conduct assessments of Ebola preparedness
- Numerous trainings held in West Africa and U.S. to help prepare health workers, volunteers, and others
  - Introductory training course available for licensed clinicians intending to work in Ebola treatment units in Africa
- Disaster Assistance Response Team (DART) – OFDA/USAID oversees the U.S. Ebola response in affected countries West Africa
  - supports the CDC public health assistance / response
  - Coordination and funding of many non-governmental organization efforts
  - DoD activities
international actions

Deployed nearly 1,000 public health experts to Guinea, Liberia, and Sierra Leone, as well as to other countries

Trained 690 Master Trainers, 23,000 front line healthcare staff

Conducted more than 230 facility assessments

Staffed labs including 1 in Sierra Leone that has tested more than 12,000 samples
Preparing Healthcare Workers to Work in Ebola Treatment Units (ETUs) in Africa

- CDC provided an introductory training course for licensed clinicians (nurses, physicians and other healthcare providers) intending to work in an Ebola Treatment Unit (ETU) in Africa.

- This course is held in the U.S. The goals of this course are to:
  - Epidemiology and transmission of EVD and the current Ebola epidemic.
  - Infection prevention and control principles as they pertain to working in ETUs in Africa.
  - Demonstrate skills needed to work safely and efficiently in a well-designed ETU.
  - How to evaluate personal and environmental safety within an ETU environment.
  - Clinical care and management of the patient with EVD.
  - Patient and community assessment and intervention strategies for Ebola treatment and control.

- Nearly 500 U.S.-based healthcare workers and other international staff planning to deploy to West Africa have gone through course

- Staffing of the Monrovia Medical Unit - USPHS
Ebola Training Kit

Now available! Ebola Training Toolkit

- For organizations (such as NGOs) to use to offer training to healthcare workers (HCWs) preparing to work in ETUs in Africa in response to the Ebola epidemic.
- The planning materials provide information to help organizations prepare to offer this 3-day training

Surveillance – Contact Tracing

- CDC, together with WHO and other partners, has improved quality of contact tracing and follow up
  - Intense contact tracing on current Liberia case
  - In Guinea and Sierra Leone proportion of cases from known contacts increased compared to last week.
  - Guinea had 43% of cases from known contacts (36/83) while Sierra Leone had 67% as of March 15

- In Lagos, Nigeria, a single traveler from Liberia caused a cluster of cases among healthcare workers and others in July 2014
  - Polio EOC + CDC coordinated identification of more than 800 contacts, 19,000 visits to homes of these contacts to monitor their temperatures
  - 3 generations of disease; 19 confirmed, 1 probable
  - rapid action controlled the disease
Laboratory

- Global collaboration... EU consortium labs, U.S., and others (Germany, France, Italy, Belgium, Netherlands, UK, Nigeria, Canada, South Africa, China, Russia)
- supported real-time PCR testing available in the 3 affected countries
- CDC staffed and operated a field lab in Bo, Sierra Leone
  - Increased throughput
    - Processed more than 2,000 samples in a 3-week period at height of country’s epidemic
    - Now processed more than 12,000 samples since beginning of the outbreak
  - Serves as a model field lab for producing reliable results and maintaining high quality standards
Infection Control

- International infection control aims to prevent the spread of Ebola and other dangerous infections from person to person. The four keys to infection control are:
  - Identifying and Isolating Patients Under Investigation (PUIs) for Ebola Virus Disease (EVD)
  - Protecting Patients and Healthcare Workers
  - Cleaning Up Safely
  - Managing Patients Safely and Compassionately

More information and CDC Guidance:
http://www.cdc.gov/vhf/ebola/hcp/non-us-healthcare-settings.html
Safe Burials

- U.S. partners (USAID coordination) have established and operated over 190 burial teams in Guinea, Liberia, and Sierra Leone
- Call centers were set up to help get patients to treatment centers and to arrange safe burials
- CDC communication and anthropological experts in Liberia and Sierra Leone identified burial team practices that were viewed negatively by communities
  - Burial teams integrate this feedback into their procedures, greatly reducing community resistance to safe burials
- Challenges still exist, however
  - Zero unsafe burials in Liberia last week, and one unsafe burial in Sierra Leone.
  - Increase in Guinea of 18 unsafe burials, up from prior week’s 12 unsafe burials.
Communications

- Working with country embassies, UNICEF, WHO, ministries of health, and NGOs to develop public health campaigns and messages and implement social mobilization activities
  - Multi-channel health communication and education
  - Creating and distributing communication materials
  - Meeting with local and district-level community leaders
  - Partnering with telecommunications companies to disseminate radio and TV info, PSAs, text, and interactive voice response messages
  - Assisting in training and preparing responses for national emergency call centers responding to Ebola
  - Knowledge, Attitudes, and Practices (KAP) studies in Sierra Leone and Liberia
Communications

- **What CDC has learned**
  - Input from affected people and stakeholders is essential to design effective health promotion interventions.
  - Resulting interventions can range from mass media outreach to changes in SOPs, and should not be limited to materials

- **Example: With information from focus groups, CDC worked with partners to adjust interventions to improve safe burial practices, including:**
  - Changing SOPs to allow for more transparency and cultural sensitivity
  - Preparing scripts for teams in field and operators
  - Adjusting messaging for mass media outreach and text messages
CDC’s Response in the United States

- Educating U.S. healthcare workers on isolating patients and preventing infection
- Tightened previous infection control guidance for healthcare workers caring for patients with Ebola
- Ebola Treatment Centers/Assessment Hospitals
  - More than 80% of travelers coming from West Africa now within 200 miles of an Ebola Treatment Center
  - Rapid Ebola Preparedness (REP) teams were deployed to facilities to assess readiness for care of Ebola patients
  - Currently 55 Ebola Treatment Centers identified by states
Responding to Domestic Challenges

- CDC Ebola Response Teams (CERT)
- Updated PPE guidance
  - October 20, 2014-
- Public Health and healthcare system outreach
- State support
- Healthcare system and public health system outreach and training
  - 840,000 HCW trained online
  - 6500 HCW trained in person
- 56 LRN labs approved to test for Ebola

**ISOLATE**

If assessment indicates possible Ebola virus infection, take action.

