APPENDIX 3.5.1.7 CHEMICAL SURGE ANNEX

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1. INTRODUCTION

A chemical emergency occurs when a hazardous chemical is released and has the potential to harm people's health. The release of chemical can be intentional, such as a terrorist attack or unintentional, such as in a natural event (i.e. volcanic event) or an industrial accident.

1.1 Purpose

The Central MN Health Care Preparedness Coalition (CMHPC) Chemical Surge Annex provides guidance to support a coordinated health care response to a chemical event in which the number and severity of exposed or possibly exposed patients challenges the capability and capacity of Health Care Coalition (HCC) member facilities. The annex outlines suggestions in planning for, managing, and caring for patients during a chemical emergency.

This annex does not replace other county or local emergency operations plans or procedures; it builds upon the existing plans and their annex. The coalition recommends that members develop their own chemical response plan with input from medical providers. These plans should be shared with local public health and local emergency management partners.

The purpose of the plan is to:

- Identify the roles and responsibilities for health care, public health, local response agencies, emergency management, community, non-governmental, and local, state, federal and tribal partners in a chemical response in the region.
- Identify processes for containing contamination, decontaminating patients, and providing patient care.
- Identify processes to consider for patient placement, transfer protocols, and care.
- Identify the coalitions' role and procedures for sharing and/or prioritizing scarce resources as well as how those activities will relate to cross-regional and statewide efforts.
- The plan will also identify some specific chemical response resources that can support the response efforts.
- Identify the coalitions process for communications and coordination amongst membership and partners. To include initial coordination and information gathering to determine impact and needs
- Describe health care planning and response needs to include triage/screening and the alignment of the coalitions regional plan with local public health and emergency management plans.
- Identify potential treatment options
- Provide available training opportunities.
- Provide a list of subject matter experts (SME's) to be utilized when necessary.

This annex will NOT:

- Replace local level/facility plans
- Provide specific patient care treatment guidance

The annex will serve as a guide towards response.

1.2 Scope

The annex is part of the regional response plan and will reference pertinent annexes to the regional response plan. This plan includes concepts outlined by the National Incident Management System (NIMS) and will set common goals, strategies and terminology used in other regional plans.

This plan may be used to supplement local plans and will promote the coordination of a response with local, regional, and state agencies involved in the response. Coalition partners involved in the creation of this plan include local health care, local public health, and local emergency management. This document has been reviewed by the regional clinical advisor and the coalition members.

The annex will be reviewed annually and updated as necessary to ensure readiness to respond and to incorporate any lessons learned in previous response efforts.

This annex does not supersede the authorities of local, regional, state or federal response partners. It is considered a resource that can be considered in planning efforts and specifically identifies the role of the coalition in such a response.

1.3 Overview of Health Care Coalition and Situation

There have been no large-scale chemical emergencies in the Central region; however, hazardous chemicals travel through our region on a day-to-day basis via road and rail and are used in farming and industry. Planning and preparing to respond is imperative to a successful response if an event were to occur.

The likelihood of a large event occurring in the Central region is fairly minimal, however if an event were to occur a surge situation may be likely. At a minimum the Central region should consider activation of their facility-based surge plans.

The health care coalition has indicated via their hazard vulnerability analysis that a chemical incident is low. A plan that identifies the response to a chemical event is, however, necessary regardless of the type of event that occurs.

The risk of chemical exposures in the Central region include:

- The I-94 corridor which is a major transportation hub.
- Rail lines that are interspersed throughout its geography.
- Industry that utilizes a variety of chemicals in day-to-day operations.
- Farming.

Vulnerable populations in the region include – but are not limited to:

- Senior population – located in private residences or located in long term care facilities.
- Pediatric population
  - Schools located close to transportation hubs/industry.
- Individuals with limited access to transportation/evacuation options.
- Migrant workers
- Law Enforcement/Fire/First Responders.
- Transportation/industrial/farm workers – or workers handling chemicals.
- Healthcare workers.
- Language barriers
- College students
- People with physical and cognitive disabilities

1.4 Planning Assumptions

Planning assumptions for this plan include:

- Chemical events may be accidental (e.g., industrial, transportation accident) or intentional.
- Incidents may require prolonged response and extensive resource management challenges.
- The coalition annex does not replace the need for protocols at each hospital and EMS agency. It is essential for the healthcare plan with local fire, law enforcement and EMS personnel to identify the roles and responsibilities and discuss the respective expectations of all during a chemical incident response.

