

Ebola Preparedness Resources Survey: Costs, Benefits and Challenges

The recent Ebola crisis in West Africa led to an unprecedented call for preparedness by U.S. hospitals. To date, the impact on our country's hospitals is unknown. Researchers from the Society for Healthcare Epidemiology of America (SHEA) and The Joint Commission are conducting an important study that will provide estimates of the costs and benefits of Ebola Virus Disease (EVD) preparedness to hospitals. We believe this national snapshot will inform key stakeholders and better enable all of us to prepare for the challenges that lie ahead.

Your hospital was randomly selected as part of a nationally representative sample to participate in a research study that will measure EVD preparedness resource expenditures and perceptions of value. Your completing this questionnaire should take 30 minutes to 6-8 hours (range 30 minutes to 8 hours, based on pilot testing at 6 sites), depending on your organization's size and tracking systems. There are no direct benefits to your organization; however there could be broader benefits to the hospital community as a result of your participation. We expect that your participation will end with the completion of this questionnaire (unless follow-up is needed for clarification). Your participation is completely voluntary.

The questionnaires from this study will remain confidential. Your responses will remain anonymous in any published or unpublished shared documents. The risks of participation are minimal, with the unlikely possibility of a breach in confidentiality. This questionnaire has been approved by IRBs affiliated with Rhode Island Hospital and The Joint Commission. If you have questions about this study please contact Dr. Michael Smit, Research Investigator and Associate Medical Director, Department of Epidemiology & Infection Control, Rhode Island Hospital by e-mail at msmit@lifespan.org or voicemail at 401-444-8617, or Dr. Leonard Mermel, Principal Investigator at lmermel@lifespan.org.

Thank you very much for your assistance in this important national project, which should ultimately improve future preparedness planning for infectious disease outbreaks across the nation.

Sincerely,

Leonard Mermel, DO, ScM, AM (Hon), FSHEA, FIDSA, FACP
Professor of Medicine, Warren Alpert Medical School of Brown University
Medical Director, Department of Epidemiology & Infection Control, Rhode Island Hospital
Adjunct Clinical Professor, University of Rhode Island College of Pharmacy

Instructions for data collection:

The questionnaire should be completed by people within your hospital that led or assisted in leading the Ebola virus disease (EVD) preparedness activities. This may include the hospital epidemiologist, infection preventionist, infectious disease physician, quality improvement or patient safety specialist, emergency preparedness leader, or a member of your leadership or administrative team. In order to be as accurate as possible, the survey may also require input from staff within your finance, facilities, environmental services, purchasing, supply chain, and/or materials management departments.

Instructions for data collection (continued):

If your hospital is part of a system please tailor your responses to only your selected hospital. We suggest you assemble all information before inputting your final responses in the online questionnaire.

All questions pertain to the time period of August 1, 2014 through December 31, 2014.

We would appreciate it if you could complete the collection and input of this information **within 10 days of receiving the survey.**

After collecting the information on the paper form, please return your survey in one of the following ways:

- Go back to the e-mail sent to your CEO, which contains the customized link sent to your organization; enter the information into the online questionnaire, or
- Fax your completed paper survey to fax number: (630) 296-8408 or
- Scan the completed survey and return it by electronic mail to EVD_resources_study@jointcommission.org, or
- Mail the hard copy to the address listed on page 11.

Section 1: Equipment and supplies

A major goal of this research is to obtain national estimates of the amount of money hospitals spent, on average, for Ebola virus disease (EVD) preparedness activities. The first section asks about expenditures for disposable and reusable supplies, equipment and construction-based expenses that were related to EVD preparedness activities from **August 1 through December 31, 2014.**

Q1. As part of your EVD preparedness activities, did your organization conduct an inventory of existing disposable and reusable personal protective equipment (PPE) during the August 1 to December 31 time period?

- Yes
- No
- Don't Know

Q2. Did your hospital purchase supplies or equipment for EVD preparedness during the August 1 to December 31 time period?

- Yes [GO TO Q3]
- No [SKIP TO SECTION 2: PERSONNEL]

Q3. In order to better understand what items hospitals spent money on in their EVD preparedness efforts, we would like you to consider first the following list of disposable or consumable equipment and supplies. Please check a box next to each of the following disposable or consumable equipment and supplies indicating whether or not you purchased these items as part of EVD preparedness activities between August 1 and December 31, 2014. For each category that you purchased, please give an exact or approximate cost or cost range if possible.

