Ebola Virus Disease Risk Management

A Planning and Crisis Management Guide for U.S. Travel Association Members

U.S.-based security and healthcare expert recommendations to assist organizations in preparing for and dealing with health crises.

U.S. TRAVEL ASSOCIATION

THE CHERTOFF GROUP

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EXECUTIVE SUMMARY

In the midst of the largest outbreak of Ebola Virus Disease (EVD) in modern history, the U.S. Travel Association has partnered with The Chertoff Group to provide U.S. Travel members with actionable advice and guidance regarding Ebola Virus Disease and its potential impact on the travel industry.

This Guide for Planning and Crisis Management (the "Guide") is designed to assist travel professionals in basic preparedness and response planning for EVD, and to serve as a framework for customized Ebola crisis plans. It will require venue-specific adaptation based on the roles and responsibilities of different travel industry entities, but provides general guidance and recommendations on the following dimensions of EVD planning:

- Risk Analysis. By recognizing and understanding the specific threats, vulnerabilities and consequences with regard to EVD, organizations can most effectively align their EVD risk mitigation, preparation and response strategies.
- Prevention & Mitigation. Based on a detailed understanding of the specific dimensions of EVD risk organizations face, they can begin to use internal controls and proactive risk communications to prevent EVD exposure, or to limit the degree of disruption caused by a suspected case.
- Preparation. Unfortunately the nature of a global economy, coupled with a long incubation period for EVD, means that even the best strategies for prevention and mitigation may not be enough. By engaging in prospective, capabilities-based planning, U.S. Travel member organizations can develop pre-event policies and procedures to guide an effective response.
- Response. In cases of suspected EVD exposure, it is critical to engage local emergency responders and public health officials as soon as possible and follow the detailed Emergency Operations Plans developed as part of the overall EVD preparedness process.
- Recovery. Aside from personal health and safety, organizations' primary objectives after a potential EVD exposure are: 1) return to steady-state operations; and 2) maintain effective risk and crisis communications with employees, customers, other external stakeholders and the media.

Given the dynamic nature of EVD, this Guide is not intended to take the place of deliberate planning and pre-event preparation by U.S. Travel member organizations. Rather, these materials should provide a conceptual framework for crisis planning and emergency response by outlining best practices and recommended steps to preparing organizations for EVD. In addition, the Appendices contain a number of additional resources and checklists to guide organizations' risk assessment, planning, preparedness, response and recovery activities in step-wise fashion.

Overview of Key Points

Using the framework outlined above to shape internal planning, U.S. Travel member organizations should consider the following Key Points from this Guide:

KEY POINTS: EVD Risk Assessment

U.S. Travel Members should…

- Identify the specific risk profile of their events or core business operations in the context of EVD
- Align internal planning and preparedness with relative risk

KEY POINTS: Prevention & Mitigation

U.S. Travel Members should…

- Identify venue or business-specific risk controls
- Develop proactive risk communication tools

KEY POINTS: Preparation

U.S. Travel Members should…

- Appoint a crisis management team
- Tailor an EVD plan to their specific use cases
- Review business continuity considerations

KEY POINTS: Response

U.S. Travel Members should…

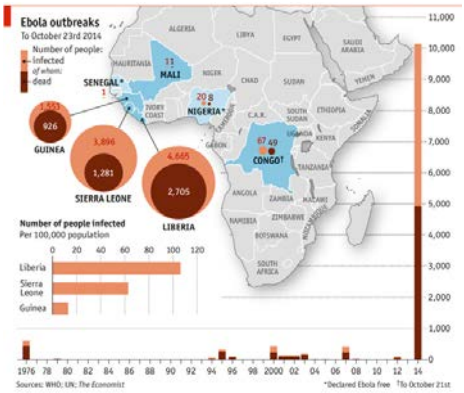
- Remain calm; call 911 / activate emergency response system
- Begin executing the EVD Emergency Operations Plan
- Isolate suspected patient(s) and wait for first responders

KEY POINTS: Recovery

U.S. Travel Members should…

- Devolve crisis team and resume steady-state operations
- Conduct After-Action Review and apply lessons learned
- Continue proactive risk communications to manage messages

INTRODUCTION



The 2014 West African Ebola crisis represents the largest global outbreak of a high mortality, non-vaccine preventable contagious illness in recent history. While the outbreak has been largely confined to Liberia, Guinea and Sierra Leone, its effects have been felt throughout Africa and the entire world. Thousands of West Africans have succumbed to Ebola as the outbreak has extended into densely populated areas and crossed international borders. Treatment of Ebola-infected travelers and aid workers from West Africa has resulted in direct transmission of the virus as far away as Dallas, Texas and Madrid, Spain.

The multi-trillion dollar global travel industry is well known to be particularly vulnerable to the effects of global health pandemics. Government imposed travel restrictions, travel disruptions and generalized consumer fear can multiply the global impact of pandemics. Due to the high death rate (estimated to range between 60-80%), a regional but prolonged Ebola outbreak has the potential to dwarf the business impact of the recent H1N1 Avian Influenza (2009) and SARS (2002-2003) pandemics.

Background and Purpose

The U.S. Travel Association is the national, non-profit organization representing all components of the travel industry, advancing the collective interests of nearly 1,300-member organizations. U.S. Travel has partnered with The Chertoff Group, a premiere global advisory firm focused exclusively on security and risk management, to provide U.S. Travel members with actionable advice and guidance regarding Ebola Virus Disease and its potential impact on the travel industry.

This document is designed to assist U.S. Travel members in basic preparedness and response planning for EVD, and to serve as a framework for customized Ebola Crisis Plans. It will require venue-specific adaptation based on the roles and responsibilities of different travel industry entities.

While this document highlights the core components of developing an Ebola-centric plan, the general methodology relates well to most dynamic global health threats and can easily be adopted for other pandemic scenarios. Assessing risk, implementing control measures, responding to and recovering from an event in a coordinated fashion are the pillars for all health-related crisis plans. Likewise, the guiding principles of crisis management (*leadership, communication, risk awareness*, and *unified incident command*) are highlighted throughout this document and transcend the current Ebola crisis.

Assumptions

This document is based on a number of assumptions, including:

- Based on current modeling, EVD will remain a largely regional outbreak in the affected countries listed above;

- EVD will represent a significant humanitarian crisis, but is not likely to result in sustained human-to-human transmission outside of West Africa;
- Due to the long incubation period (up to 21 days) before an infected individual develops symptoms, it is very likely there will be isolated cases of infected travelers leaving West Africa;
- Limited transmission to close personal contacts or healthcare workers should be expected; *and*
- A large-scale outbreak with sustained transmission in the United States or Western Europe remains highly unlikely. Should that occur, either because of an inadequate global health response or a virus mutation, it would represent a major shift in the planning and response paradigm.

Approach

An effective business preparedness and response program requires a specific focus on each of four elements:

- Prevention and Mitigation
- Preparedness
- Response
- Recovery

This Guide is divided into sections that address each of these elements in the specific context of EVD.

Limitations

As with any crisis management topic, there are several limitations to this Guide and planning for EVD in general:

- The assumptions outlined above are based on a combination of historical observations for EVD outbreaks and the best available models at present; should the fact pattern change – either because of an inadequate global health response or a virus mutation – that change would require a major shift in planning and response paradigms;
- The Guide reflects best practices as of 29 October 2014; however, federal, state and local governments are issuing almost-daily revisions to their action plans and public communications regarding EVD, and such revisions may result in changes to best practices outlined herein;
- The international community has limited capacity to respond to large-scale outbreaks, and delays are inherent due to a multitude of geo-political issues;
- Messaging out of different local, state and federal agencies can often provide contradictory guidance; *and*
- The 24/7 media cycle can induce widespread fear among the general public.

The dynamic nature of the fact pattern will require corporate planners to maintain vigilant EVD situational awareness both locally and internationally, and to modify policies and procedures accordingly.

