Chubb Healthcare

Ebola Outbreak Preparedness: Planning is Vital to Managing a Pandemic

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Growing concerns throughout the U.S. over the Ebola virus disease (EVD) have healthcare facilities considering the impact that a potential nationwide pandemic of the virus would have on their organizations and the communities they serve. Ensuring the safety of patients, visitors, and staff requires healthcare organizations to thoroughly review their current state of emergency preparedness, with an eye toward achieving a state of readiness and quick response to a potential emerging pandemic.

While the Ebola virus is not easily transmitted among humans and can only be spread through contact with the body fluids of an infected and symptomatic person, it is nonetheless a deadly virus, carrying an associated mortality rate of 50% or higher among those infected. Moreover, there is scant evidence of any natural human immunity to the virus, and with only experimental drugs currently available to combat it – and no approved vaccine – a handful of confirmed U.S. cases has understandably triggered widespread alarm in the healthcare industry and led the CDC to strengthen its guidance for healthcare workers on October 20, 2014. Tightened Guidance for U.S. Healthcare Workers on Personal Protective Equipment for Ebola: http://www.cdc.gov/media/releases/2014/fs1020-ebola-personal-protectiveequipment.html. (See "Essential Facts about the Ebola Virus," p.3).

This Chubb Advisory discusses Ebola virus prevention, control, and preparedness through the lens of a pandemic. Needs and opportunities are identified to help guide healthcare providers through the planning stages of detection, containment, control, and management in the aftermath. No one can predict with accuracy the extent of potential damage an EVD pandemic could cause, but even a mild outbreak will test the best laid plans of any healthcare facility. In the event of a near-future pandemic, continued healthcare operations and safeguarding of patients will depend on the planning and preparation measures that hospitals and other healthcare settings undertake today.

Planning Process

An Ebola pandemic action committee is the most effective way to identify, respond to and recover from a broad range of potential business and clinical interruptions. Comprised of members from various disciplines, this action committee should include representation from:

- Senior administration
- Legal counsel
- Risk management
- Emergency department
- Occupational health
- Human resources
- Nursing administration
- Medical staff
- Hospital disaster services
- Infection control
- Engineering & institutional safety
- Laboratory & therapeutic services

The committee should initially designate a Response Coordinator who is well versed in federal, state and local government planning for pandemic conditions, as well as being knowledgeable of private sector efforts. The Coordinator is charged with soliciting input on planning measures from the communicable disease division of the local health department (LHD), medical examiner's office, police and fire departments, and neighboring hospitals. The partnerships forged with local and professional organizations will be critical to planning and training for a pandemic, and are essential to a coordinated and timely response.

It is also important to supplement action plans with the latest information from national and global organizations, including the Centers for Disease Control and Prevention (CDC), the National Institutes of Health (NIH), the American Hospital Association (AHA), the American College of Emergency Physicians (ACEP), and the World Health Organization (WHO), among others. To avoid costly duplication of efforts when planning a comprehensive and coordinated response, organizations may capitalize upon the following useful documents, among other available resources:

After existing capabilities and top priorities have been identified by the action committee, the next step is to compile information from within the organization on disaster readiness. The following documents and information form the footprint of an organization's emergency preparedness and response plan:

Checklist for Healthcare Coalitions for Ebola Preparedness, CDC, available at http://www.cdc.gov/vhf/ebola/pdf/coalition-checklist- ebola-preparedness.pdf.

Checklist for Emergency Medical Services Ebola Preparedness, CDC, available at http://www.cdc.gov/vhf/ebola/pdf/ems-checklist- ebola-preparedness.pdf.

Ebola Preparedness Resources, AHA, available at http://www.aha. org/advocacy-issues/emergreadiness/ebola.shtml.

While emergency response plans aren't new to healthcare settings, organizations may find that an existing plan requires updating in light of a growing concern over pandemic EVD.