As members of the coalition, health care providers should understand that:

- Hospitals will need to have their own chemical response plan.
- Hospitals may need to shelter in place or evacuate in response to a chemical release or plume and would need to plan accordingly.
- Hospitals must have appropriate plans, PPE, and equipment to receive and decontaminate patients received from EMS as well as from self-referrals.

2. CONCEPT OF OPERATIONS

2.1 Activation

This plan may be activated during any chemical event that requires coordination between health care organizations and coalition partners, when the existing resources and plans are limited or inhibit the ability to adequately respond to the event.

Potential triggers to activate the Chemical Emergency Surge Annex include:

- Regional coordination to monitor or coordinate patient movement etc.
- Multiple counties affected by the event, requiring a coordinated response.
- Regional coordination required for risk communication, public information, and/or media response.
- Public health response to a community impacted by a chemical incident.
- Multi-agency response to chemical health threat.
- Notification by a local public health agency/community health board for the need for regional coordination of coalition members.
- Request for support from a healthcare facility related to a chemical event.

When the Regional Healthcare Preparedness Coordinator (RHPC) or a local health authority identifies that an event meets the triggers identified above and additional resources may be needed, this plan will be activated at the discretion of the RHPC or their designee. Regional or local partners, a local emergency manager, local public health, or a representative of another health or medical organization may request activation. Coalition staff should consider the likelihood that state and/or federal resources will be employed, the need or potential need for specialized technical assistance, and the status or activation forecast of the state Emergency Operations Center when determining whether or when to activate the Healthcare Multi-Agency Coordination system (HMAC) “Regional Medical Operations Coordination Cells (RMOCCs)” and the plan.

HMAC activation is likely, and activation protocol may be initiated. Based upon the situation – the RMOCC may be activated to support the response.

RHPC will coordinate with HMAC representatives to relay responsibilities, provide collected background data from assessments, and aid with priority tasks.

Refer to the Coalition Response Plan for further information regarding HMAC activation during a response.

2.2 Activation and Notification Flow

Refer to the Coalition base Response Plan – Section 2.3 for an in-depth description of the coalition activation and notification process.
Refer to Appendix 3.5.5. Regional Communications Plan, which specifically discusses the mechanisms in place to notify/communicate with coalition members and partners.

The region uses email, phone, a secure web chat, MNTrac, and 800 MHz radios to rapidly gather and

disseminate information to HCC partners.
The MDH All Hazards Response and Recovery Plan Healthcare Surge Annex outlines communication pathways between MDH-EPR and the eight regional HCCs.

Following notification, the RHPC and HMAC will identify the appropriate partners to notify.
Partners may include:

- Neighboring local public health agencies
- Local health care organizations/providers
- Local EMS
- Local emergency management
- Central Minnesota Health Care Coalition
- Minnesota Health Care Coalition collaborative members
- Cross-border health care partners and public health
- Minnesota Department of Public Health (preparedness and response)
- Other health partners as necessary

Upon notification to the above listed partners – additional notifications can be made by the local and state partners to:

- Homeland Security and Emergency Management
- 434th Chemical Company – Minnesota National Guard (ng.mil)
- State Response Teams - Chemical Assessment Teams (mn.gov)
- MN Department of Transportation
- US Environmental Protection Agency
- Federal Emergency Management Agency (FEMA)
- Federal Drug Agency (FDA)
- CDC/Assistant Secretary for Preparedness and Response

2.3 Roles and Responsibilities

COUNTY EMERGENCY MANAGEMENT AGENCY

- Provide knowledge, assessment data, requests, and other needs during incident.
- Lead local agency for incident coordination including activation and coordination of jurisdictional EOC as needed.
- Serve as point of contact for local resource requests and request resources that exceed local capabilities from the State.
- Request state declaration of emergency if needed.
- Disseminate public information via designated Public Information Officer.
- Coordinate volunteer and donations management.
- Establish a local shelter if needed.
- Work with local partners to establish a family assistance/reunification center if needed.
- Coordinate distribution of supplies from the coalition or other partners.
- Coordinate or facilitate meetings inclusive of county health care, public health and other agencies as needed.
- Work with fire, law and local emergency management to establish an evacuation zone if deemed necessary.
- Act as liaison between local, regional, state, and federal assets responding to the incident.
- Determine if there is a need for Community Reception Centers and collaborate with partners if

needed.