Disposable or consumable supplies or equipment <u>purchased</u>	Yes	No	Don't know	If "yes" please indicate the exact or approximate total cost or cost range per category	Unable to determine cost
a. Coveralls (with or without integrated hoods), gowns and aprons (fluid-resistant or impermeable), disposable surgical scrubs or undergarments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
b. Gloves	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
c. Face protection (e.g., face masks, goggles, face shields, PAPR hoods or shrouds)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
d. Shoe coverings, leg coverings (fluid-resistant or impermeable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
e. Respirators (disposable, such as N95 filtering face piece respirators)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
f. Hand hygiene supplies (alcohol-based hand rub and/or soap)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
g. Environmental cleaning solutions (effective against non-enveloped viruses)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
h. Biohazard spill kits/biohazard waste bags	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
i. Equipment/supplies for specimen transport/processing within the facility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
j. Triple packing system for laboratory specimens sent outside the facility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
k. Leak proof cremation-compatible body bags and thermal sealer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
l. Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>

Q4. Now please check a box next to each of the following reusable supplies, equipment and environmental controls indicating whether or not you purchased these items as part of EVD preparedness activities between August 1 and December 31, 2014. For each category that you purchased, please give an exact or approximate total cost or cost range if possible.

Reusable supplies, lab and clinical care equipment and environmental controls <u>purchased</u>	Yes	No	Don't know	If "yes" please indicate the exact or approximate total cost or cost range per category	Unable to determine cost
a. Washable footwear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
b. Rigid waste containers or PPE carts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
c. Powered air-purifying respirators (PAPRs)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
d. "No touch" or automated disinfection modalities (e.g., UV light or vaporized hydrogen peroxide)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
e. Designated machines (ultrasound, hemodialysis, EKG and/or ventilators)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
f. Digital stethoscopes, with ear buds or audible without ear pieces	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
g. Laboratory supplies or equipment such as point-of-care analyzers or devices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
h. Laboratory testing kits and supplies, such as polymerase chain reaction (PCR)-based or microbiological analyzer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
i. Engineering controls such as biosafety cabinets, shields or "dead-air" boxes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
j. Moderate construction, such as upgrades to airborne isolation rooms, showers, eyewash stations, remodeling of space, bathroom installation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
k. Major construction, such as building or upgrading a biocontainment unit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
l. Portable shower(s)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
m. Electronics (communication equipment such as a radio, walkie/talkie, cell or phone, laptop)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
n. Software modifications to electronic medical records or health information technology systems to document travel history, exposures, etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>
o. Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	\$ _____	<input type="checkbox"/>

Q5. Are you able to estimate a total cost of all EVD preparedness-related purchases for your hospital during the August 1 to December 31, 2014 time period?

- Yes [GO TO Q6]
 No [SKIP TO SECTION 2: PERSONNEL]

Q6. Please indicate the exact cost, approximate total cost, or cost range of all EVD preparedness-related purchases for your hospital during the August 1 to December 31, 2014 time period. \$ _____

Q7. As of June 1, 2015, did your hospital receive money from the Department of Health and Human Services, state health department, or other sources specifically as reimbursement for EVD preparedness expenses incurred between August 1 and December 31, 2014?

- Yes
 Reimbursement pending
 No
 Don't know

Section 2: Personnel - This section asks about staff time associated with EVD preparedness activities. You may wish to talk directly with unit or department managers and leadership to obtain estimates.

Q8. During the August 1 to December 31, 2014 time period, staff members may have needed to work additional hours beyond their usual schedule to support EVD preparedness activities. If possible, for each staff category please estimate the total number of additional hours by type of staff person. Include both compensated and uncompensated additional hours. Include hours spent in training and in providing care and supervision, etc. Include emergency department and out-patient settings as appropriate.

