

# Incident Planning Guide: Chemical Incident

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## Definition

This Incident Planning Guide is intended to address chemical incidents and exposures (e.g., chlorine, nerve agent, blister agent, toxic industrial chemicals). Hospitals may customize this Incident Planning Guide for their specific requirements.

## Scenario

At 12:33 PM a 4-engine, mixed cargo freight train enters your city and collides downtown with a truck resulting in several derailed cars. Within a few minutes, first responders and spectators report a large visible cloud rising from the wreckage and people running from the scene with hands over their faces, coughing violently. Local media reports that survivors smell a bleach-like odor. By 12:40 PM, people are showing up at your emergency department presenting with upper airway stridor and pulmonary edema producing clear and blood tinged secretions. Several other patients complain of upper airway symptoms, burning eyes and nose, lung irritation and inflammation, sore throat, difficulty breathing, wheezing, headaches and dizziness, and anxiety. Six are reported dead at the scene. Your hospital begins patient decontamination but two victims die during the process. Your emergency department is at 110% capacity with many patients who smell of chlorine. Emergency department staff are complaining of difficulty breathing because of the fumes. At least 50% of the patients are showing advanced signs of chlorine exposure including burning pain, redness, and blisters on the skin, difficulty breathing, and fluid in the lungs (pulmonary edema). Three more patients expire while being treated following decontamination. At 2:00 PM, emergency medical services responders from the scene report rumors that the ruptured tank car contained 180,000 pounds of liquid chlorine. The two cars behind the chlorine car are also derailed but not ruptured and may also contain dangerous chemicals. Within 4 hours, triage and patient decontamination have been completed and victims have either been treated and admitted or discharged. Your hospital's inpatient units are at 130% capacity. The entrance to the emergency department and the patient decontamination area require cleaning. There is a large collection of contaminated clothing creating a secondary hazard, and two emergency department staff who aided the initial victims are experiencing stridor. Local law enforcement is collaborating with the FBI to conduct an accident investigation and will begin collecting evidence, including patient clothing, as well as interviewing victims. There is a need for behavioral health counseling for patients, staff, and visitors impacted by the incident.

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**Does your Emergency Management Program address the following issues?**

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**Mitigation**

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1.	Does your hospital address the threat and impact of a chemical incident in the annual Hazard Vulnerability Analysis, including the identification of mitigation strategies and tactics?
2.	Does your hospital participate in pre-incident local response planning with public safety officials (e.g., emergency medical services, fire, and law enforcement), local emergency management officials, other area hospitals, regional healthcare coalition coordinators, and other appropriate public and private organizations, including meetings and conference calls to plan and share status?
3.	Does your hospital have multiple methods and equipment for transportation of contaminated or decontaminated patients (e.g., chairs, stretchers, backboards, sled type devices, blanket drag, multiple person carry, single person carry)?
4.	Does your hospital have evacuation equipment for bariatric and special needs patients?
5.	Does your hospital define and provide special equipment that may be needed during a chemical incident (e.g., sealing tape, heavy duty plastic, decontamination equipment, appropriate personal protective equipment)?
6.	Does your hospital have immediate access to medication and antidotes?
7.	Does your hospital have a plan to: <input type="checkbox"/> Secure the hospital and prevent contamination of patients, staff, and hospitals? <input type="checkbox"/> Individually control heating, ventilation, and air-conditioning and return air for impacted areas?
8.	Does your hospital use expert information sources (e.g., Poison Control Center, Department of Transportation Emergency Response Guide, Centers for Disease Control and Prevention website, city or county emergency operations plan) when planning for chemical incidents, decontamination, and patient treatment?

**Preparedness**

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1.	Does your hospital have a Chemical Incident Plan?
2.	Does your hospital exercise the Chemical Incident Plan yearly and revise it as needed?
3.	Does your hospital have preparedness strategies to reduce the risk from a chemical incident?
4.	Does your hospital have procedures to notify and engage appropriate internal and external experts, including: <input type="checkbox"/> Security? <input type="checkbox"/> Emergency department? <input type="checkbox"/> Safety? <input type="checkbox"/> Decontamination teams? <input type="checkbox"/> Respiratory? <input type="checkbox"/> Critical care? <input type="checkbox"/> Burn specialists? <input type="checkbox"/> Infection control?