Before making any revisions, the action committee should gather answers to the following questions or any other

relevant questions. It is also important to review the CDC's self- assessment checklist discussed below to ensure that critical business and clinical operations are adequately considered during the drafting process.

After existing capabilities and top priorities have been identified by the action committee, the next step is to compile information from within the organization on disaster readiness. The following documents and information form the footprint of an organization's emergency preparedness and response plan:

- disaster management plan
- continuity of care and business operations plan
- emergency response procedures
- public health reporting protocols
- urgent communications plan
- employee health procedures
- critical information and access procedures
- media handling protocols
- list of suppliers and vendors
- list of local hospitals, urgent care centers, and residential facilities where infected persons may potentially be quarantined and treated

To further assist in identifying potential vulnerabilities in the planning process, the CDC has created a self-assessment checklist to gauge hospital readiness and response to an EVD outbreak. The document is available at http://www.cdc.gov/vhf/ ebola/pdf/hospital-checklist-ebola-preparedness.pdf.

Planning Elements

Following a review of existing emergency response provisions, the committee is prepared to enhance the organization's overall preparedness plan. The plan should encompass these critical features of pandemic control, each of which is described in detail below.

- Disease surveillance
- Education and training
- Facility access and security
- Medication and antiviral use
- Supply chain and resources
- Hospital communication
- Triage and containment
- Occupational health
- Surge capacity
- Mortuary needs
- Waste management

Also please note that the CDC is currently in the process of updating these guidelines. Therefore, it is imperative that organizations stay abreast of any changes that may be forthcoming.

What is Ebola virus?

Ebola is caused by a ribonucleic acid (RNA) virus that is transmitted to people from wild animals - including fruit bats, monkeys, gorillas, and chimpanzees - and then spread through human-to-human transmission. Named after the Ebola River in Africa, outbreaks first appeared in 1976 in what is now known as the Democratic Republic of Congo.

There are five identified types of Ebola virus, four of which cause disease in humans. The current outbreak is caused by Zaire Ebola virus. The disease, also known as Ebola hemorrhagic fever, damages the immune system and organs as it spreads through the body, and ultimately causes blood-clotting mechanisms to fail. This in turn leads to severe, uncontrollable bleeding. The virus is associated with very high mortality rates.

Key Questions

What provisions do we currently have to respond effectively to the threat of a pandemic?

How should we communicate with patients, families, employees and vendors the steps that we are taking to deal with a potential EVD outbreak?

What should we do if employees are exposed to or develop symptoms of EVD?

Can we keep our organization operating if large numbers of employees are infected and unable to work?

How can we manage pandemic related disruptions in our supply chains?

What is the potential financial impact to our organization?

How does it spread?

Ebola virus is not a casual contact-acquired infection. There is no known Ebola transmission through coughing or sneezing, as is the case with seasonal influenza strains. However, if a patient tests positive for Ebola virus, or is suspected to carry the virus, they will be immediately isolated from the public to prevent its spread. This precaution is required because Ebola is passed from a symptomatic person to another person via bodily fluids, such as vomit, tears, saliva, semen, urine, and feces. The virus can also live on surfaces that are soiled with blood or other body fluids, such as bedding, clothing, and needles. Sterilizing patient equipment and surfaces with hospital-grade quaternary ammonium or phenolic products will kill the Ebola virus.

Essential facts about Ebola virus

Who is at risk for contracting Ebola?

The general public is not at risk for Ebola infection unless they are in direct contact with bodily fluids of someone who is experiencing viral symptoms from Ebola, such as fever, diarrhea, vomiting, and coughing.

How can you avoid contracting it?

The best way to avoid infection is to refrain from traveling to areas where the virus is found. Healthcare professionals who are treating confirmed or suspected patients can prevent infection by adhering to the universal precautions of infection control, including wearing gloves, gowns, masks, goggles, and other barrier shields whenever they come into contact with high-risk persons.