RISK ASSESSMENT

"Risk" is a function of *Threat, Vulnerability* and *Consequence*. Each dimension must be reviewed regularly to maintain situational awareness and employ effective controls in the context of a specific threat. Thus, assessing corporate-, event- or venue-risks for EVD exposure requires a detailed understanding of the EVD-specific threat, vulnerabilities, and consequences. Expressed mathematically:

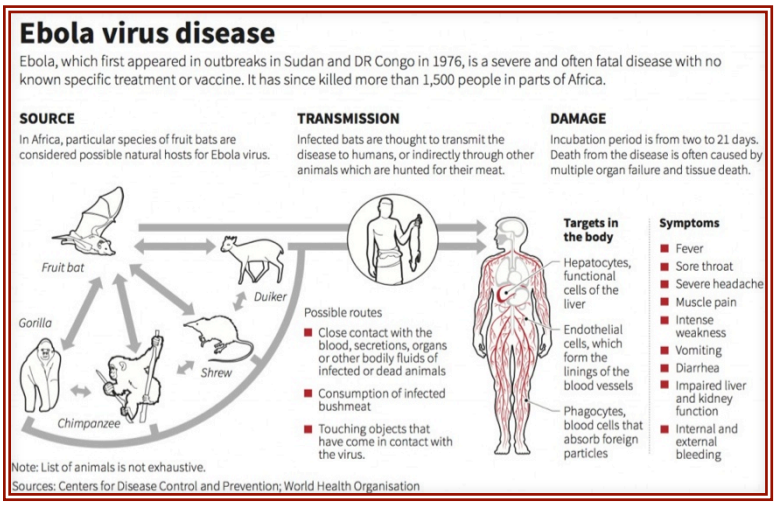
Risk = Threat x Vulnerability x Consequence

While calculating absolute numerical values for each element in the Risk Equation is often not necessary for most corporate planners, the equation provides an illustrative framework for determining *low, medium* and *high* overall risks for venues and activities within the travel industry sector. Planning should be aligned with the **overall risk** for an event or venue, and not merely for **any one dimension** of the Risk Equation.

Ebola – Understanding the Threat

First reported by the Centers for Disease Control and Prevention in 1976, outbreaks of Ebola Virus Disease (EVD) have remained contained to the African continent for nearly 40 years.

- The current disease outbreak represents the first and largest introduction of EVD into densely populated African communities, involving multiple nations simultaneously, and resulting in transmission off the African continent.
- The current outbreak is caused by the *Zaire* strain, the most virulent of the six Ebola strains.
- The outbreak occurred in a region with exceptionally limited public health infrastructure, complex socioeconomic issues and a massively under-resourced healthcare system.
- Compounding the difficulty in controlling this outbreak, there is currently no tested, commercially available vaccine to prevent Ebola or specific medications proven to combat the infection.
- Initial attempts to control the outbreak were unsuccessful due to limited organic infrastructure in the affected countries, a delayed global response and certain inherent characteristics of the illness (i.e. prolonged incubation periods).
- Incubation period is defined as the time from when an individual becomes infected until they show obvious signs of becoming ill. Typical patients with Ebola develop symptoms within 8-10 days, but it can take up to 21 days for others to become ill. In the era of worldwide air travel, this incubation gap represents a major challenge to outbreak containment and dramatically increases the global threat of virus.



Like many other viral illnesses (including influenza), EVD initially presents with generalized and non-specific symptoms such as fever, headache, chills, and muscle pain.

- As the disease progresses, patients predictably develop vomiting, diarrhea, and bleeding. Symptoms can lead to profound dehydration and ultimately result in multi-organ system failure and death.
- Initial epidemiological data suggests 60-80% of individuals that contract the infection succumb to the illness.
- Factors associated with increase survival rates include early infection recognition and access to high-quality healthcare.

Compared to the general public at large or casual acquaintances, close personal contacts of infected individuals and healthcare workers treating Ebola victims are at greatest risk for contracting the disease.

- Absolute risk to close personal contacts is related to the duration and intensity of the exposure to an infected individual.
- Transmission occurs when someone comes into contact with the bodily fluids of an infected individual (i.e. blood, saliva, vomit, stool).
- Historical data suggest that infected persons generally do not "shed" significant quantities of virus prior to becoming ill; this finding explains why many family members with extensive exposure to infected individuals have not become ill.
- Healthcare workers generally come into contact with individuals during their most contagious periods. Providing high-quality health care in personal protective equipment is quite difficult and is considered a very high-risk activity.
- Healthcare workers who have developed an EVD infection were likely exposed during self-contamination while removing their personal protective equipment.

While transmission of EVD is difficult to control in the setting of a resource-limited country with inadequate healthcare facilities and sanitation services, the Ebola virus is not considered highly transmissible when compared to other infectious agents (i.e. influenza and measles). It is only spread via direct contact with bodily fluids; brief physical contact or touching common surfaces does not generally expose an individual to significant risk of EVD.

Ebola – Vulnerability

The vulnerability aspect of the EVD risk equation is a tightly-correlated function of proximity to an infected individual and is directly related to the duration and intensity of their exposure to an individual with an active EVD infection. During influenza pandemics, this vulnerability can often be partially mitigated with aggressive vaccination campaigns. However, there is not currently a commercially available vaccine for Ebola. (Several vaccination campaigns are currently in early phase testing but it will likely be 1-2 years before a commercially available one is on the market.)

Other strategies to mitigate EVD vulnerability include temperature screening and self-reporting programs for individuals with a heightened risk profile. Temperature-screening programs frequently utilized at international transit hubs are most effective when they are a component of a larger, comprehensive program that includes onsite medical assessments and isolation/quarantine capabilities. Common limitations and challenges associated with strategies to mitigate EVD vulnerability include:

- Complexity, expense (thermal screening cameras and training) and limited scientific data on efficacy often eliminate temperature screenings as a justifiable mitigation strategy at low-risk venues;
- Infected individuals can be within the incubation period and not have a fever, creating an obvious vulnerability in physical screening programs;
- Self-reporting programs in which individuals at heightened risk for potential Ebola exposure identify themselves to organizers are of limited value in most generalized travel industry scenarios as participants may not self-report due to fears of stigmatization or quarantine; *and*
- Personal, financial or political motivations can result in dishonest completion of screening questionnaires. However, unlike temperature screening programs, implementing a targeted pre-event self-reporting screening program is often inexpensive and does hold staff and participants to a heightened level of accountability.

Ebola – Consequences

The health, psychological and economic consequences of Ebola can be severe. This has driven intense media focus and heightened global public concern. On a macro scale, the travel industry as a whole is particularly susceptible to a series of widespread and sweeping secondary effects that develop during global infectious outbreaks.

- Travel restrictions, disruptions and widespread cancellations frequently become ubiquitous.
- "Affected" regions become very broadly defined and governments or multi-national corporations make many sweeping decisions with limited input from scientific advisors.
- Deciphering perceived fear vs. actual risk becomes more difficult as public hysteria increases.
- Reputational crises affecting governments or corporations can have potentially long-lasting effects when there is the perception of handling the crisis poorly. Elections can be strongly influenced based on the handling of large-scale public heath threats. Civil unrest is of heightened concern in countries with fragile governance.

Ebola – Risk Assessment Summary

Analyzing risk provides corporate planners the capability to assign a level of risk for an enterprise, event or venue during a global outbreak. Ebola, while extremely concerning from a consequence perspective, requires direct contact with infected bodily fluid for transmission. This significantly limits the threat and vulnerability outside the affected outbreak region (West Africa). Two hypothetical scenarios illustrate this approach:

- In the midst of the Ebola outbreak in West Africa, with isolated U.S. cases of Ebola secondary to infected travelers from the affected region, a telecom corporation is holding a sales meeting in a major U.S. city. Invitees are coming from throughout the Americas. A pre-event survey sent out to participants' reveals no attendees have traveled to the affected region. The event planner correctly identifies this as a *low-risk event* and concludes no specific control measures need to be implemented.
- In the midst of the Ebola outbreak in West Africa, with isolated U.S. cases of Ebola secondary to infected travelers from the affected region, an annual international congress of emergency physicians is scheduled. Past registration data highlights that West African and international relief physicians regularly attend the event. Healthcare workers returning from the affected region have been asked to present talks at plenary sessions. The event planner correctly identifies this as a *higher-risk event* and develops a formal Ebola Crisis Plan.

