

**California Emergency Medical Services Authority  
Hospital and Healthcare System  
Disaster Interest Group**

**Recommendations for Hospitals  
Addressing  
Water Containment and Run Off  
During Decontamination Operations**



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## **Recommendations for Hospitals Addressing Water Containment and Run Off During Decontamination Operations**

It is recognized that each facility has different capacities to manage varying numbers of contaminated victims. For example, based on a current Hazard Vulnerability Assessment (HVA), some facilities may plan for decontaminating a single victim and appropriately containing the waste water. In this case, two or more victims would exceed the capacity of the facility.

There is currently no legislative or regulatory mandate to describe the details on decontamination facilities' containment procedures and capacities. Each hospital facility, however, must establish water containment capacities based on a facility hazard vulnerability assessment (HVA) for determining the potential number of patients that may require decontamination. In addition, hospitals should consider community hazardous materials risks to identify potential numbers of victims that may present to the facility.

The intent of the attached matrix is to provide hospitals with planning guidance for managing the waste water and runoff generated by decontamination of victims presenting to the facility for emergency care and treatment.

Hospitals should plan for decontamination operations that will not exceed their capacity, but should also develop a contingency plan for mass decontamination when patient numbers do exceed their capacity. It is critical that hospitals develop decontamination and waste water containment plans in collaboration with proper local regulatory authorities (Publicly Owned Treatment Works (POTW) and Municipal Separate Storm Sewer Systems (MS4)). (See glossary for definitions of the POTW and MS4.)

This document was developed to assist hospitals in planning for the management of waste water runoff during decontamination of victims at the facility. A glossary is provided at the end of the document.

The State of California Water Resources Control Board and the Regional Water Quality Control Boards within the California Environmental Protection Agency recognize that the priorities for hospitals during a chemical, biological, radiological or nuclear event requiring decontamination are those of life safety, protection of the facility and finally protection of the environment. There is no exception to the letter of the law; however, circumstances are always a major consideration by the regulators when an emergency requires actions that technically violate the standards. All reasonable measures must be taken by hospitals to capture waste water runoff.

The California Hospital and Healthcare System Disaster Interest Group wishes to thank the State of California Water Resources Control Board and the Regional Water Quality Control Board (Region 5) for their guidance and collaboration in preparing and reviewing this document.

## Addressing Water Containment and Run Off During Decontamination Operations

Tier	Description	Recommendations
<p><b>Decontamination Operations for Planned Capacity</b></p>	<p>Decontamination operations for the planned capacity is the provision of patient decontamination and containment of waste water based on the facility hazard vulnerability assessment.</p> <p>Each facility must provide plans and procedures for:</p> <ul style="list-style-type: none"> <li>• Victim/patient decontamination</li> <li>• Waste water containment</li> <li>• Waste water disposal for planned facility capacity.</li> </ul>	<p>Waste water from decontamination must be contained.</p> <p>Considerations to address in hospital policy and procedure include:</p> <ul style="list-style-type: none"> <li>• Identification of the agent               <ul style="list-style-type: none"> <li>○ Field/Fire/Haz Mat reports</li> <li>○ Laboratory testing of waste water</li> </ul> </li> <li>• Waste water containment.</li> <li>• Waste water disposal that may include contracts with waste pumping and disposal companies.</li> <li>• Facility clean up and readiness for return to normal operations.</li> </ul>

## Addressing Water Containment and Run Off During Decontamination Operations

Tier	Description	Recommendations
<b>Mass Decontamination Operations</b>	<p>Mass decontamination is defined as an incident that involves increased numbers of victims exceeding the planned capability of the facility to decontaminate those victims. Attempts must be made to contain waste water.</p> <p>Life safety of victims, current patients and personnel is the primary mission. Protection of the environment is a secondary consideration. Local fire and/or hazmat resources may not be able to respond to the facility to assist in the decontamination efforts. The facility must anticipate decontamination requirements that exceed the planned capacity.</p> <p>Large quantities of water are required to safely and completely decontaminate victims, resulting in large quantities of waste water with dilute contaminants.</p> <p>The facility must work closely with the POTW or MS4 to plan for decontamination that exceeds the planned facility capabilities and investigate the options for containment of mass quantities of waste water and runoff during the process.</p> <p>In consultation with local authorities, berm the decontamination area and dike the waste water runoff to the extent possible as follows:</p> <ul style="list-style-type: none"> <li>• Containment</li> <li>• Diverting to sanitary sewer</li> <li>• Diverting to storm drains</li> <li>• Diverting to ground leaching.</li> </ul> <p>Notification of proper regulatory authorities when waste water cannot be contained should be in accordance with the Health and Safety Code, Chapter 6.95, Section 25500.</p>	<p>Due to the location of the decontamination area and the large quantities of runoff produced, the sanitary sewer may not be an option to route the runoff of waste water and the storm drain or ground leaching may be necessary in an emergency.</p> <p>Considerations to address in hospital policy and procedure include:</p> <ul style="list-style-type: none"> <li>• Involve the proper regulatory authorities (POTW/MS4) and first responders providing decontamination services in planning for mass decontamination and waste water issues. Make reasonable efforts to contain the excess waste water including the use of berms and dikes.</li> <li>• Ensure large quantities of water are available for decontamination to dilute the agent as much as possible.</li> <li>• Direct excess waste water to the sanitary sewer and immediately notify the POTW and/or MS4.</li> <li>• Should the sanitary sewer not be available, immediately notify the proper regulatory authorities (MS4, POTW, etc.)</li> <li>• Investigate procedures for containment and disposal of the contained waste water: <ul style="list-style-type: none"> <li>○ Contracts with waste pumping and disposal companies</li> </ul> </li> <li>• Agreements with the POTW/MS4 to allow waste water to flow into sanitary sewer.</li> <li>• Identification of the agent <ul style="list-style-type: none"> <li>○ Field/Fire/Haz Mat reports</li> <li>○ Laboratory testing of excess waste water.</li> </ul> </li> <li>• Establish procedures for facility clean up and readiness for return to normal operations.</li> </ul>

## Addressing Water Containment and Run Off During Decontamination Operations

### Glossary

1. **POTW:** Publicly Owned Treatment Works are the local authority who runs the water treatment plants and collection systems in the jurisdiction. These plants receive effluent (waste water) for treatment and they are, in many cases, one of the largest concentrations of hazardous chemicals to treat the effluent.
2. **MS4:** Municipal Separate Storm Sewer Systems are the storm runoff system within a jurisdiction. The runoff contained in these systems may flow directly to waterways (rivers, ocean, and streams).
3. **Berm** is a long mound of material (dirt, clay, cement, sandbags) to dam and contain or divert waste water.
4. **Dike** is a material used to contain waste water and materials away from an area.