What are the symptoms of Ebola virus in humans? Early Ebola symptoms are similar to other viral infections. The incubation period after transmission can range from 2 to 21 days (with the average period lasting 8 to 10 days), after which the following symptoms may manifest:

- High fever, in excess of 101°F
- Headache
- Joint and muscle aches
- Sore throat
- Weakness
- Stomach pain
- Lack of appetite
- Unexplained bruising

As the disease progresses, it triggers bleeding internally, as well as from the eyes and nose. Some infected persons will vomit or cough up blood, exhibit bloody diarrhea, and a profuse rash.

Will a routine flu shot protect against the Ebola virus?

There is currently no vaccine to prevent Ebola. Two potential vaccines are undergoing human safety testing.

How is it diagnosed?

It can be hard for clinicians to discern Ebola virus on physical exam alone. In order to make a conclusive diagnosis, doctors may have to test viral DNA or check for the presence of antibod- ies against Ebola. For an overview of the clinical presentation of EVD, including common laboratory findings upon analysis, see Ebola Virus Disease Information for Clinicians in U.S. Healthcare Settings, from the Centers for Disease Control and Prevention, available at http://www.cdc.gov/vhf/ebola/hcp/clinician-informa- tion-us-healthcare settings.html.

How is the virus treated in humans?

The U.S. Food and Drug Administration has not yet approved any drug treatments for Ebola, although isolated incidents of infected patients receiving experimental drugs, such as ZMapp and brincidofovir, have shown promise. Supportive care is the predominate form of treatment, encompassing the administra- tion of intravenous fluids, blood transfusions and oxygen, as well as maintaining serum electrolytes and a steady blood pressure.

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Disease Surveillance

Early signs of Ebola virus include typical flu-like symptoms, such as high fever, headache, joint and muscle aches, sore throat, weakness, stomach pain, and lack of appetite. At later stages, complications from internal bleeding can progress rapidly to respiratory distress and hemorrhagic bleeding from the nose and mouth. It is imperative that organizations enhance routine surveillance of these primary symptoms in the emergency department (ED), triage units and other sites of patient intake and provide training to staff to assess patients for such symptoms. Clinical procedures for the initial screening and assessment of patients with suspected EVD symptoms should be developed, posted, and circulated to frontline healthcare workers, including ED personnel and staff in urgent care, walk-in clinics, and physician offices. Until clinical testing confirms otherwise, symptomatic travelers from affected West African countries should be treated as potential cases. The following resources are offered to further assist hospitals and healthcare providers in the prompt detection of potential Ebola patients:

Algorithm for the Evaluation of the Returned Traveler: http://www.cdc.gov/vhf/ebola/pdf/ebola-algorithm.pdf

Case Definition for Ebola Virus Disease: http://www.cdc.gov/vhf/ebola/hcp/case definition.html.

Checklist for Patients Being Evaluated for Ebola Virus Disease in the United States: http://www.cdc.gov/vhf/ebola/pdf/checklist- patients-evaluated-us-evd.pdf

What You Need to Know about Ebola http://www.cdc.gov/vhf/ebola/pdf/what-need-to-know-ebola.pdf

Under the direction of an infection control practitioner, it is necessary to establish a method to track ED visits for suspected or confirmed patients with EVD, as well as hospital admissions and discharges. Ensure that triage staff, nursing leadership, and clinical department leaders are familiar with the protocol for reporting suspected and confirmed cases of EVD internally, as well as to local, state, and national public health officials. Coordinated reporting of information is essential to accurate monitoring of the progress and impact of a pandemic. Pandemic related data to be reported include: admissions, patient characteristics (such as age, underlying illness, and complications), discharges, deaths, and infected staff (if any).

