

## Decontamination Template for Ebola Virus and Emerging Pathogens

### Applicability

This template is based on best practices, accepted industry clean-up methods and current available scientific information. Incident specific decontamination and health & safety plans MUST be developed onsite based on the conditions (i.e. location, contaminant, terrain, type of structure, weather) AND clinical state of the persons exposed (i.e. dry vs wet).

Publications referenced to help develop this template are listed at the end of this document.

### Premise

The primary goals of decontamination are to:

1. remove the risk of exposure to the virus/pathogen/contaminant.
2. return the scene to pre-incident condition.
3. benefit the greatest number of people.

If scene control is not established, victims may:

- a) leave the scene and go home.
- b) go to the nearest medical facility or their own primary care physician for help.
- c) spread the contaminant (i.e. vehicle, local transit system).
- d) create chaos/confusion/panic.

The responder's goal is to respond, remediate the scene then conduct recovery operations so the scene can be returned to the property owner.

### General Procedures

#### Size Up/Notify

1. Quickly size up the incident (wind direction). Stage upwind of the contaminant. Responder safety is paramount.
2. Identify the contaminant (i.e. what, wet/dry, liquid/solid, how much).
3. Who/what is impacted (i.e. children, location – inside/outside)? Is the contaminant imminently transient (i.e. near mass transit, water source)?
4. Get help/Make notifications (i.e. regulatory, law enforcement, EMS, Sanitary sewer districts).
5. Establish Scene Control: isolate the scene. Use whatever is available( tape, barricades, people, natural structure – gym, house, movie theatre).
6. Establish initial isolation and protective distances based on the hazard.

#### Evaluate

1. Conduct initial decontamination triage (exposed, injured, fatalities).
2. Isolate and segregate the exposed/contaminated/non-exposed/injured/fatalities.
3. Re-evaluate isolation and protective distances to ensure responder safety and contaminate containment.
4. Establish decontamination zones ( i.e. Hot, warm, cold).

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5. Identify options for gross decon, self-care decon, monitoring (if applicable).
6. Create a tracking log - who is there, specific location on scene, medical condition.
7. Initiate gross vs self-decontamination and symptom monitoring.
8. Document as much as possible (i.e. sketch, audio record, photos) to preserve scene integrity.

#### **Self-Isolate or Self-Decontamination (if applicable)**

1. Instruct people to self-isolate based on symptoms.
2. Provide self-care decontamination instructions (if applicable).
3. Provide instructions multiple ways (verbal, visual, written) instructions.
4. Maintain perimeter control of each area as needed based on symptoms.
5. Generate a tracking log (name, symptoms, how long, etc.).
6. If asymptomatic, provide instructions for self-monitoring, isolation (if applicable) and notification to health officer if symptoms develop.

#### **“Victim Management” (Injured Parties)**

1. Coordinate with site command to identify options for release, shelter-in place or medical transport for all victims impacted by contaminant release.
2. Release victims from scene based on initial decontamination triage assessment (asymptomatic vs symptomatic).
3. Provide written instructions for asymptomatic persons (monitor for symptoms, shelter-at-home).
4. Transport symptomatic persons to pre-determined location for isolation/monitoring/treatment as needed.

#### **Communication**

1. Identify initial resource to provide information/updates to the media.
2. Establish communication staging area (area where all communications will occur).
3. Prepare incident information to assist local jurisdiction to help make PSAs, emergency alerts to keep public away from the scene.

#### **Technical Decontamination**

1. Response team develop site decontamination plan, waste disposal/storage AND health & safety plans.
2. Identify decontamination options (i.e. mobile treatment, EPA List L disinfectants) AND verify method which will be used to document pathogen destruction (i.e. biological indicators, 3<sup>rd</sup> party testing).
3. Identify response cleanup actions for porous vs non-porous surfaces/items.
4. Verify decontamination method/products selected are registered with California Department of Pesticide Regulations (CDPR).
5. Ensure staff are trained to use decontamination methods/products based on label instructions (i.e. contact times).

### **Waste Management**

1. Response team develops waste disposal plan including how to segregate wastes (EVD/ pathogen waste from decontamination solutions and other non-pathogen waste).
2. Identify waste disposal options for the collection, packaging, labeling, staging/storage and transport of all wastes.
3. Evaluate contractors or subcontractors for ability to handle, package and transport Category A infectious substances per US Department of Transportation (DOT) regulations.
4. Coordinate with local jurisdiction for solid and liquid waste disposal to ensure regulatory compliance.
5. Ensure waste removal and tracking system (i.e. “cradle-grave”) is completed.

### **Site Clearance**

1. Meet with property owner, response team, local jurisdiction and environmental and/or Industrial hygienist to discuss “re-occupancy” criteria.
2. Document site clearance process/criteria (i.e. when/reasons why/how to announce).
3. Prepare incident information for media/public communication regarding (“safe for-use”).

**Note:** environmental clearance sampling protocols for Ebola/highly pathogenic agents do not currently exist. Current best industry practices include:

- a. adherence to EPA List L disinfectant product manufacturer’s instructions (i.e. follow label directions for contact time, use).
- b. pathogen kill efficacy (log-six kill performance).
- c. use of biological indicators.

### **Incident Critique (After Action Report)**

1. After incident is controlled and site is returned to property owner, assemble responders and response agencies to review response.
2. Document brief summary of pros & cons for review at later time.
3. Make sure all completed forms/photos from the incident are tracked/logged for additional follow-up as needed.

## References

1. Guidelines for Mass Casualty Decontamination During a HAZMAT/Weapon of Mass Destruction Incident, Volumes I and II, January 8, 2013. US Army Chemical Biological, Radiological and Nuclear School, ECBC-SP-036
2. Disinfection and Disposal of Household Goods Belonging to Patients Infected with Ebola Virus. USAPHC Technical Information Paper 13-032-1014
3. State of Connecticut, Mass Decontamination Mobilization Plan – DRAFT, 12 November 2004
4. Hazardous Waste – Decontamination, OSHA, Decision Aid for Emergency Decontamination
5. Key planning Factors for Recovery from a Bio Terrorism Incident, Summer 2012, Homeland Security Science and Technology
6. Cleaning and Decontamination of Ebola on Surfaces -- Guidance for Workers and Employers in Non-Healthcare/Non-Laboratory Settings, OSHA Fact Sheet, DTSEM FS-3756 (03/2016)
7. Vogt, B.M. and J.H. Sorrensen. 2002. How clean is safe? Improving the effectiveness of decontamination of structures and people following chemical and biological incidents (PDF). Final Report (ORNL/TM-2002/178). Prepared by Oakridge National Laboratory for the U.S. Department of Energy.
8. Reopening Public Facilities After a Biological Attack: A Decision-Making Framework (2005), Chapter: Executive Summary, The National Academies Press, Openbook
9. EPA Science Matters Newsletter: Testing Anthrax Decontamination Techniques (Published November 2013)
10. Remediation following Man-made or Natural Disasters -Homeland Security Research, Indoor and Outdoor, US EPA