EMS SERVICES / PRE-HOSPITAL PROVIDERS

- Provide knowledge, assessment data, requests, and other needs during an incident.
- Lead local agency for first response, treatment, and patient transport.
- Interface with local hospitals and EOC to share information/status.
- Maintain appropriate staff in county EOC to receive and monitor notifications.
- Monitor the MNTrac system for any alerts related to diversions and patient movement.
- Determine if there is a need for Community Reception Centers and collaborate with partners if needed.
- Identify the need for an evacuation zone in collaboration with first responders including fire, law and local emergency management.
- Follow primary decontamination procedures and processes according to local plans established.

FRONTLINE HEALTH CARE FACILITIES

- Consider notification to the coalition of the need for support or for awareness purposes.
- Provide initial treatment and stabilization of any victim/patient transferred or presenting to their facility.
- Follow normal organizational referral protocols and transport criteria with respect to patients.
- Follow decontamination procedures and process according to facility and local plans established.
- Identify the need for additional staff supplies, pharmaceuticals, and specialized equipment.
- Ensure that individuals with access and function needs and patients with limited language proficiencies have access to appropriate medical care and support services.
- Determine the appropriate distribution of patients-injured, infected, and psychologically impacted.
- Notify the jurisdictional EOC when a surge of patients threatens to overwhelm their facility.
- Initiate internal emergency operations plans and call staff back to work, as needed.
- Continue to provide triage for patients, even when at capacity, but may limit treatment to the stabilization of critically ill or injured patients and may transfer stable patients to other facilities.
- Analyze the facilities capabilities to accept and treat patients over a protracted period.
- Track their own disaster/incident-related expenditures and coordinate with local, state, and federal organizations for reimbursement activities, if applicable.
- Monitor for and acknowledge all alerts, notifications, and communications during an incident and provide information as requested to local, regional, and state partners.
- Update MNTrac bed availability as requested by coalition or state agencies.
- When situations of scarce resources, follow guidelines from the State or Federal agencies.
- Consider activation of continuity of operation plans.
- Participate in Regional meetings and respond appropriately to requests made from the coalition and/or the state during the response.

LOCAL PUBLIC HEALTH DEPARTMENT

- Establish and monitor surveillance systems.
- Work with local EM and partners to establish a reunification "family assistance" center if applicable.
- Determine if there is a need for Community Reception Centers and collaborate with partners if needed.
- In coordination with local EM and local health care – disseminate appropriate messaging to community members.
- Ensure that individuals with access and function needs and patients with limited language proficiencies have access to appropriate medical care and support services.
- Provide staffing support to other impacted local public health departments, as needed.
- Follow local policies and direction on tracking disaster/incident related expenditures.
- Maintain appropriate users in county EOC to receive and monitor notifications.
- Work with Minnesota Department of Health and share information with partners.
- Responsible for open and closed points of dispensing for communities.

CENTRAL MN HEALTH CARE COALITION

- The coalition RHPC is the point of contact for the region in support of local response needs.
- Supports a regional health response.
- Activate the Chemical Emergency Surge Annex when requested.
- Support information sharing and coordination of activities between coalition members.
- Support resource coordination between facilities in the region.
- Coordinate regional medical response and recovery preparedness, including planning, training, and exercises.
- Support the Local Emergency Managers and Local Public Health as they create a family assistance center and consider activation of the Regional HMAC to support and review any requests for assistance with information sharing, PPE, and supply acquisition to include staffing support if necessary.
- Consider activating the RMOCC plan.
- Work with local and regional partners to align plans and procedures and identify potential capability and resource shortfalls.
- Synthesize data (case reports, medical resource availability, etc.) at a regional level to improve preparedness and situational awareness.
- Develop regional coordination systems and maintaining these systems.
- Consider activation of the Regional Patient Movement plan to support local health care.
- Identify areas that the region can support the resource needs related to a radiation event and identify ways and means of obtaining additional items.
- Provide situational and operational status reports in response to the incident.
- Work with cross regional partners in the Minnesota Health Care Coalition Collaborative.
- Participate in state response meetings and advocate for the needs of the health care facilities and other members of the regional coalition.
- Support local emergency management, local public health and EMS if they feel a Community Reception Center or Evacuation Center are deemed necessary.