In the event an outbreak officially occurs (usually defined as 10% of patients in a unit or wing that experience EVD characterized by high fever or any of the associated symptoms), laboratory services may require expansion in order to sufficiently detect, characterize, and monitor an outbreak. Guidelines concerning laboratory diagnostics and specimen handling should be distributed to all laboratory personnel, and posted conspicuously in a hospital laboratory setting. The CDC's interim guidance on specimen handling and testing for patients with suspected EVD is available at http://www.cdc.gov/vhf/ebola/hcp/interim-guidance-specimen- collection-submission-patients-suspected-infection-ebola.html.

Hospital Communication

Communication before, during, and after a pandemic requires multi-agency collaboration at the local and state level. A plan to disseminate vital information is critical to keeping staff, patients, visitors, and the public informed about efforts to prepare for and manage a pandemic. Planning ahead of a pandemic for hospital- specific communications that may be required is highly recommended, e.g., daily reports of suspected and confirmed Ebola cases, staffing needs, bed capacity, durable and consumable resource demands, and medication supplies. Action committee members should ask whether the facility is prepared to:

- deliver public health advisories in a rapid and organized fashion
- prepare press releases regarding the organization's current situation
- manage internal and external communication systems in a crisis mode
- create alternative communication methods as needed

The following links provide CDC resources to assist healthcare organizations in developing Ebola-related risk communication strategies:

CDC Digital Press Kit: 2014 Ebola Outbreak, at http://www.cdc. gov/media/dpk/2014/dpk-ebola-outbreak.html

CDC Questions and Answers on Ebola, at: http://www.cdc.gov/vhf/ebola/outbreaks/2014-west-africa/qa.html

Early in the planning process, a trained spokesperson should be designated as a contact for media outlets. It is also beneficial to utilize a clinical spokesperson, such as the Medical Director or hospital epidemiologist, to augment any communications. To ensure critical messages reach the intended recipients, all modes of communication can be utilized, e.g., telephone hotlines, websites, emergency call centers, and posted signs and informational handouts. Preparing responses to the following basic inquiries may help organizations disseminate information to staff, patients and visitors early in a pandemic:

An informed and responsive staff is essential to minimizing the effects of a pandemic on an organization, its patients, and visitors. Consider utilizing existing infection control meetings, medical Grand Rounds, huddles and other educational venues to train staff on EVD and the potential for pandemic outbreak.

- How is the Ebola virus transmitted, what are its symptoms and what precautions is the organization taking?
- How will management, staff, patients and families report a suspected case of Ebola virus?
- Who should staff, vendors and visitors contact if they have been exposed to the virus outside of the organization?
- When will visitor access to the organization be restricted and why?

Knowing who to call and when is critically important in the wake of a pandemic. Ensure that appropriate personnel are enrolled in information systems and receive CDC Health Alert Network notifications. Identify the additional points of contact among local media, public health officials and community leaders. Call centers can be an effective way to handle public inquires regarding the status of outbreak within an organization. Another efficient means of communication is the daily status report, which typically includes the number of confirmed cases, quarantine measures being taken, restrictions to the organization, unit closings to new admissions, and infection control guidelines for visitors.

Education and Training

An informed and responsive staff is essential to minimizing the effects of a pandemic on an organization, its patients, and visitors. Consider utilizing existing infection control meetings, medical Grand Rounds, huddles and other educational venues to train staff on EVD and the potential for pandemic outbreak. Organizations may wish to pursue possible educational opportunities with public and private agencies that offer programs, such as EVD planning, preparation and training and outbreak exercises.

An organization's infection control practitioner will need to provide mandatory in-services for all shifts to review measures for the prevention and control of the Ebola virus. Suggested topics on the management of infectious patients include the following: selection and proper use (including proper removal and disposal of) of personal protective equipment (PPE), hand hygiene, cleaning and disinfection of environmental surfaces, handling of laboratory specimens, safe work practices, and post-mortem care. In addition to general infection control topics, educational programs should encompass these pandemic-specific concerns as well:

- Cohorting of infected patients
- Staffing contingency plans
- Visitor restrictions
- Health department reporting
- Cross training personnel for essential patient-care areas
- Containment measures
- Psychological support and crisis management