KEY POINTS: EVD Risk Assessment

U.S. Travel Members should…

- Identify the specific risk profile of their events or core business operations in the context of EVD
- Align internal planning and preparedness with relative risk

PREVENTION & MITIGATION

The first steps in developing a venue- or organization-specific EVD response plan are to take all possible measures to prevent an exposure if at all possible, and to limit the effects of an exposure with pre-incident mitigation strategies. In light of the general risk profile of EVD in non West African locations, the two most effective ways to prevent or mitigate EVD are: 1) the implementation of controls; and 2) risk communications. Each is discussed below.

Implementing Controls

Controls are actions, policies or procedures introduced in an attempt to lower a risk profile. In non-healthcare settings, these controls generally focus on physical prevention strategies (i.e. infection control). Workplace policies should focus on implementing best practices that reduce the frequency and duration of exposure to a predicted hazard. Successful implementation of controls enhances the likelihood that corporations satisfy their industry specific duty of care. Failure to implement exposes the corporation to legal, financial and reputational risk.

The fundamental controls for all infectious outbreaks are based on enhanced hand-hygiene, cough and sneezing etiquette, social distancing, sick-contact isolation and environmental cleaning. Appropriate messaging, supplies and signage are often the best preventative strategies to mitigate infectious diseases in a workplace or venue. These controls, while generally not capital intensive, require vigilance and persistence to ensure adherence and maximum compliance. They include:

- Ensuring an adequate supply of hand-sanitizer at high-traffic locations (points of ingress and egress) and at all locations where food or beverages are available;
- Providing disinfectants and disposable towels to clean work surfaces;
- Encouraging employees to obtain seasonal flu vaccination and other healthy lifestyle strategies;
- Providing timely and topical information on specific illnesses of concern in combination with providing information on reliable places to seek medical attention or advice;
- Requesting that anyone experiencing an infectious illness refrain from attending work, venue or event;
- Increasing facility cleaning schedule with appropriate disinfectant agents for threat (i.e. bleach based solutions for Ebola); *and*
- Obtaining adequate supply of disposable masks if facing threat of airborne-illness.

Based on a careful risk assessment and the specific threat, additional venue specific physical controls may also need to be implemented. These controls work to limit the contact and interaction between individuals and prevent the spread of particulates and contaminates. Such examples include:

- Increasing HVAC flow to circulate more fresh air in facilities;
- Setting up partitions in areas where there are high levels of employee interactions; *and*
- Installing clear sneeze guards over food and at counters to reduce contamination.

Risk Communications

In the presence of a disease that has already caused global concern, it is important to remember that the general public will have some level of emotion regarding the disease or its potential impact on them. As this is the case, it is important that communications to employees and stakeholders address these potential concerns and act to express solidarity amongst the organization. Communications statements need to be concise, informative, and coordinated in an effort to maximize impact and reduce ambiguity. The goals of all risk communications are to increase awareness to a threat and encourage modification of behavior. It is vital that employees and their family members understand what steps are being taken to prepare for an outbreak and that they plan their own contingencies early on. Successful communications will reduce fear and anxiety if and when a crisis occurs.

Before a crisis, and as informed by a detailed pre-event risk assessment, it is important to communicate the following messages clearly:

- The *possibility* of an exposure exists (however remote);
- The *probability* of risk of an actual exposure; *and*
- The plans, policies and procedures in place to manage an exposure should one occur.

Finally, it may be prudent to produce EVD communication documents to identify high-risk groups or individuals. These communications can be in the form of a pre-event survey or questionnaire and should address the following:

- Recent travel history;
- Risk factors for possible infection; *and*
- Actions steps for those who are deemed to be at enhanced risk.

In all cases, communications should be informed by real-time risk assessments and should never be used to discriminate against any individual or group. In similar fashion, pre-event communications should not request any information that includes personal health information protected by law.

KEY POINTS: Prevention & Mitigation

U.S. Travel Members should…

- Identify venue or business-specific risk controls
- Develop proactive risk communication tools

PREPARATION

In general, a business preparedness program for EVD is designed for a specific entity and reflects the unique business objectives, values and operating environment of that business. Effective preparedness programs also follow the generally accepted *Cycle of Preparedness* that takes an iterative approach to:

- Planning;
- Organizing and equipping responders;
- Training on specific policies, procedures and Emergency Operations Plans (EOPs);
- Table-top and live exercises to assess organizations' abilities to implement the EOPs; *and*
- Improvements to policies, procedures and EOPs based on lessons observed during exercises.

A senior leader, empowered by management and appropriately resourced, typically runs an effective business preparedness programs. The two basic elements of an EVD business preparedness program are a ***Crisis Management Team*** and an ***EVD-specific Emergency Operations Plan***.

Crisis Management Team

The Crisis Management Team is a multi-disciplinary group organized at the enterprise level and representative of the core functional areas of the business. The Crisis Management Team will vary in composition based on the nature of the emergency/crisis and the organizational structure and capabilities of the business. Typical functional areas represented on a Crisis Management Team include:

- Business Operations
- Corporate Communications
- Corporate Travel
- Employee Assistance Program
- Facilities Management
- Finance
- Governmental Affairs
- Human Resources
- Information Technology
- Legal
- Medical/Occupational Health
- Procurement
- Risk Management/Insurance
- Security
- Senior Leadership

The Crisis Management Team will generally have the following characteristics:

- Managed by a senior leader with the authority and resources to make enterprise-level decisions;
- A defined organizational structure with established roles and responsibilities;
- Clear lines of communication and authority; *and*
- A defined role and scope within the organization.

The Crisis Management Team will generally have the following **responsibilities**:

- Developing the enterprise level Emergency Operations Plan;
- Developing requirements and a standardized approach for operating unit sub-plans;
- Reviewing all sub-plans to insure consistency and appropriateness;
- Providing for adequate types/numbers of supplies and equipment (as appropriate);
- Coordinating training, exercises and evaluations to identify gaps in planning, personnel, material resources or subject matter expertise;
- Integrating lessons learned into EVD plans, policies and procedures;
- Maintaining situational awareness through trusted sources; *and*
- Coordination with public health authorities and other governmental agencies.

EVD Emergency Operations Plan

The purpose of an EVD Emergency Operations Plan (EOP) is to describe how a business, its leadership and its staff will respond to and recover from all hazards. The EOP describes recommended actions for emergent incident response. Normal and/or routine functions not affected by an emergency are outside of the scope of this plan. Day to day functions not directly related to an emergency response may be suspended for the duration of an emergency as determined by the Crisis Management Team. In general the EOP provides guidance and an overarching framework for emergency procedures and plans. An effective Emergency Operations Plan shall:

1. Serve as the initial policy and procedural guide for response to both internal and external emergent situations that may affect staff, customers and the community;
2. Promote the safety and security of all staff, customers and visitors during an emergency situation;
3. Identify responsibilities of staff and departments in the event of an emergent situation. This plan provides an overarching framework for operating unit specific sub plans;
4. Serve as a guide for coordination, organization and collaboration during response to emergent events that affect a business, customers, suppliers and its community partners; *and*
5. Serve as an educational tool for front-line staff and managers to refer to when conducting their own emergency preparedness activities.