CENTRAL MN HMAC

- Communicate with regional and local stakeholders within their discipline area to sense for concerns or areas where support may be needed through emails, conference calls, or other appropriate methods.
- Assess expected medical response and treatment activities to identify potential areas where assistance may be needed.
- Provide information and safety protocols specific to the chemical response.
- Coordinate with the state to develop or refine PPE guidance in a format that can be rapidly distributed and easily understood by partner organizations.
- Ensure that information is shared with entities that they represent.
- Coordination of movement of resources.
- Coordinate or support the employment of mutual aid assets.
- Coordinate the collection of data from facilities and other entities.
- Ensure situational awareness by collecting essential elements of information from LHDs, health care facilities and other providers.
- Identify priority health care related Critical Infrastructure/Key Resources (CI/KR) and assess potential impacts.
- Consider availability of public health tools and resources, as well as situation-specific efficiency and accessibility of facilities and other infrastructure.
- Supporting behavioral health needs within the region, upon request.
- Coordinate all medical surge issues with the facilities.
- Coordinate surge protocols for triage, transport, treatment.
- Support decompression of critical hospital beds.
- Consider activating the RMOCC plan
- Coordinate with hospitals/facilities to identify safe and reasonable methods to clear beds.
- Considerations for at-risk individuals and those with medical needs during a potential surge.
- Coordinate logistics and tracking of assets.
- Facilitate consultations with appropriate subject matter experts or medical specialists regarding patient care guidance.
- Coordinate patient transportation issues with EMS Teams (Transport Officer) through Central EMS.
- Monitor medical and medical transport systems.
- Collaborate with appropriate entities regarding patient movement and placement/destination determinations.
- Support identification and deployment of additional or specialized resources as needed.
- Coordinate the need for large-scale patient movement - moving many patients from the impact area.
- Manage key information to support situational awareness and to improve decision making within the coalition and by LHDs, health care providers, and other partners to ensure equitable distribution of health care services.

MINNESOTA DEPARTMENT OF HEALTH (MDH)

- Lead state agency for health-related issues. Works closely with Minnesota Homeland Security Emergency Management for incident coordination and consider activation of the State Emergency Operations Center
- Request state disaster or public health emergency declarations and governor's emergency orders as required to support response
- Request CMS 1135 waivers as required during response to allow patient billing when usual conditions cannot be met
- Request specific emergency orders/actions by the Governor's office if needed
- Provide health related guidance and recommendations for clinicians, local and tribal

public health, and community members

MINNESOTA HOMELAND SECURITY AND EMERGENCY MANAGEMENT

- Lead state agency for incident coordination
- Serve as state point of contact for resource requests
- Request State declaration of emergency if needed
- Liaison with FEMA.

2.4 Logistics

2.4.1. Space

Responding to a chemical incident requires adequate space to operationalize decontamination protocols. This includes:

- Emergency Operations Center (EOC)
- Security zone
- Decontamination area (may be multiple locations i.e. scene, hospital)
- Triage/treatment zone
- Family reunification center
- Family assistance center
- Community reception center
- Decontamination waste cleanup area
- Media room
- Evacuation zone/center

Health care facilities should plan accordingly to address these factors.

Local health care providers are encouraged to work with their local public health and local emergency management to identify appropriate locations for support facilities.

The HCC will support local efforts by activation of the HMAC; either virtually or in person and will also support the local EOC.

2.4.2. Staff

Staffing shortages may be a result of patient surge, staff turnover, staff illness, or illness/exposure to a family member. In a small-scale response, the coalition may be able to arrange staff sharing support among health care providers within the region. Refer to the Regional Allocation Plan and Coalition MOU for more details regarding staff sharing.