In order to limit the spread of an outbreak, ensure that educational initiatives are targeted to patient family members and other visitors to the facility. Distribute educational materials that are language and reading-level specific, and which reinforce these institution-wide initiatives:

- Stop all visitors at the door to check for Ebola-like symptoms.
- Place signs on entrance doors indicating any visitor with symptoms should proceed to a designated area for evaluation.
- Have items available throughout the organization for appropriate cough/respiratory etiquette, including multiple boxes of facial tissue, wastebaskets with covers, and hand gel sanitizers.
- Adhere to standard hand hygiene precautions.

Triage and Containment

Early identification of Ebola cases is critical to mounting an effective response. One measure proven to have a temporizing effect on pandemic transmission is to quarantine patients to a single treatment area (as ambulatory/ED patients) or unit or floor (as inpatients). Containment efforts can be maximized through these simple interventions during triage and assessment:

- establish a separate entry and waiting room for patients with suspicious symptoms
- erect a temporary structure near the ED to treat infectious patients, and reserve the ED for regular patients (if necessitated by high patient demand)
- screen all patients according to a standardized protocol for the presence of EVD-associated symptoms, (for a convenient card of EVD screening criteria from ACEP, see http://www.acep.org
- uploadedFiles/ACEP/practiceResources/issuesByCategory/publichealth/Ebola-Screening-Criteria-2014.pdf)
- move suspected ED patients from triage into isolation units until diagnostic tests are negative for Ebola virus
- admit all infected patients to a designated EVD floor for inpatient care

Electronic and other documentation formats utilized during the triage process must allow for shared access across established nursing and physician workflow processes. Critical data, including a history of travel to affected regions and/or prior contact with infected persons, must be prominently noted in the patient care record when members of the treatment team access the electronic or paper record.

Organizational policy should further prohibit staff members who work in close contact with quarantined patients from rotating to other units until the local health department has determined the outbreak is under control. Remember to include contracted agency workers, housekeeping, volunteers and administrative staff in any policy statement that restricts work assignment.

Once the known cases of EVD have been identified and contained within an organization, meticulous infection control measures will help to limit further spread of the virus. Staff members who are providing care to patients with flu-like symptoms must follow strict isolation procedures, including, at a minimum, wearing of gloves, eye protection, facial masks/shields, and gowns. In addition, the CDC recently revised its guidelines for healthcare staff involved in the treatment of ebola patients and now recommends:

- While working in PPE, no skin be exposed.
- Staff receive repeated training and demonstrate competency regarding ebola related infection control practices, especially the proper donning and doffing of PPE.
- All steps of putting on and removing PPE be supervised by a trained observer to ensure compliance with established protocols.
- For full CDC recommendations, see: Tightened Guidance for U.S. Healthcare Workers on Personal Protective Equipment for Ebola: http://www.cdc.gov/media/releases/2014/fs1020-ebola-personal-protective-equipment.html.

Now is a good time to re-examine the procedures to decontaminate a healthcare organization's heating, ventilation and air-conditioning systems.

For detailed infection control precautions, consult the CDC's Key Components of Standard, Contact, and Droplet Precautions Recommended for Prevention of EVD Transmission in U.S. Hospitals, posted at http://www.cdc.gov/vhf/ebola/hcp/infectionprevention-and-control-recommendations.html, and including:

As a matter of policy, ill staff members should not be permitted to work. Conducting a simple screen for signs and symptoms of illness in staff before they report to work is a proactive measure that can help stave off the spread of infection. If a staff member becomes symptomatic while on the job, he/she should be removed from the clinical setting and assessed.