- Isolate the patient in a private room with a private bathroom or covered, bedside commode and close the door
- Wear appropriate personal protective equipment (PPE): http://go.usa.gov/szgB
- Limit the healthcare personnel who enter the room
- Keep a log of everyone who enters and leaves the patient's room
- Consider alternative diagnoses, and evaluate appropriately
- Only perform necessary tests and procedures
- Avoid aerosol-generating procedures
- Follow CDC guidelines for cleaning, disinfecting, and managing waste: http://go.usa.gov/szYA
CDC’s Entry Screening + Follow-up

- Enhanced entry screening at five U.S. airports
  - All U.S.-bound air travelers who have been in Guinea, Liberia, or Sierra Leone

- Travelers monitored by a state or local health department
  - Direct active
  - Active
  - Movement restrictions if high risk, or some risk exposures

- Travelers receive Check and Report Ebola (CARE) kits with information on Ebola, tools to help check their temperature and symptoms for 21 days, and information on who to call if they develop symptoms
Monitoring and Movement – Risk of Ebola

- Updated recommendations issued to
  - Reduce the risk of Ebola spreading to other passengers or crew
  - Ensure people infected with Ebola are able to quickly access appropriate medical care

- This interim guidance has been updated by
  - Establishing “low (but not zero) risk” category
  - Adding “no identifiable risk” category
  - Modifying recommended public health actions in the high, some, and low (but not zero) risk categories
  - Adding recommendations for specific groups and settings
Person Under Investigation (PUI)

- A person who has both consistent signs or symptoms and risk factors as follows should be considered a PUI:
  - Elevated body temperature or subjective fever or symptoms, including severe headache, fatigue, muscle pain, vomiting, diarrhea, abdominal pain, or unexplained hemorrhage; AND
  - An epidemiologic risk factor within the 21 days before the onset of symptoms.

GETTING TO ZERO
SPEED is paramount

This chart of clusters of Ebola in Liberia shows that when we can get into the community quickly, we can stop Ebola transmission and reduce the number of people infected. Liberia’s Rapid Isolation and Treatment of Ebola (RITE) teams are critical to reducing case counts. In this six month period, the duration of outbreaks was cut in half.

http://www.huffingtonpost.com/tom-frieden-md-mph/rapid-detection-and-respo_b_6705258.html
Liberia

- **Nearing Zero**
  - When recent new case was reported, contact tracing commenced immediately
  - 86 people in quarantine
  - Over 100 contacts have been traced
  - Concerted effort by MOH, NGOs, WHO, CDC, etc.
  - To get back to zero

- **Also focusing on longer term needs and expansion of Global Health Security goals:**
  - Surveillance system,
  - Training needs;
  - Transition of in-country Emergency Operations Center (EOC)

- **Reviewing plans for transitions/expansion of general lab capacity**
Sierra Leone

- Sierra Leone continues to have new cases of Ebola, particularly in the Port Loko and Western areas
- CDC’s goal is to continue to push to zero;
  - Country plan to get to Zero and beyond
  - Finalizing details of vaccine trial and hope to begin vaccinating soon
- One volunteer HCW (U.S. Citizen) was diagnosed with Ebola in Sierra Leone and was returned to U.S. 13 March 2015
  - Additional contacts also returned to U.S. and several moderate risk are currently under monitoring
  - Working closely with WHO to identify cause of exposure and improve processes to prevent future exposures
Guinea

- Reticence (resistance) continues to be a significant challenge
- CDC goal is to get to zero and beyond
- Continue to see new cases, particularly in Conakry, Forécariah and Coyah
  - Reduction in number of new cases in Boffa, Kindia and Dubreka, also areas with high resistance in the past
- Three recent infections among HCWs in hospitals
- Working with country in staff to enhance surveillance, lab testing, testing of bodies, and social mobilization activities
For the most current information, visit
http://www.cdc.gov/vhf/ebola/index.html

For more information please contact Centers for Disease Control and Prevention
1600 Clifton Road NE, Atlanta, GA 30333
Telephone, 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
E-mail: cdcinfo@cdc.gov  Web: www.cdc.gov

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Data Management

- Ebola outbreak quickly overwhelmed public health, laboratory, and data systems
- Immediate priority on active case finding, rapid response, contact tracing
  - Developed a new software tool to help find people exposed to the deadly virus faster - an Epi Info viral hemorrhagic fever (VHF) application, speeds up contact tracing
- Mid-term: Data security and integrity across the response for long term availability and use; data integration, special studies
- Long-term: Ongoing technical assistance to MOHs for surveillance, laboratory and clinical data capture, integration and use (GHS, GDD)
  - Across agency, Interagency and Multilateral partnerships and roles in GHS
  - CDC organization and preparedness for future events