Staff shortages are not limited to patient care providers. Back up plans need to consider support services such as dietary, housekeeping and maintenance. The HMAC partners may also be able to support staffing assistance requests for those non-patient care roles.

A variety of staffing alternatives may be used in situations where standard staffing is not available, health care facilities should consider:

- Reaching out to local partners (emergency management, local public health)
- Activation of decontamination teams (internal, local fire departments, first responders, etc.)
- Protocols for revision of staff work hours
- Cross-training staff
- Callback of off-duty personnel

- Use of non-clinical staff
- Local Medical Reserve Corps
- Untraditional patient care providers (e.g. family members, nonprofessional personnel such as city employees)
- Surge plans for home care agencies and clinics
- Tiered Staffing / Team Nursing
- Request the activation of 434th Chemical Company – Minnesota National Guard (ng.mil) or State Response Teams - Chemical Assessment Teams (mn.gov) through the local emergency manager.
- Reassigning clinical staff roles (ex. Nurse educator now provides patient care)

Health care facilities are encouraged to develop a Hospital Emergency Response Team (HERT) who are trained in decontamination – including setting up a decontamination zone at the facility and having the appropriate PPE available for staff. This team should be trained and exercised annually. The HCC offers annual HERT training for its membership. The HCC maintains relationships with multiple healthcare providers and HERT teams regionally. Requests for staffing support can be made by reaching out to the coalition.
The OSHA 29 CFR 1910.120 standard which discusses hazardous waste and emergency response requires hospitals to provide training for all staff who have the potential for exposure to hazardous waste and/or responsible for decontamination processes.

Health care facilities are encouraged to develop arrangements with subject-matter experts.

The MDH Chemical Emergencies website contains multiple resources for planning, education and just-in-time training tools online at: Chemical Emergencies - MN Dept. of Health (state.mn.us), including direct links to:

- US Dept. of Health and Human Services – Chemical Hazards Emergency Medical Management (Triage Guidelines - CHEMM (hhs.gov))
- Center for Disease Control and Prevention – Chemical Emergencies (Chemical Emergencies (cdc.gov))
- Agency for Toxic Substances and Disease Registry (Managing Hazardous Materials Incidents | ATSDR (cdc.gov))

Additionally, the MDH Burn Surge website contains just-in-time training resources online: Minnesota Burn Surge - Minnesota Dept. of Health (state.mn.us). These include videos, quick references to determine burn depth and surface area, order sets, and Resource and Triage Cards in the Patient Care Strategies for Scarce Resource Situations.

See Addendum A: References and Emergency Contacts for Help During Chemical Emergencies

2.4.3. Supplies

Response to a chemical event can severely impact the resources available. These resources include but are not limited to:

- Staff
- PPE
- Treatment/countermeasures
- Bed availability

The Coalition maintains a small cache of items that may be available for redistribution during times of scarcity. This includes Powered Air Purifying Respirators (PAPRs), decontamination suits/supplies and decontamination tents. Facilities can contact the coalition and request assistance from the coalition or other

facilities. If the supply or resource is located and available, arrangements will be made to move the resource. The receiving facility is responsible for the reimbursement, if applicable.

The requesting site must exhaust all means to procure the resource on their own. The requestor may be required to show proof that the item/resource is not available. This support is not to be used due to increased costs of resources. All health care partners are strongly encouraged to plan with their suppliers and support services in advance of an emergency. Facilities should consider including a clause to increase par levels during emergent situations.

Refer to the Coalition Response Plan - Appendix 3.5.6 Coalition Resource Plan.

Access to treatments and countermeasures may also be limited. Treatment considerations may need to be based on availability. Health care facilities are encouraged to develop plans to address scarcity.

MDH Crisis Standards of Care - Strategies for Scarce Resource Situations

CHEMPACK

CHEMPACKs are containers of nerve agent antidotes and supplies that can be quickly accessed by first responders and medical professionals in a chemical incident. These antidotes can quickly be administered in lifesaving situations during the release of nerve agents in a public health emergency.