The EOP for Ebola Virus Disease will vary based on the specific needs and exposure of the business entity creating the plan. An effective EVD plan should incorporate the following key elements:

- Identify essential business services and functions that will need to continue in the context of an EVD emergency event:
    - Quantify and qualify the impact of the loss or impairment of that essential service or function; *and*
    - Define how long the business can continue to operate in the absence of that essential service or function.
- Identify Mission Essential Personnel performing these essential services & functions:

  - Consider cross-training of personnel to perform essential services and functions; *and*
  - Consider strategies such as work-from-home and staff relocation.
- Identify essential external dependencies:
  - Those providing essential services, personnel, infrastructure or supplies; *and*
  - Local, state and federal agencies that could modify, impair or halt essential business functions and services.
- Coordinate Corporate Communications:
  - Identify a single point of contact for both internal and external communications;
  - Develop a process to provide timely and reliable internal and external communications;
  - Develop a process to review internal and external communications to insure that they are consistent with messages coming from external authoritative sources: CDC, Public Health Department, State and Federal Officials; *and*
  - Develop official platforms to communicate with staff, customers and suppliers: website, webinars, hotlines, etc.
- Maintain Situational Awareness:
  - Identify trusted sources of authoritative information and guidance with respect to EVD and develop a process to monitor those sources on an ongoing basis; *and*
  - Identify common sources of public information with respect to EVD and develop a process to evaluate and manage messages coming from non-authoritative sources.
- Obtain Subject Matter Expertise:
  - Identify internal and/or external EVD subject matter experts; *and*
  - Develop a process to evaluate external subject matter experts and incorporate them into Crisis Management Team.
- Coordinate External Liaison Activities:
  - Define a specific, bidirectional, communication pathway to local, state and federal public health authorities; *and*
  - Identify reliable points of contact at local and state emergency management agencies, regional healthcare systems and emergency medical services (EMS).
- Provide for Evacuation and Repatriation:
  - Identify internal or external resources that could assist in the non-medical repatriation of staff from international locations; *and*
  - Review existing business travel accident insurance policies to determine their applicability in an EVD event.
- Review Corporate Travel Policies:
  - Review existing corporate travel policies and consider limiting business travel to regions where EVD is circulating in the population; *and*
  - Review existing policies and tools to track staff traveling for business.
- Address Key Procurement Actions:
  - Identify reliable sources to acquire Personal Protective Equipment (PPE) such as gloves and surgical masks; *and*

- Identify reliable sources to acquire personal and environmental hygiene and cleaning supplies such as hand sanitizer, soap and surface cleaners.

Coordination with Public Health Officials

Close coordination with local, state and federal public health officials is an essential element of an EVD business preparedness program. The public health control power is reserved to the states under the 10th amendment to the Constitution; consequently, public health laws will vary from location to location and can provide officials with a broad range of authorities in an infectious disease emergency event. The Crisis Management Team should develop a detailed understanding of the following:

- **Isolation** is the process of separating an individual with known or suspected EVD from others to prevent them from spreading the disease to others and break the cycle of transmission.
  - For example, individuals with proven EVD who have been repatriated to the US and hospitalized in specialized bio containment centers have been *isolated* during their course of treatment until they are proven to be free of EVD.

- **Quarantine** is the act of restricting the movement and association of people who have been in close contact with an individual infected with EVD. Once again, the purpose of quarantine is to break the cycle of disease transmission. For example, family members who were in close contact with an EVD patient have been *quarantined* for a period of 21 days to monitor them for the development of disease.
  - The authority to place a person in quarantine usually resides with the local public health director, and is done on a case-by-case basis. However, in the context of EVD some states have moved to declare a Public Health Emergency (PHE) and expand quarantine powers. Due to the state-to-state variability with respect to quarantine law, understanding the specifics of state and local public health law is an essential element of a business preparedness program for EVD.

- **Venue-specific Closures**. The Crisis Management Team should communicate directly with state and local public health officials to gain a detailed understanding of the following:
  - Scope of key legal authorities with respect to local and state public health; *and*
  - Specific events or conditions that will trigger the closure of schools, businesses or public events.

Access to Medical Expertise and Resources

All business pandemic preparedness programs require substantial input and functions from medical personnel, advisors and institutions. This is certainly true for an EVD pandemic with a potential to directly impact staff health and safety, and to degrade business' ability to perform essential functions and services. In addition, the complexity and intensity of providing care for even a very limited number of EVD patients will severely tax local health care systems, potentially limiting service and access.

A business preparedness program for EVD is not static and will need to adapt as the event evolves and

new information becomes available. Having access to qualified medical advisors who can contextualize EVD issues and critically evaluate information for the Crisis Management Team is thus an essential element of an EVD business preparedness program. Ideally, medical advisors should have a background or training in one or more of the following areas:

- Acute Care Medicine
- Travel Medicine
- Disaster Preparedness and Response
- Occupational Health
- Infectious Diseases
- Public Health

A qualified medical advisor's most valuable skill will be the evaluation and qualification of rapidly flowing and potentially changing information. However, s/he can also provide input in the following areas:

- Development of EVD-related policies and procedures:
  - Corporate travel (restricted locations list);
  - Sick leave and absence;
  - Quarantine following travel or potential exposure;
  - Fitness/clearance to return to work; *and*
  - Employee Assistance Programs (EAP).
- Assisting with liaison activities with external entities, including:
  - Local and state public health officials;
  - Local and state emergency management agencies; *and*
  - Local and regional healthcare institutions.
- Provision of subject matter expertise with respect to:
  - Personal Protective Equipment (PPE) selection;
  - Environment decontamination; *and*
  - Medical countermeasures such as vaccines and anti-virals (in development for EVD).

Business Continuity Considerations

A key step in the development of a robust business preparedness program for EVD is to identify the number of staff and necessary skills required to perform and maintain the essential services and functions of the business. This information will be vital should it become necessary to reallocate staff resources within the business unit or across the corporation. Identification of both *Mission Essential Functions* and *Mission Essential Personnel* will inform and enhance the response component of the EVD business preparedness program. Such mission essential considerations should:

- Identify the number of staff, based on qualification, required to maintain the essential services, systems and functions;
- Consider the impact of EVD related "surge activity" on essential services, systems and functions; *and*
- Identify any special requirements necessary to perform essential services, systems and functions, such as licensing, certification or special training.

Mission Essential Functions

In identifying Mission Essential Functions, consider the following:

- What are the critical systems or functions that rely on regular intervention by a key individual to keep them going?
- How long would the system or function last in the absence of attention?
- Are there opportunities to cross-train back-up personnel to maintain these systems or functions?

Mission Essential Personnel

In identifying Mission Essential Personnel, consider the following:

- Who are the people required to keep the essential parts of the business running?
- Define the core skills required to keep business running?
- Are there sufficient back-ups for people and skills in view of absence, restriction of travel or quarantine?

EOPs should also consider the role of cross training for key functions and roles, succession planning and if/how to use external contractors or sources that might provide temporary employees.

Training & Exercises

All employees should be oriented to the EVD Emergency Operations Plan, functional business unit sub-plans and the structure and composition of the Crisis Management Team. This education should include:

- Staff members' specific roles and responsibilities during an EVD emergency incident;
- Information and skills required to perform those skills during an EVD emergency incident;
- Back-up communication systems used during an EVD emergency Incident; *and*
- Mechanisms for obtaining supplies and equipment during an EVD emergency incident.

A comprehensive business preparedness program for EVD should also include exercises to assess the Emergency Operations Plan's appropriateness, adequacy and the effectiveness of logistics, human resources and training. Exercises should be designed to reflect likely EVD emergency incident scenarios as informed by the Risk Assessment. Such exercises are designed to stress the limits of the EOP in order to identify weaknesses and permit an accurate assessment of emergency preparedness and response capabilities in the context of maintaining essential business services and functions during an EVD emergency. Appendix 1 contains three notional scenarios for U.S. Travel members to consider when evaluating their plans for EVD.

KEY POINTS: Preparation

U.S. Travel Members should…

- Appoint a crisis management team
- Tailor an EVD plan to their specific use cases
- Review business continuity considerations

RESPONSE

Overview

During pandemic biohazard threats like EVD, the Response Phase begins when a suspected or confirmed case of EVD is identified within an enterprise, venue or event. Alternatively, employee contact with a suspected or confirmed EVD-infected individual (or bodily fluid) can also be a trigger to activate the Response Phase of the Emergency Operations Plan. In either case, effective pre-incident risk analysis, preparedness and planning should lead to a measured, appropriate and coordinated incident response versus one marked by disorganization, chaos and exaggerated fear.

The Response Phase has internal and external components depending on the nature of the trigger. The internal actions should be scripted, rehearsed and understood throughout an organization. There is realistically little that most organizations can do to coordinate the external response, but understanding how and when to communicate with emergency response agencies, public health departments and key stakeholders can be the difference between coordination and chaos.

At present, it is highly unlikely that patients with EVD will be encountered in a business environment in North America. However, EVD should be suspected under the following conditions:

- Febrile persons who, within three weeks before onset of fever, have:
  - Travelled to specific high-risk countries in West Africa, OR
  - Had direct exposure to a potential or confirmed Ebola case through clinical care or laboratory work.