- patient placement, which requires a single, closed-door room with private bath and appropriate signage of isolation status
- PPE, which requires, at a minimum, gloves, gown, eye protection, and facemask when entering patient rooms
- patient care equipment, which requires dedicated medical equipment and thorough disinfection following patient use according to manufacturers' instructions and hospital policies
- standard precautions, which pay particular attention to hand hygiene and secretions contamination
- sharps precautions, which include limiting the use of the
- number of needles and sharps, and disposing of them in puncture-proof, sealed containers
- contact precautions, which require double glove and impermeable gown use when in contact with copious bodily secretions, as well as shoe and leg coverings
- airborne precautions, which mandates an airborne isolation room and use of a fit-tested respirator when conducting aerosol generating procedures
- hazardous waste management, which includes special
- precautions for removing Ebola-tainted linens, discarded supplies, and waste materials in leak-proof containers
- environmental cleaning, which requires disinfecting potentially contaminated materials with hospital-grade quaternary ammonium or phenolic products

Facility Access and Safety

In the event of a pandemic, an established protocol by which to limit access to the facility must be readily available. The protocol should identify essential personnel and clearly delineate the measures for prohibiting non-essential visitors. Additional security guards may be required to help monitor hospital access points and to defuse any potential violence that may erupt.

It might also be necessary to temporarily close a facility to new admissions or transfers at the height of a pandemic. Be sure that a written protocol for hospital diversion has set criteria by which to make the decision, and also imparts considerations regarding staffing ratios, isolation capacity, and communication requirements.

Prior to an outbreak, designate alternative healthcare settings within and outside of the immediate geographic area where patients in need of hospitalization can be re-directed. The transfer of infectious patients is to be coordinated in consultation with the local health department, considering transportation methods, staff requirements, and resources. The transfer of patient health information should also be carefully delineated in a diversion protocol.

Occupational Health

A pandemic of Ebola virus will tax health care facilities and their work forces. Operating with fewer critical staff members, either due to personal illness or outsourcing to alternative locations, may be an eventual likelihood. Developing a strategy for housing and feeding healthcare personnel who may need to be on-site for a prolonged period of time is recommended.

Employee health procedures should be carefully reviewed to ensure that time-off policies and procedures consider staffing needs during a pandemic. Human resource information - especially employee contact information and job skill databases - should be readily

available to facilitate reassignment of staff to parallel job functions. High-risk personnel (such as pregnant and immunocompromised persons) will require immediate reassignment.

As a matter of policy, ill staff members should not be permitted to work. Conducting a simple screen for signs and symptoms of illness in staff before they report to work is a proactive measure that can help stave off the spread of infection. If a staff member becomes symptomatic while on the job, he/she should be removed from the clinical setting and assessed.

All healthcare personnel will require training on exposure precautions and how to effectively use PPE, as well as proper fit-testing for respirators in the event they are required. For additional tools designed to protect healthcare workers from infectious agents, see http://www.cdc.gov/HAI/prevent/ppe.html.

Vaccine and Antiviral Use

There is currently no available vaccine for the Ebola virus. Although the NIH, CDC and other federal agencies are working with private industry to move experimental therapies and vaccines into the earliest clinical trials, the standard treatment for EVD remains supportive in nature. Should a vaccine become available in the near future, it is not likely to be accessed in large quantities on the early side of a pandemic. Therefore, in the event Ebola vaccination becomes a reality, distribution of vaccines must be in strict accordance with written protocol.

Working together, senior administration and clinical leadership should determine how vaccinations will be prioritized in an organization, considering compliance with these important elements of a crisis vaccination program:

- designate priority groups
- train staff on rapid vaccination techniques
- alert staff to dangers of vial misuse and cross contamination of multi-use vials
- monitor and document adverse events
- track vaccine supply and administration
- communicate vaccination coverage and availability to public health authorities

Similarly, a protocol should be established for the appropriate use of antiviral medications, since there will likely be insufficient quantities of these medications as well. Keep in mind that the utility of medications in combating the Ebola virus has not been fully demonstrated, but experimental use of the antiviral drug brincidofovir and the antibody serum ZMapp is underway. As facilities consider the pros and cons of administering these experimental medications and potential vaccines, the following advisories may be consulted:

- U.S. Department of Health and Human Services, Consideration for Antiviral Drug Stockpiling by Employers in Preparation for an Influenza Pandemic at http://www.flu.gov/planning-preparedness/business/antiviral_employer.pdf.
- The Centers for Disease Control and Prevention, Stockpiling Antivirals for Pandemic Influenza: The Key Ethical Principles at http://www.cdc.gov/od/science/integrity/phethics/ESdocuments.htm.