	<input type="checkbox"/> Engineering, facilities, and plant operations? <input type="checkbox"/> Toxicologist or chemical expert?
5.	Does your hospital have a procedure to obtain incident and chemical specific details from local officials immediately after the incident and regularly throughout the response?
6.	<p>Does your hospital have a decontamination team trained to U.S. Occupational Safety and Health Administration operations level following “first receiver” guidance that maintains annual competencies, including using personal protective equipment, donning and doffing procedures, medical surveillance, and respiratory protection program that:</p> <input type="checkbox"/> Monitors the health status of staff that participate in decontamination activities and provide appropriate medical follow-up? <input type="checkbox"/> Manages contaminated and non-contaminated personal belongings?
7.	Does your hospital’s Emergency Operations Plan include an emergency patient registration procedure?
8.	<p>Does your hospital have a procedure to regularly inventory:</p> <input type="checkbox"/> Bed availability and census? <input type="checkbox"/> Antidote supplies? <input type="checkbox"/> Airway management supplies? <input type="checkbox"/> Medications and antidotes including bronchodilators, sedatives, paralytics, and analgesics?
9.	<p>Does your hospital have a Communications Plan that includes:</p> <input type="checkbox"/> Pre-incident standardized messages for communicating the risks associated with this incident and recommendations to the public and media? <input type="checkbox"/> Participation in the Joint Information Center in cooperation with local, county, regional, and state emergency management partners? <input type="checkbox"/> Use of social media for communication, including: <ul style="list-style-type: none"> <li>○ Who can use social media?</li> <li>○ Who approves the use of social media?</li> <li>○ When is the use of social media not appropriate?</li> </ul> <input type="checkbox"/> Procedure for notification of internal and external authorities (local, county, region, state)? <input type="checkbox"/> A plan to distribute radios, auxiliary phones, and flashlights to appropriate people and areas? <input type="checkbox"/> A plan for rapid communication of weather status (watch, warning)? <input type="checkbox"/> A plan for rapid communication of situation status to local emergency management and area hospitals? <input type="checkbox"/> A process to identify patients and to notify family members?
10.	Does your hospital identify criteria and procedures to modify the family visitation policy?
11.	Does your hospital have a contingency plan for being a secondary site for chemical agent release?
12.	Does your hospital have a plan to address behavioral health support needs for patients, staff, visitors, and their families?

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**Immediate and Intermediate Response**

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1.	Does your hospital have a protocol and criteria to determine the safety threat to your hospital from a chemical incident and what safety measures should be taken to protect patients, staff, and visitors?
2.	Does your hospital have a plan to send a representative to the local Emergency Operations Center?
3.	Does your hospital have a plan and procedures to rapidly initiate shelter-in-place, including: <input type="checkbox"/> Immediate shutdown of heating, ventilation, and air-conditioning systems? <input type="checkbox"/> Securing access to the hospital? <input type="checkbox"/> Limiting hospital access to designated secure screening points for staff and visitors entering your hospital? <input type="checkbox"/> Regularly reevaluating shelter-in-place vs. evacuation and coordinating decision making with local officials?
4.	Does your hospital have a Decontamination Plan that can be immediately activated and includes: <input type="checkbox"/> Provisions for gross decontamination of victims until full decontamination can be conducted? <input type="checkbox"/> A triage process to separate contaminated victims from non-contaminated persons presenting for care? <input type="checkbox"/> A procedure to secure the decontamination area? <input type="checkbox"/> A process to monitor that medically qualified and fit-tested personnel are available and assigned to use personal protective equipment and provide patient decontamination? <input type="checkbox"/> A process to specify the level of decontamination required and the ability to adapt to evolving situations? <input type="checkbox"/> A process to expand decontamination operations to provide for a large number of patients (i.e., doffing kits, etc.) including the ability to integrate community decontamination resources when available? <input type="checkbox"/> A process to contain or divert water run-off collection and disposal in conjunction with the Environmental Protection Agency, the local water authority, and procedures to appropriately notify such authorities when decontamination is activated?
5.	Does your hospital have policies and procedures for detecting and monitoring chemical levels in both the hospital and on people? If not, who would be contacted to provide this service, if needed?
6.	Does your hospital have a Communications Plan that addresses: <input type="checkbox"/> How your hospital receives timely and pertinent incident information from field command (e.g., chemical information, decontamination provided, recommendations)? <input type="checkbox"/> A procedure to provide pertinent incident information to the decontamination team, all treatment areas, security and the Hospital Command Center? <input type="checkbox"/> A procedure to notify field command of hospital decontamination location and ingress and egress routes for emergency medical services? <input type="checkbox"/> A procedure to notify the local Emergency Operations Center of operational status? <input type="checkbox"/> A procedure to receive information regarding the operational status of area hospitals? <input type="checkbox"/> A process to establish a media briefing area? <input type="checkbox"/> A procedure to provide scheduled media briefings in conjunction with local emergency management, the local Emergency Operations Center, and the Joint Information Center?