Internal Response

Upon Potential EVD Case Identification and Notification

Given the media coverage to-date, having a suspected case of EVD at a U.S. Travel member-sponsored event or in a member-owned venue will generate a variety of immediate concerns, ranging from very practical worries about employee and participant safety to public relations and business continuity. It is important that those responsible for implementing the EVD Emergency Operations Plan remain calm and begin executing the Plan in a step-wise fashion.

- If there appears to be an immediate life threat, activate the local emergency response system (via 911 or other number if in an international venue). Clearly communicate any Ebola concerns to the dispatcher and emergency responders.
- Identify and appoint a dedicated, on-scene Incident Commander (can rotate based on shift/locations) who should immediately establish control of the response.

- If there is not an immediate life threat present, refer to the EVD planning materials and contact the identified local public health officials or on-scene health advisors for guidance.
    - If you are unsure of how to contact the local health department, activate the emergency response system and request assistance.
- Isolate any suspected patient(s) and utilize enhanced blood-borne pathogen procedures:
    - Potential or actual Ebola virus contamination in the workplace should be managed in the context of OSHA's Blood Bourne Pathogens standard or the OSHA approved State Plan.
    - OSHA has recently issued a Fact Sheet specifically addressing the cleaning and decontamination of Ebola on surfaces that provides guidance to workers and employers in non-healthcare/ non-laboratory settings. This comprehensive resource document with specific guidance and external references is included here as Appendix 7.
- In coordination with venue security (if applicable), establish control of the area and log all personnel who enter/leave the scene. Limit access to critical personnel only.
- Personnel should avoid touching the affected individual, but if contact is necessary for life-saving care, ensure responders are wearing a minimum of two pairs of gloves and a mask. Cover any exposed skin.
- A second responder should be dedicated to observing responder #1 and ensuring he/she does not touch any surface or exposed skin prior to safely removing gloves and washing hands.
- If there are onsite health care resources, have the senior-most medical personnel assist in patient assessment and public health notification.
- Cordon off affected area with particular attention to biohazard concerns (i.e. bodily fluids).
- Clear corridors of bystanders.
- Do not attempt to clean the area until guidance is obtained from health department if they feel the case represents a possible EVD exposure.

External Response

Upon Potential EVD Case Identification and Notification

In parallel to the internal response, organizations will need to coordinate with external organizations such as local and state health departments, emergency responders and the media. In particular, U.S. Travel members should be prepared for the following:

- Public health officials may want to speak with affected individual(s) or the incident commander to determine an initial risk assessment. Be prepared to facilitate this request.
- Pubic health officials, in conjunction with emergency management leaders, might decide to isolate affected individual(s) while they obtain additional data.
- As emergency responders arrive on scene, have Incident Commander (or designee) provide all available information.

- Expect that emergency responders will don extensive personal protective equipment and enter the scene in an orderly and methodical fashion. Do not be alarmed or expect them to "rush" into the scene.
- Finalize and prepare public risk communications and messaging, and appoint a designated spokesperson. Be prepared to work closely with local public health and emergency management officials to ensure consistency in messaging.

General Facility Cleaning and Disinfecting during Pandemic

EVD is not a particularly hardy virus, and like influenza, an enhanced facilities cleaning program will be an important intervention to limit potential disease transmission. The extent to which enhanced cleaning activities are undertaken should be based on a risk assessment. Common activities include:

- Ensuring food preparation areas such as self-service pantries, serving areas and restrooms receive thorough cleanings with an EPA-approved disinfectant registered as effective on non-enveloped viruses (e.g.: norovirus and rotavirus);
- Increasing frequency of routine cleaning of high risk, high traffic areas (e.g., banisters, door handles, elevator buttons, etc.); *and*
- Ensuring adequate supplies of hand sanitizer at general points of ingress and egress.

The native environment of the Ebola virus is the blood and bodily fluids of living humans and animals. Outside of this environment, the Ebola virus, like all non-enveloped viruses, is sensitive to inactivation through ultraviolet light and drying. To-date the most authoritative and comprehensive guidance is coming from the CDC with respect to environmental infection control in the healthcare environment. The CDC has reported that under ideal laboratory conditions, the virus can persist for up to six days; however, this "Ideal Environment" study does not reflect what would occur in the real world where blood or bodily fluids infected with the Ebola virus would be subject to drying and ultraviolet light. Outside of the CDC "Ideal Environment" testing, there is currently no evidence to suggest that the virus persists for more than 24 hours on surfaces without visible blood or bodily fluid contamination that are subject to routine cleaning.

KEY POINTS: Response

U.S. Travel Members should…

- Remain calm; call 911 / activate emergency response system
- Begin executing the EVD Emergency Operations Plan
- Isolate suspected patient(s) and wait for first responders

RECOVERY

The overarching objective of the Recovery Phase is to help the organization resume steady state business operations as soon as practical. This may seem intuitive and easy to accomplish, but after an organization has been significantly affected by a pandemic or biohazard crisis, recovery requires a methodical approach. As with all steps in the Emergency Operations Plan, it is vital for the organization to think broadly when applying the recovery framework throughout the enterprise.

The Recovery Phase typically follows the Response Phase. It includes the necessary steps to devolve the event, stand down the internal responders and begin rebuilding. Traditional recovery occurs in a linear fashion (i.e. rebuilding physical infrastructure after a hurricane: Once the storm has passed, damage is assessed, rebuilding begins and the organization begins to move forward). Population health emergencies rarely occur in the same linear fashion: viruses are dynamic, containment is difficult and a pandemic is likely to go through multiple lifecycles before the threat is finally eliminated. Recovery thus needs to be a continuous process as the threat evolves.

There are three factors that indicate the 2014 EVD outbreak will remain a dynamic event that will take months-to-years to resolve:

1. As previously cited, the West African outbreak is the largest outbreak of Ebola ever recorded;
2. The outbreak developed in a region of Africa with very limited public health and medical infrastructure; *and*
3. The West African Ebola outbreak was not contained early. Significant infrastructure and personnel are now needed to gain control of the growing situation. Political, financial, geographic and cultural barriers are slowing the response of the international aid community.

Given that the 2014 Ebola Outbreak will likely continue for the immediate future, organizations must take a more dynamic view of the Recovery Phase process and should prepare themselves for the possibility of multiple waves of the disease during this outbreak. Prematurely standing down a Crisis Management Team or eliminating added resources could potentially expose an organization to significant business continuity risks.

Listed below are critical elements of the Recovery Phase. These elements are discussed in general terms; each organization will need to adapt these elements to their particular needs as there is no 'one-size-fits-all' solution.

Conduct an After Action Review

An After Action Review (AAR) is a structured way to review an incident, the performance of an organization and the sufficiency of its Emergency Operation Plan. In the same way that training is essential for a successful response, an AAR is essential for evaluating the effectiveness of the entire crisis management and its individual phases. After Action Reports typically focus on the following tasks:

- Assessing what went well during the response or implementation phase;
- Examine where there were opportunities for improvement; *and*
- Determine how the organization can learn from the event.

Non-biased external facilitators can be extremely valuable in assisting senior management and members of the Crisis Management Team through the AAR process. The AAR should not focus exclusively on the Response Plan; prevention, mitigation, and preparation plans should all be subject to feedback and scrutiny.

In order to be effective, the AAR must collect feedback from all levels of participants. If organizations fall into the trap of only evaluating an exercise or experience at the leadership level, or focus only on "successes" and "what went well," the organization could potentially overlook critical gaps and variation-prone elements in the plan. These gaps represent opportunities for failure in the future. Instead, the AAR must:

- Begin with collecting feedback from the staff and stakeholders at the most functional level;
- Collect feedback at every level of action, supervision and management; *and*
- Pay particular attention to which employee groups were affected and how those groups were impacted.

This analysis may produce a better understanding of organizational vulnerability; it may also inform elements of the future mitigation strategy; and it could dramatically improve future organizational resilience. During the AAR process, organizations should take the time to identify and recognize members of its team that demonstrated exceptional performance and understanding. The inherent capabilities to rise to the occasion during crises can represent an invaluable tool set that is highly desired in high-stress industries. These individuals may have the skills and abilities to play a more significant role in future crisis events.