If a large-scale chemical/nerve agent incident is suspected or confirmed, the CHEMPACK can be activated as a resource to treat approximately 1000 patients for a hospital container or 454 patients for an EMS container.

The stockpiled medications are intended for emergency treatment of poisoning by agents classified as organophosphates used in industrial and agricultural activities plus weaponized chemicals/nerve agents such as Sarin and VX. The CHEMPACK medications are stored in a secured container with temperature, humidity, and expiration dates electronically monitored by ASPR.

Hospital CHEMPACK Container for 1000 Patients

Asset	Unit Pack	Cases	QTY
Diazepam 10mg auto-injector	150	1	150
Diazepam 5mg/ml vial 10ml	50	3	150
Seizalam (Midazolam) 5mg/ml vial	50	10	500
Atropen 0.5mg	144	1	144
Atropen 1.0mg	144	1	144
Atropine Sulfate 0.4mg/ml 20ml	100	11	1100
Pralidoxime 1gm inj 20ml	276	12	3312
Sterile water 20cc vials	100	1	100

EMS CHEMPACK Container for 454 Patients

Asset	Unit Pack	Cases	QTY
Diazepam 10mg auto-injector	150	2	300
Seizalam (Midazolam) 5mg/ml vial	50	1	50

Asset	Unit Pack	Cases	QTY
Atropen 0.5mg	144	1	144
Atropen 1.0mg	144	1	144
Atropen 2mg	136	9	1224
Atropine Sulfate 0.4mg/ml 20ml	100	1	100
Pralidoxime 1gm inj 20ml	276	1	276
Pralidoxime 600mg Auto Injector	240	5	1200
Sterile water 20cc Vials	100	2	200

The coalition has a Chempack container within the region. The exact location of the Chempack is not made public for security purposes. (Strategic National Stockpile CHEMPACK Program (state.mn.us)) Access to the Chempack is via a request from the Minnesota Department of Health to the United States Health and Human Services Secretary's Operations Center (SOC) or Center for Disease Control Emergency Operations Center (EOC). The site that holds the Chempack maintains a plan for activation and will work with local, regional, state and federal partners if such an activation is requested.

2.5 Operational Medical Care

The HCC encourages its partners to have well-thought-out plans, obtained through reputable medical experts. The HCC is not made up of expert medical personnel for chemical events and has no relationships with such entities. The annex, however, has been reviewed by the clinical advisor.

2.5.1. Triage and Screening

According to US Department of Health & Human Services – Chemical Hazards Emergency Medical Management (CHEMM):

- Utilize the standard START/Jump START Algorithm for Mass Casualty Events or SALT Mass Casualty Triage Algorithm established for pre-hospital/hospital triage.
- In each category prioritize a child, or a pregnant woman over a non-pregnant woman.
- Expectant categories in multi-casualty events are those victims who have experienced a cardiac arrest, respiratory arrest, or continued seizures immediately. Resources should not be expended on these casualties if there are large numbers of casualties requiring care and transport with minimal or scant resources available.
- If there are chemical exposure situations which may cause delayed but serious signs and symptoms, then over-triage is considered appropriate to the proper facilities that can observe and manage any delayed onset symptoms.
- Mild/moderate casualty: self/buddy aid, triaged as delayed or minimal and release is based on strict follow up and instructions.
- Check triage tag/card for any previous treatment or triage.
- Survey for evidence of associated traumatic/blast injuries.
- Watch for sweating, labored breathing, coughing/vomiting, secretions.
- Severe casualty triaged as immediate if assisted breathing is required.
- Blast injuries or other trauma, where there is question whether there is chemical exposure, victims must be tagged as immediate in most cases. Blast victim's evidence delayed effects such as ARDS, etc.