	<input type="checkbox"/> A plan to work with local emergency management or the local Emergency Operations Center to address risk communication issues for the public? <input type="checkbox"/> A process to identify patients and to notify family members?
7.	Does your hospital consult with pre identified resident experts, such as the Poison Control Center, and the Agency for Toxic Substances and Disease Registry to obtain needed assistance?
8.	Does your hospital have criteria for determining whether shelter-in-place or evacuation of your hospital is required?
9.	Does your hospital have a Fatality Management Plan that addresses: <ul style="list-style-type: none"> <li><input type="checkbox"/> Integration with local or state medical examiner or coroner?</li> <li><input type="checkbox"/> Preservation of evidence and chain of custody?</li> <li><input type="checkbox"/> Religious and cultural concerns?</li> <li><input type="checkbox"/> Management of contaminated decedents?</li> <li><input type="checkbox"/> Family notification procedures?</li> <li><input type="checkbox"/> Behavioral health support for family and staff?</li> <li><input type="checkbox"/> Documentation?</li> </ul>
10.	Does your hospital's Security Plan include: <ul style="list-style-type: none"> <li><input type="checkbox"/> A procedure to secure the hospital to manage the influx of contaminated and non-contaminated patients?</li> <li><input type="checkbox"/> Working with local law enforcement and public safety officers to preserve and secure evidence, contaminated patient belongings, and specimens?</li> <li><input type="checkbox"/> A procedure to interface with local, state, and federal law enforcement agencies to interview patients, gather evidence, and investigate the incident?</li> <li><input type="checkbox"/> Addressing the possibility that the perpetrators are among the injured?</li> </ul>
11.	Does your hospital consider the possibility of being a secondary terrorist target and plan for appropriate measures to protect the hospital?
12.	Does your hospital's plan address evidence preservation measures in cooperation with law enforcement and issues regarding transfer of contaminated patient belongings to law enforcement?

**Extended Response and System Recovery**

1.	Does your hospital have criteria to prioritize business continuity and recovery activities including: <ul style="list-style-type: none"> <li><input type="checkbox"/> Repair and decontamination of the hospital?</li> <li><input type="checkbox"/> Reevaluation of your infrastructure's ability to maintain and continue the medical mission?</li> <li><input type="checkbox"/> Restoration of communication and power systems?</li> <li><input type="checkbox"/> Communicating, educating, and monitoring of staff?</li> <li><input type="checkbox"/> Repatriation of evacuated patients?</li> <li><input type="checkbox"/> Restoration of the hospital and operations to normal?</li> </ul>
2.	Does your hospital have a plan to provide behavioral health support and stress management debriefings to patients, staff, and families, including obtaining services from local or regional resources?

3.	<p>Does your hospital have procedures for:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Reporting and documenting staff exposures and injuries?</li> <li><input type="checkbox"/> Addressing biohazardous and contaminated waste disposal?</li> <li><input type="checkbox"/> Cleaning up the decontamination area and any other contaminated areas for reopening?</li> </ul>
4.	Does your hospital have a continuing process to capture all costs and expenditures related to operations?
5.	Does your hospital have a process for submitting costs for disaster reimbursement from insurance carriers, as well as local, state, and Federal Emergency Management Agency disaster relief?
6.	Does your hospital have procedures to debrief patients, staff, and community partners?
7.	Does your hospital have Hospital Incident Management Team position depth to support extended operations?
8.	Does your hospital have a Business Continuity Plan for long term events?
9.	Does your hospital have procedures to collect and collate incident documentation and formulate an After Action Report and Corrective Action and Improvement Plan?