Revise Crisis Plans to Reflect Lessons Learned

Collecting feedback through the AAR process is most useful if and when the organization takes the lessons learned in the AAR and uses them to revise the operational plans and policies that were exercised. Organizations without formal plans in place should utilize the opportunity to draft these documents before institutional memory fades and attention focuses on new issues. The AAR process can also be a great opportunity to train new or alternative members of the Crisis Management Team.

One of the most pervasive and recurring failures of the recovery phase among corporations is the failure to share lessons learned across the organization and with partners. Future resilience is a function how well organizations are prepared for complex events; no individual organization handles events like EVD in a vacuum. Cross-organizational and inter-organizational participation throughout the risk management process is a marker of future success.

Continue Enhanced Risk Communications

Real-time, transparent communications with staff, customers, and other stakeholders reduces anxiety and makes it easier for people at every level to focus on their own essential work. Effective communications also enable the main goal of the Recovery Phase: to return to normal operations. As the organization moves from Response to Recovery, it is essential to keep employees and stakeholders in the loop with simple and progressive crisis communications:

1. ***Pre-Recovery Phase***: We believe we have (past tense) successfully responded to the emergency, and we are continuing to monitor the situation for new developments;
2. ***Initiating Recovery Phase***: We are confident we have responded to (or mitigated) the threat. We will now begin to resume normal operations, and we will remain vigilant; *and*
3. ***Mid-Recovery***: The crisis is over, and we are taking time to learn from this event so that we can continually improve our plans and better prepare ourselves for future events.

Internal and closely targeted risk communication messages will not inform the public that the situation is resolved. This issue is of particular importance for the travel industry. There needs to be external facing messaging for organizations that experienced an economic downturn as a result of the pandemic. Various public relations strategies may help improve consumer sentiment and remove stigma associated with an Ebola-related event. Effective methods of communicating the resolution include:

- Highlighting the organization's preparation;
- Describing the response; *and*
- Outlining continued operations throughout the course of the event.

These steps have the benefit of building a sense of confidence through competence while also sending the subtle message that the "crisis" nature of the event has passed.

Examine Workforce Factors After Recovery

The health and welfare of the organization's staff is of paramount importance. An important and often overlooked consideration related to the Recovery Phase is ensuring that critical employees are assessed for fatigue and offered appropriate downtime. The prolonged nature of Ebola-like pandemics can be exhausting for employees attempting to manage their routine responsibilities and crisis duties.

KEY POINTS: Recovery

U.S. Travel Members should…

- Devolve Crisis Team and resume steady-state operations
- Conduct After-Action Review and apply lessons learned
- Continue proactive risk communications to manage messages

SUMMARY AND CONCLUSION

The 2014 outbreak of Ebola Virus Disease is a historic but regionally isolated event. The current outbreak, which is caused by the *Zaire* strain of the Ebola virus, has a mortality rate between 60-80%. The disease remains almost entirely confined to three countries in West Africa (Guinea, Liberia and Sierra Leone), though there have been isolated cases caused by expatriated travelers or healthcare workers exposed while working in an affected area.

Because EVD is **not** transmitted via casual contact, people who do not have direct contact with the blood or body fluids of an infected individual who is experiencing symptoms are at very low risk of contracting EVD. However, intense media scrutiny and inaccurate perceptions about EVD risks have created predictable concerns among the traveling public.

To-date, there is no indication that EVD will result in sustained, person-to-person transmission in the United States, nor is there any reason to limit travel to, or meetings in, non-affected regions of the world. By the same token, the emergence of EVD presents an excellent opportunity for U.S. Travel member organizations to review, amend or – if necessary – develop actionable Emergency Operations Plans (EOPs).

Grounded in organization-specific risk analyses, effective EOPs will guide each step of a company's planning efforts, including: Prevention and Mitigation, Preparedness, Response and Recovery. As with other risk management activities, it is critical to engage proactively and before an actual event to develop, equip, train, exercise and evaluate an organization's capacity to execute its plans, policies and procedures for emergencies; EVD is no exception. The medical risks to non-West Africa personnel is low, but there are significant operational and reputational risks associated with failing to have an actionable EVD Emergency Operations Plan. Even a poorly handled "false alarm" will have consequences for large organizations.

This Guide and the Appendices that follow provide a conceptual framework for U.S. Travel member organizations EVD planning and response procedures. Those with additional questions should contact U.S. Travel at feedback@ustravel.org or by telephone at 202.408.8422.

APPENDIX 1: SCENARIOS TO EVALUATE EFFICACY OF EVD PLANNING

Scenario 1: Widely Attended Sales Conference

A large, multi-national organization is hosting a conference for its international sales and marketing professionals. The conference will be held in a major U.S. city in a convention venue adjacent to a hotel complex. The organization is expecting several hundred of its employees from all over the world, including its West Africa division. Consider the following:

- How might you assess the EVD risks for this convention?
- Should you have a separate check-in or registration areas for participants coming from the affected regions of West Africa?
- Should you take any special precautions with regard to medical preparedness or onsite medical resources?
- What sort of cleaning or decontamination procedures might potentially be required at the conference venue?
- Should you conduct any pre-conference risk communications with participants?
- Do you have internal or external resources that can provide specific medical guidance for this situation?

Scenario 2: Employee Returning from Personal Leave

An employee is returning to work after taking a personal trip to a country where EVD is circulating. Fellow staff members are aware of this individual's travel and are concerned that he might bring EVD into the workplace. Consider the following:

- How would local public health laws apply to this situation?
- What human resource issues will this situation raise?
- How do issues of privacy and protected health information apply to this situation?
- How would you address this situation with other employees?
- How would you address this situation with your customers?
- Do you have internal or external resources that can provide specific medical guidance for this situation?

Scenario 3: Medical Provider Ill in Hotel While Returning from Humanitarian Mission

A medical provider has just returned from a country where she was treating patients with EVD. During a layover, she checks into a hotel to rest. During that time she begins to feel unwell and develops a low-grade fever. She subsequently goes to a local hospital where she is admitted for the evaluation of EVD. Consider the following:

- What will be the immediate impact of this situation on the hotel staff and guests?
- What sort of cleaning or decontamination procedures will be required at the hotel?
- How would local public health laws apply to this situation?
- How would you address this situation with the hotel employees?
- How would you address this situation with the hotel guests?
- Do you have internal or external resources that can provide specific medical guidance for this situation?

Scenario 4: Cleaning Crew Discovers Biological Waste at International Airport

A cleaning crew discovers what appears to be vomitus in the back of a rental car shuttle bus. The cleaning crew refuses to clean the bus because they are concerned about the risk of possible EVD. The shuttle bus operates at an airport with international arrivals from countries where EVD is currently circulating. Consider the following:

- How would the clean up of the potentially biologic material in the back of the shuttle bus be accomplished?
- Are pre-existing policies in place that address this event?
- Are there any internal or external resources specifically trained to deal with the clean up of blood or bodily fluids?
- Should the bus be quarantined?