Staff type	Estimated additional hours	Don't know
a. Physicians	_____	<input type="checkbox"/>
b. Physician assistants, nurse practitioners, advanced practice nurses	_____	<input type="checkbox"/>
c. Nurses	_____	<input type="checkbox"/>
d. Clinical managers, department heads or directors (e.g., infection preventionist, education staff)	_____	<input type="checkbox"/>
e. Laboratory staff	_____	<input type="checkbox"/>
f. Respiratory therapy technicians/technologists	_____	<input type="checkbox"/>
g. Environmental service workers	_____	<input type="checkbox"/>
h. Security staff	_____	<input type="checkbox"/>
i. Administrative staff (e.g., emergency preparedness leaders, communications staff, public relations/media team)	_____	<input type="checkbox"/>

Q8 continued

j. Registration staff, front desk workers, other support workers	_____	<input type="checkbox"/>
k. Other (describe below)	_____	<input type="checkbox"/>

Q9. From August 1 to December 31, 2014, approximately what percentage of your hospital's infection prevention and control staff's time (including the hospital epidemiologist) was shifted to EVD preparedness? _____%

Section 3: External requirements and integration in community preparedness activities -
This section asks about the impact of federal, state and local EVD preparedness expectations and requirements as well as community integration activities.

Q10. On December 2, 2014 the CDC announced a tiered approach to hospital EVD preparedness. Which of the following CDC designations applied to your hospital? (For designations please see Addendum.) Please check all that apply.

- Frontline healthcare facility
- Ebola assessment hospital
- CDC designated Ebola treatment center
- Don't Know

Q11. Did the December 2, 2014 CDC announcement change your EVD preparedness activities?

- Yes [PLEASE ANSWER Q11a]
- No [SKIP TO Q12]
- Don't Know [SKIP TO Q12]



Q11a. To what extent did your EVD preparedness activities change?

- Activities decreased substantially
- Activities decreased somewhat
- Activities increased somewhat
- Activities increased substantially

Q11b. Please describe the rationale for your answer in the box below

Q12. Did your state require a level of readiness beyond that outlined by the CDC?

- Yes →
 No
 Don't Know

Q12a. Please describe:

Q13. From August 1 to December 31, 2014, approximately how many patients did your hospital classify as persons under investigation (PUI) for EVD, as defined by CDC? (For CDC definition of PUI see <http://www.cdc.gov/vhf/ebola/healthcare-us/evaluating-patients/case-definition.html>.)

- None
 One or two
 Three to five
 Six to ten
 More than ten

Q14. During this time period, did your organization work in collaboration with a healthcare coalition, a local or state health department or public health entity, an emergency management agency, or a similar organization to:

Activity	YES	NO	Don't Know
a. Confirm contact information for key personnel in the community organization(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Conduct regular calls or meetings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Conduct exercises or drills?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Arrange for specialized laboratory testing with community reference labs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Plan for and/or execute transportation of a PUI between healthcare facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Other (please describe)			

Section 4: Perceived challenges and benefits of EVD preparedness activities - The final section asks about deferred activities, other challenges, and general and specific benefits your hospital might have experienced as the result of EVD preparedness.

Q15. During the August 1 to December 31, 2014 time period, which of the following challenges did your hospital experience related to EVD preparedness activities? (Please check all that apply)

a. Lack of adequate staffing, manpower	<input type="checkbox"/>
b. Lack of time to plan and execute training	<input type="checkbox"/>
c. Difficulty obtaining supplies, such as PPE, from vendors due to shortages	<input type="checkbox"/>
d. Lack of leadership support or engagement	<input type="checkbox"/>
e. Managing healthcare worker anxiety and fear	<input type="checkbox"/>
f. Problems regarding internal team building and communication	<input type="checkbox"/>
g. Problems regarding coordination with external groups	<input type="checkbox"/>
h. Conflicting and changing federal, state, or local guidance	<input type="checkbox"/>
i. Lack of regional care centers	<input type="checkbox"/>
j. Other (please specify)	<input type="checkbox"/>

Q16. From the list above, please put in the letter of what you consider to be your hospital's greatest challenge related to EVD preparedness activities. _____

Q16a. Please add any additional comments here regarding your answer (optional).

Q17. Did you or your hospital defer or cancel other important personal or work-related activities during the August 1 to December 31, 2014 time period in order to accommodate EVD preparedness tasks?