Surge Capacity

A pandemic will further test the health care system by forcing facilities - especially hospitals - to operate near capacity. Finding or creating surge capacity, determining who pays for it, and who controls it, are all major tasks in the pandemic planning process. Start by determining how an organization will meet staffing needs as the number of EVD infected patients increases. (For instance, calculate the number and categories of personnel needed to care for an Ebola virus patient each day, and then multiply that factor by the patient load.)

Should early predictions indicate excessive staff demands, personnel should be cross trained from over-staffed units and/or recruited from retired staff. Organizations may also wish to explore with local healthcare planning groups how staff could be shared among affected facilities. Be prepared to quickly credential these professionals should the need arise, and adhere to the respective state's guidelines for an emergency staffing crisis. For a table top exercise designed to prepare healthcare providers for an Ebola outbreak and the concomitant tax it may present to both human and system resources, see http://www.aha.org/advocacy- issues/emergreadiness/ebola.shtml

Concern over inpatient bed capacity has also prompted a growing number of hospitals to negotiate Mutual Aid Agreements with aging service facilities for the care of their non-infected patients, should a pandemic arise. As an added measure of preparation, policies for expediting the discharge of stable patients, as well as when elective surgical procedures will be cancelled, should be reviewed and kept up-to-date.

Supply Chain and Resources

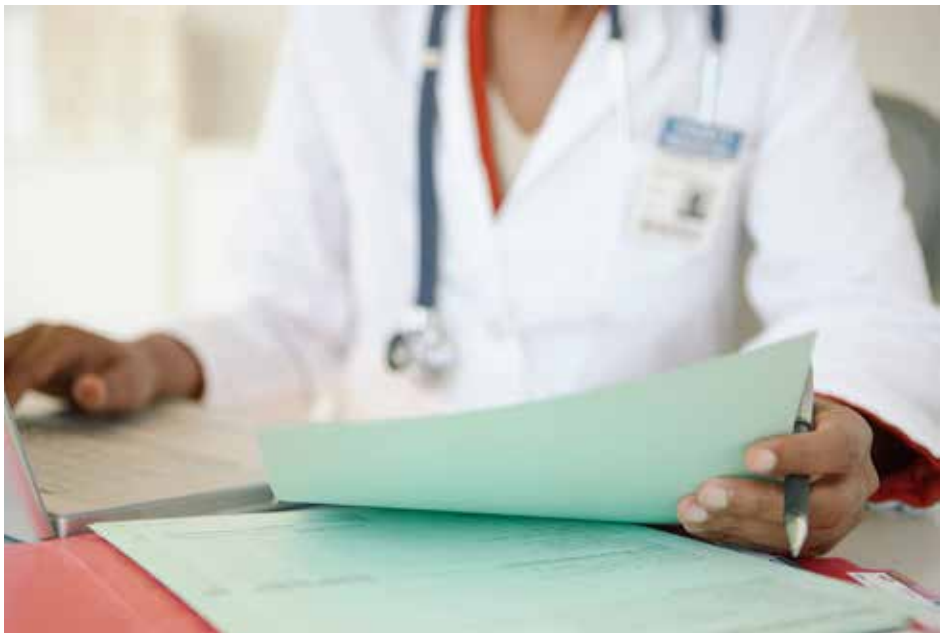
A pandemic will likely escalate quickly and could last anywhere from 8 weeks to many months. Existing inventory and projected needs of both PPE and clinical supplies will need to be determined, as demand during a pandemic will likely exceed typical use patterns. Creating community-based coalitions with other healthcare settings can help promote interfacility sharing of supply stores, if necessary. Circumstances may, however, require stockpiling of these consumable and durable resources:

- temporary room barriers
- hazmat suits
- hand hygiene supplies
- disposable surgical and procedure masks
- face shields and goggles
- N95 respirators
- impermeable gowns
- gloves
- shoe covers, boots, and/or booties
- facial tissues
- central line kits
- morgue packs
- respiratory care equipment, including ventilators
- IV Pumps
- beds and stretchers

Organizations are further encouraged to examine what additional risks EVD presents to continued service from contracted suppliers and vendors. In particular, critical dependencies - such as hazardous waste management services - should be highlighted and alternative service channels identified in the event of disruption. Moreover, in the specific case of hazardous waste management, it may be necessary to contact ahead of time to ensure the vendor will remove Ebola-tainted materials. Vendors may also be asked to provide assurances that supplies and products will remain available and free of contamination, such as through staff training in special handling and packaging of used supplies, equipment, and tainted waste products.

Mortuary Needs

Mass casualties may be the unfortunate reality of an Ebola virus pandemic. As discerned from recent catastrophic events, a uniform fatality plan is critical among healthcare facilities, public health officials, and medical examiners. Organizations can prepare for the worst case scenario by assessing their facility's current capacity for refrigeration of deceased persons and identifying temporary morgue sites should demand exceed capacity. For guidelines on the safe handling of deceased Ebola patients, see http://www.cdc.gov/vhf/ebola/hcp/guidance-safe-handling-human-remains-ebola-patients-us-hospitals-mortuaries.html.



In addition to the recommendations outlined in this article, the CDC and industry organizations have issued guidelines to further assist healthcare facilities in preparing for a potential outbreak of EVD. The following resources cover a range of useful topics, such as Ebola virus screening, infection control measures, coordination of pubic health resources and safe management of patients, among others.

Ebola Update, Centers for Disease Control and Prevention: http://www.cdc.gov/vhf/ebola/index.html.

Guidance on Air Medical Transport for Patients with Ebola Virus Disease, Centers for Disease Control and Prevention: http://www.cdc.gov/vhf/ebola/hcp/ guidance-air-medical-transport-patients.html.

Healthcare Resources for Suspected Ebola Cases, American College of Emergency Physicians: http://www.acep.org/ebola/.

Interim Guidance for Emergency Medical Services Systems and 9-1-1 PSAPs, Centers for Disease Control and Prevention: http://www.cdc.gov/vhf/ebola/ hcp/interim-guidance-emergency-medical-servicessystems- 911-public-safety-answering-pointsmanagement- patients-known-suspected-united-states. html.

Interim Guidance for Environmental Infection Control in Hospitals for Ebola Virus, Centers for Disease Control and Prevention: http://www.cdc.gov/ vhf/ebola/hcp/environmental-infection-control-inhospitals. html.

Safe Management of Patients with Ebola Virus Disease in US Hospitals, Centers for Disease Control and Prevention: http://www.cdc.gov/vhf/ebola/ hcp/patient-management-us-hospitals.html.

Sequence for Removing Personal Protective Equipment, Centers for Disease Control and Prevention: http://www.cdc.gov/HAI/pdfs/ppe/ppeposter1322.pdf.

Tightened Guidance for U.S. Healthcare Workers on Personal Protective Equipment for Ebola: http://www.cdc.gov/media/releases/2014/fs1020-ebolapersonal-protective-equipment.html

Conclusion

One of the chief responsibilities of a risk manager or senior administrator is to provide a high level of protection for patients, visitors, and staff during a time of crisis. Meeting this responsibility during a pandemic situation involves gathering reliable information about the potential for outbreak, thoroughly educating staff about prevention, and consistently enforcing measures that will contain the spread of infection.

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