APPENDIX 2: RISK ASSESSMENT CHECKLIST

QUESTIONS FOR CONSIDERATION	LOWER RISK	INCREASED RISK
1. Does your organization anticipate hosting any of the following types of people:		
Medical Workers?	No	Yes
Aid Workers?	No	Yes
Diplomats?	No	Yes
2. Does your organization have employees who will travel to/from an affected West African nation? If yes, will those employees:		
Visit hospitals?	No	Yes
Have contact with people who are sick?	No	Yes
Have contact with healthcare workers?	No	Yes
Perform aid work or missionary work?	No	Yes
Attend funerals?	No	Yes
3. What is the likelihood that guests or participants of your organization will have traveled to the affected West African nations and participated in the following types of activities in the last 21 days:		
Visited hospitals?	No	Yes
Had contact with people who are sick?	No	Yes
Had contact with healthcare workers?	No	Yes
Performed aid work or missionary work?	No	Yes
Attended funerals?	No	Yes
Other Organizational Capabilities		
4. Is your organization able to conduct pre-arrival screening of potentially infected individuals in an effective manner?	Yes	No
5. Can you identify the risk profiles of individuals before they arrive to determine if any participants are medical workers, aid workers, or diplomats?	Yes	No
6. Is your organization capable of successfully containing an individual who becomes ill or begins to exhibit symptoms?	Yes	No
7. Does your organization have access to medical personnel or facilities that are capable of conducting an assessment or test of a potentially infected person?	Yes	No
8. Does your organization have the ability to conduct reliable symptom- and risk-based screening of individuals when they arrive at your location AND is that person going to stay less than 36 hours?	Yes	No
9. Does your organization have contingency plans in the event that you come into contact with an individual who is suspected or known to have EVD?	Yes	No
10. Have you effectively communicated and trained your employees on your EVD contingency plans? Has that training occurred among the people most likely to come into first contact with the EVD infected person?	Yes	No
11. Are you conducting compliance audits or unscheduled drills with employees to ensure that your plans are effective and to identify weaknesses?	Yes	No

APPENDIX 3: PREVENTION & MITIGATION CHECKLIST

Task Description	Complete	In Progress	Not Addressed
IMPLEMENTING CONTROLS			
Provide hand sanitizer to all locations where food or beverages are available.	☐	☐	☐
Make disinfectants and disposable towels available in all public areas.	☐	☐	☐
Send communications to employees urging them to obtain seasonal flu vaccinations.	☐	☐	☐
Communicate to everyone that any person experiencing an infectious illness should refrain from attending work, the venue, or event.	☐	☐	☐
Increase facility-cleaning schedules with appropriate disinfectant agents.	☐	☐	☐
Increase HVAC flow to circulate fresh air in facilities.	☐	☐	☐
Set up partitions in areas where there are high levels of interaction.	☐	☐	☐
Install clear sneeze guards over food and counters.	☐	☐	☐
RISK COMMUNICATIONS			
Perform pre-event risk assessment and communicate the possible of exposure exists, the actual risk of an exposure, and the preparations that have occurred to manage a potential outbreak.	☐	☐	☐
Send pre-event questionnaire surveying travelers of: recent travel history, risk factors for infection, action steps for people at enhanced risk.	☐	☐	☐
Communicate with employees and employees' families to address the possibility of an outbreak and the steps being taken to prepare for, reduce the possibility of, and manage the response should one occur.	☐	☐	☐

APPENDIX 4: PREPAREDNESS CHECKLIST

Task Description	Complete	In Progress	Not Addressed
Select an Ebola Management Plan coordinator at every facility to oversee planning, training and implementation at that facility. Ensure that the local coordinator has a clear chain-of-command to the Crisis Management Team and that job responsibilities of this coordinator are adjusted to allow for adequate time for this new role.	☐	☐	☐
Organize and train Ebola Planning & Response Teams at every facility. Establish a clear chain-of-command and defined roles/responsibilities for each team member. Consider how these team members will interact with local facility leadership & the corporate Crisis Management Team. Develop alternate team members and ensure that each team member has adequate time and resources to be successful.	☐	☐	☐
Identify essential employees for regular business operations and other critical inputs required to maintain business operations. This should be conducted at both the corporate level and the local level.	☐	☐	☐
Develop a plan to augment current workforce capabilities, with a particular focus on redundancy for essential employees. Evaluate the need to engage temporary workers and cross-train current staff members during the planning phase. Consider options to outsource or transfer work to non-effected groups.	☐	☐	☐
Forecast and plan for employee absences during an acute event due to factors such as personal illness, mental health needs, family member illness, community containment measures, school closures, and public transportation impacts.	☐	☐	☐
Develop 'work from home' and alternative worksite policies and capabilities. Communicate these policies to staff members well in advance of the need to implement them. Implement and test related technical infrastructure.	☐	☐	☐
Evaluate potential impacts on the organization's supply chain and among its vendors. Work with suppliers and vendors pre-plan strategies to mitigate any foreseeable impacts. Consider the need to develop alternate supplier and vendors in the event that primary groups stumble.	☐	☐	☐
Ensure corporate access to Subject Matter Experts to provide advice and guidance on plan development and response. Consider the need to incorporate advisors into the Crisis Management Team and consider how local plan coordinators will obtain advice from SMEs.	☐	☐	☐
Secure access to specialty materials needed as part of the Prevention, Mitigation and Response plans. Ensure that employees are thoroughly trained on the use of equipment. Consider how equipment will be stored and disposed of after use.	☐	☐	☐

Develop all policies & guidelines that the organization can reasonably anticipate needing during a pandemic event to avoid creating ad hoc or 'on demand' policies in the midst of an emergency. Take the time to review policies with SMEs and with impacted staff to ensure that plans both reflect best practices and are realistic for implementation.	☐	☐	☐
Establish triggers and set up procedures for activating various policies and operational plans. Ensure that there are effective means of communication along the chain of command between recognition of a trigger and authorization to activate the appropriate plan or policy.	☐	☐	☐
Disseminate final policies to the workforce. Conduct training with all employees who are potentially included in any element of any operational plan. Be sure to include accountability checks that ensure training occurred and was effective. Pay particular attention to the need for objective, competency-based validation of training for all employees who will be expected to wear Personal Protective Equipment and/or respond to situations with moderate or high-risk of contact with Ebola patients or contaminated materials.	☐	☐	☐
Develop appropriate emergency and risk-communications strategies for impacted stakeholder groups (employees, customers, investors, etc). Test the effectiveness communication methodologies and ensure that all appropriate contact information is up-to-date. Anticipate the need to address fear and misinformation in each communication.	☐	☐	☐

APPENDIX 5: RESPONSE CHECKLIST

Task Description	Complete	In Progress	Not Addressed
ACTIVATION AND INTERNAL RESPONSE			
Determine that a suspected or confirmed case has been identified within an enterprise, venue or event, OR an employee has potential contact with EVD infected individual.	☐	☐	☐
Activate the local emergency response system via 9-1-1 for any immediate life threat and communicate concerns for Ebola.	☐	☐	☐
Identify and appoint an on-scene Incident Commander who establishes control of the event.	☐	☐	☐
Contact the local health department or on-scene health advisors for guidance in the event of a non-life threatening event.	☐	☐	☐
Isolate suspected patients and utilize enhanced blood-borne pathogen procedures (*see Appendix 7*).	☐	☐	☐
Limit access to affected areas and implement security measures to reduce pedestrian traffic. Cordon off affected area and clear corridors of bystanders.	☐	☐	☐
EXTERNAL RESPONSE			
Facilitate Health Department communication with Incident Commander and affected individuals on scene.	☐	☐	☐
Assist with isolation of affected areas and person(s).	☐	☐	☐
Prepare messaging for onsite persons and external outlets (such as media). Work closely with Health Department to ensure consistency in messaging.	☐	☐	☐
FACILITY CLEANING AND DISINFECTING			
Thoroughly clean food preparation areas with EPA-approved disinfectant agents.	☐	☐	☐
Clean high-risk, high-traffic areas with greater frequency.	☐	☐	☐
Provide more than adequate supplies of hand sanitizer at points of ingress and egress.	☐	☐	☐

APPENDIX 6: RECOVERY CHECKLIST

Task Description	Complete	In Progress	Not Addressed
CONDUCT AFTER-ACTION REVIEW			
Collect feedback from all participants.	☐	☐	☐
Describe the event from the perspective of each group.	☐	☐	☐
Determine strengthens and positive aspects of the response or exercise.	☐	☐	☐
Evaluate the weaknesses of the response.	☐	☐	☐
Conduct root cause analysis of all failures.	☐	☐	☐
Provide an opportunity for information and practice sharing across groups.	☐	☐	☐
REVISE CRISIS PLAN			
Incorporate all lessons learned from the After Action Review.	☐	☐	☐
Research any/all approaches used by other groups that may be incorporated into plan.	☐	☐	☐
Communicate & educate staff on revised plan.	☐	☐	☐
Conduct training exercises with staff to gain proficiency with new practices.	☐	☐	☐
CONTINUE ENHANCED RISK COMMUNICATIONS			
Highlight organizational preparedness.	☐	☐	☐
Describe the response.	☐	☐	☐
Outline the recovery plan.	☐	☐	☐
Execute Recovery Phase PR plan.	☐	☐	☐

Appendix 7:

OSHA® FactSheet

Cleaning and Decontamination of Ebola on Surfaces

Guidance for Workers and Employers in Non-Healthcare/ Non-Laboratory Settings

Workers tasked with cleaning surfaces that may be contaminated with Ebola virus, the virus that causes Ebola hemorrhagic fever (EHF), must be protected from exposure. Employers are responsible for ensuring that workers are protected from exposure to Ebola and that workers are not exposed to harmful levels of chemicals used for cleaning and disinfection.