- Yes [PLEASE ANSWER Q17a]
- No [SKIP TO Q18]
- Don't Know [SKIP TO Q18]



Q17a. Please list the important activities that were deferred or cancelled in the box below

Q18. Which of the following benefits has your hospital experienced related to EVD preparedness activities? (Please check all that apply)

a. Improved internal team building and communication	<input type="checkbox"/>
b. Improved hand hygiene	<input type="checkbox"/>
c. Improved compliance with isolation procedures	<input type="checkbox"/>
d. Improved PPE knowledge and use	<input type="checkbox"/>
e. Increased awareness and understanding of infection prevention and control policies and practices	<input type="checkbox"/>
f. Enhanced recognition of infection preventionist and/or hospital epidemiologist role	<input type="checkbox"/>
g. Improved infection prevention and control practices in general	<input type="checkbox"/>
h. Better screening and triage procedures	<input type="checkbox"/>
i. Improved bioterrorism and disaster preparedness response	<input type="checkbox"/>
j. Better prepared for future infectious disease events/epidemics such as MERS CoV, enterovirus D68	<input type="checkbox"/>
k. Improved coordination with external groups	<input type="checkbox"/>
l. Other (please specify)	<input type="checkbox"/>

Q19. From the list above, please put in the letter of what you consider to be your hospital's greatest benefit related to EVD preparedness activities. _____

Q19a. Please add any additional comments here regarding your answer (optional)

Q20. Please check a box on the scale below that represents your response to the following question:

Comparing the costs, challenges and benefits, what is your overall assessment of the value of the activities associated with EVD preparedness to your hospital?

- No value at all
- Minor value
- Moderate value
- Major value
- Extreme value

Q20a. Please add any additional comments here regarding your answer (optional).

Q21. If there is anything else about the costs, challenges or benefits of EVD preparedness that you would like to mention, please do so in the box below.

The final two questions refer to the person(s) who gathered the information collected in this questionnaire.

Q22. What is your primary role in the hospital (check one)?

- Hospital epidemiologist
- Infection preventionist
- Infectious disease physician
- Quality improvement or patient safety-related position
- Emergency preparedness leader
- Leadership or administration
- Other (specify) →

Q23. Which of the following persons helped you to complete this questionnaire? (Check all that apply)

- Hospital epidemiologist(s) or infectious disease physician(s)
- Infection preventionist(s)
- Infectious disease physician(s)
- Quality improvement, risk management, or patient safety-related personnel
- Emergency preparedness personnel
- Personnel from leadership or administration
- Departmental or unit-level managers
- Finance department personnel
- Environmental safety officer, facilities staff, and/or environmental services staff
- Human resources staff
- Purchasing, supply chain, or materials management department(s) personnel
- Other (specify) →

Thank you very much for your participation!

Please return your survey in one of the following ways:

- Go back to the e-mail sent to your CEO, which contains the customized link sent to your organization; enter the information into the online questionnaire, or
- Fax your completed paper survey to **fax number (630) 296-8408**, or
- Scan the completed survey and return it by electronic mail to EVD_resources_study@jointcommission.org, or
- Mail your survey back to:
The Joint Commission
Department of Health Services Research
One Renaissance Blvd
Oakbrook Terrace, IL. 60181

If you fax, email, or mail your response, it is **essential** that you list your hospital's name, city and state, to ensure your response is properly attributed to your hospital. Thank you.

Hospital Name	City	State

For questions, please contact EVD_resources_study@jointcommission.org or call Ken Rasinski at 630-792-5947.

ADDENDUM (for answering question 10)

Description of Hospital Capabilities in CDC's Tiered Approach to Preparing for Patients with Possible or Confirmed Ebola

Type of Facility	Includes	Capabilities
Frontline Healthcare Facility	<ul style="list-style-type: none"> • Acute care hospitals • Other emergency care settings, such as <ul style="list-style-type: none"> ○ Urgent care clinics ○ Critical access hospitals 	<ul style="list-style-type: none"> • Quickly identifies and isolates patients with possible Ebola • Notifies facility infection control and state and local public health authorities • Staff are trained on specimen transport, waste management, Standard Precautions, and are proficient in donning/doffing personal protective equipment (PPE) • Considers transferring patient to an Ebola assessment center for testing and care until an Ebola diagnosis is either confirmed or ruled out
Ebola Assessment Hospital	Acute care hospitals	<ul style="list-style-type: none"> • Receives, isolates and cares for patients with possible Ebola until an Ebola diagnosis is either confirmed or ruled out, for up to 96 hours • Transports patient with confirmed Ebola to an Ebola treatment center • Staff are trained and proficient on donning/doffing personal protective equipment (PPE), specimen transport, waste management, and Standard Precautions
Ebola Treatment Centers	Acute care hospitals designated as Ebola treatment centers*	<ul style="list-style-type: none"> • Receives and isolates a patient with confirmed Ebola • Cares for and manages patient throughout the disease process • Has sustainable staffing plan to manage several weeks of care