Guidelines for cleaning and disinfection

- Immediately clean and disinfect any visible surface contamination from blood, urine, feces, vomit, or other body fluids that may contain Ebola virus.
- Isolate areas of suspected Ebola virus contamination until decontamination is completed to minimize exposure to individuals not performing the work.
- Cover spills with absorbent material (e.g., paper towels), then pour disinfectant on to saturate the area, and allow bleach to soak into spills for at least 30 minutes before cleaning to allow it to kill any virus or other infectious agents that may be present.
- Treat any visible contamination or bulk spill matter with a suitable disinfectant (described on p. 2) before cleaning up and removing bulk material.
- After disinfecting and removing bulk material, clean and decontaminate the surface using the disinfectant.
- Ensure adequate ventilation in areas where workers are using disinfectants, including by opening windows and doors, or using mechanical ventilation equipment.
- In some cases, the use of chemical disinfectants may require an employer to train workers about how to protect themselves against chemical hazards and comply with OSHA 's Hazard Communication, 29 CFR 1910.1200, and other standards.

Use appropriate protective equipment

Employers must select personal protective equipment (PPE) (such as gloves, gowns, goggles and facemasks) that will protect workers against Ebola virus and other hazards to which they may be exposed. Workers must wear PPE to help minimize exposure to the virus via mucous membranes or broken skin. PPE suitable for contact-transmissible diseases, such as Ebola, includes:

- Nitrile gloves (consider using double-gloves for extra protection);
- Fluid-resistant or fluid-impermeable gowns;
- Goggles or face shields; and
- Facemasks that cover the nose and mouth.

Wearing protective sleeve, leg, and shoe coverings or fluid-resistant or fluid-impermeable coveralls further reduces the risk of contact with infectious materials. In some cases, additional respiratory protection (e.g., respirators) may be necessary to protect workers from exposure to Ebola and/or chemical disinfectants.

- Use tools, such as tongs from a spill kit, as much as possible rather than doing cleanup work directly with gloved hands.
- After cleaning and disinfection work is complete, remove PPE as follows: gloves, face shield/goggles, gown, and then

mask/respirator. Wash hands with soap and water, or use an alcohol-based hand gel if no running water is available. See CDC fact sheet on donning and removal of PPE: www.cdc.gov/vhf/ebola/pdf/ppe-poster.pdf.

- Avoid cleaning techniques, such as using pressurized air or water sprays, that may result in the generation of bio-aerosols (aerosolized droplets containing infectious particles that can be inhaled).

Disinfectants for Ebola virus

- Use an EPA-registered disinfectant suitable for non-enveloped viruses (e.g., adenovirus, norovirus, poliovirus) to treat contamination/spills and to disinfect surfaces after bulk spill material has been removed. See www.epa.gov/oppad001/chemregindex.htm. Follow manufacturer instructions for the specific disinfectant.
- When commercial disinfectant products are unavailable, common household bleach and other appropriate disinfectants may be effective alternatives.
- Use a 1:10 solution of bleach to water (e.g., 1 cup of bleach in 9 cups of water).
- **Never mix chemicals together.** Certain combinations of chemicals can be deadly or can reduce the effectiveness of the disinfectant.

Guidelines for waste disposal

- Soak materials and PPE used in cleanup and decontamination in disinfectant, double-bag, and place in a leak-proof container to further reduce the risk of worker exposure. Use a puncture-proof container for sharps.
- It may be necessary to dispose of contaminated objects with porous surfaces that cannot be disinfected.
- Dispose of waste from surface cleanup in accord with CDC guidelines and the U.S. Department of Transportation's (DOT) Hazardous Materials Regulations (HMR), at www.cdc.gov/vhf/ebola/hcp and phmsa.dot.gov/hazmat/transporting-infectious-substances.

Use appropriate respiratory protection

- In instances where workers may be exposed to bio-aerosols (e.g., as a result of spraying liquids or air during cleaning) suspected of or known to contain Ebola virus, additional respiratory protection is needed. In these cases, medically qualified workers must use, at a minimum, a NIOSH-approved, fit-tested N95 respirator.
- Wearing a respirator for extended periods of time can be uncomfortable. Workers who need respirators for long durations may find powered air-purifying respirators more tolerable.
- Respirators or face masks used for protecting workers against Ebola virus may not be effective for also protecting them from exposure to certain toxic chemicals used for cleaning and decontamination. To learn more about the requirements for selecting an appropriate respirator to protect against chemical exposure (elastomeric respirator with appropriate chemical cartridges or a supplied-air respirator), consult OSHA's Respiratory Protection standard, 29 CFR 1910.134, and the manufacturer's Safety Data Sheet (SDS) for the specific chemical(s) that workers are using. See OSHA's Respiratory Protection web page: www.osha.gov/SLTC/respiratoryprotection.

Follow applicable OSHA standards

- Employers must ensure that they comply with OSHA's Bloodborne Pathogens standard, 29 CFR 1910.1030, to protect workers who may be exposed to blood or other potentially infectious materials.
- OSHA's Personal Protective Equipment (PPE) standard, 29 CFR 1910.132, provides additional information about how to select and use appropriate PPE, training and other requirements.
- Employers must comply with OSHA's Hazard Communication standard, 29 CFR 1910.1200, when their workers use certain chemicals for cleaning and decontamination.
- In some cases where a specific OSHA standard doesn't apply, the General Duty Clause (Sec. 5(a)(1)) of the *Occupational Safety*

and Health Act (OSH Act) requires employers to furnish to each employee employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to employees.

Assistance for Employers

OSHA's On-site Consultation Program offers free and confidential advice to small and medium-sized businesses in all states across the country, with priority given to high-hazard worksites. On-site Consultation services are separate from enforcement and do not result in penalties or citations. Consultants from state agencies or universities work with employers to identify workplace hazards, provide advice on compliance with OSHA standards, and assist in establishing safety and health management systems. To locate the OSHA On-site Consultation Program nearest you, call 1-800-321-6742 (OSHA) or visit www.osha.gov/consultation.

Additional OSHA resources

- Safety and Health Topics web page for Ebola
  www.osha.gov/SLTC/ebola
- Safety and Health Topics page for Bloodborne Pathogens (and Needlesticks)
  www.osha.gov/SLTC/bloodbornepathogens
- Safety and Health Topics web page for PPE
  www.osha.gov/SLTC/personalprotectiveequipment
- Safety and Health Topics web page for Respiratory Protection
  www.osha.gov/SLTC/respiratoryprotection
- Safety and Health Topics web page for Hazardous and Toxic Substances
  www.osha.gov/SLTC/hazardoustoxicsubstances
- Hazard Communication web page
  www.osha.gov/dsg/hazcom

Note: This document is not intended to cover all OSHA standards that may apply. State Plans adopt and enforce their own occupational safety and health standards at www.osha.gov/dcsp/osp. Additionally, this guidance is not for cleanup and decontamination of Ebola virus released as a biological weapon. See OSHA's emergency preparedness and response resources for information related to biological terrorism: www.osha.gov/SLTC/emergencypreparedness.

This is one in a series of informational fact sheets highlighting OSHA programs, policies or standards. It does not impose any new compliance requirements. For a comprehensive list of compliance requirements of OSHA standards or regulations, refer to Title 29 of the Code of Federal Regulations. This information will be made available to sensory-impaired individuals upon request. The voice phone is (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

For assistance, contact us. We can help. It's confidential.

OSHA® Occupational Safety and Health Administration

www.osha.gov (800) 321-OSHA (6742)

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