Key activities for Triage include:

- Determining if a patient had direct contact (e.g., splash or skin contact) and the relative distance from areas with the highest concentrations (e.g., near the source of a leak or spill) can guide triage decisions, just like principles of radiation dose delivery (i.e, time, shielding, distance) apply to many mass chemical events.
- Obtaining history about the time a patient was in a toxic environment and the distance from the areas of greatest concentration can help to stratify patients into high-risk and low-risk groups. This approach is similar to using an account of the mechanism of injury to anticipate injuries even before the clinician touches the trauma patient.
- Understanding the different mechanisms of trauma (e.g., speed of the vehicle, presence of fatalities in the same accident, or height of a fall) and the predictable pattern of injuries that may result will influence the patient's evaluation and affect care. This approach is not an absolute solution for poisonings but is potentially valuable for mass chemical exposures whereby triaging patients is critical to quickly find those most at risk for serious illness.
- In addition to triage, the same principles can guide treatment strategies for hazardous chemical exposures.
- The most basic treatment objective is to limit exposure time and decrease concentration as rapidly as possible. Moving rapidly away from a vapor cloud in an accidental release is common sense and illustrates the point of decreasing concentration and duration of exposure. Similarly, deluging with water after splashing a concentrated sulfuric acid on the skin will decrease the chemical's concentration and the duration of exposure.

2.5.2. Patient Care/Management

Hospitals/clinics/EMs are encouraged to develop their own chemical response plan with input from their medical providers. These plans should contain surge activity, prioritization for treatment, decontamination measures, patient movement/tracking, contamination, palliative care, and how to move from conventional to contingency to crisis care and back, as the situation requires. Resources should be readily available for just-in-time training for health care providers.

The HCC will support local efforts by sharing information and resources as available. The coalition will not supersede the role of the locals during the response but will act as a liaison between the local response and state and federal partners if requested. Patient movement decisions will be made at the local level in conjunction with the receiving facilities. Communications, such as MNTrac Bed Alerts, will assist with identification of bed availability in the region and throughout the state.

The coalition patient tracking plan may be activated – refer to Appendix 3.5.2. Patient Tracking Plan.

2.5.3. Treatment

Health care providers should consider the specific circumstances of each patient encountered during an emergency and use their clinical judgment in providing care.

There are several resources available that discuss available treatment options. Health care providers are encouraged to explore these sites prior to an event and establish baseline protocols that can be enacted if/when an event occurs.

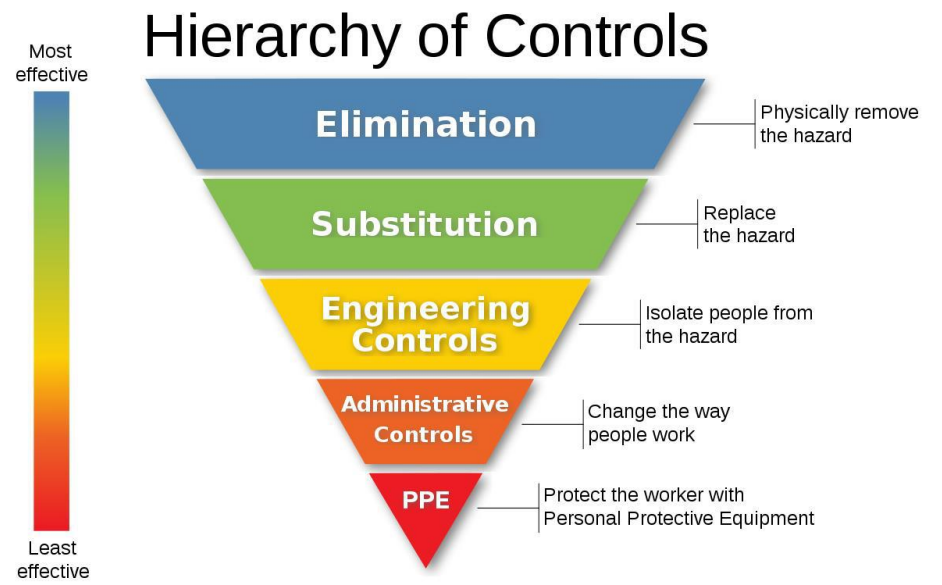
- In the event of a chemical emergency, Poison Control should be consulted at 1-800-222-1222.
- Agency for Toxic Substances and Disease Registry
- Chemical Hazards Emergency Medical Management – Information for Hospital Providers

In a chemical event the HCC can work with other HCCs to procure medications, equipment, transport, and hospital beds. The HCC will work with its partners to disseminate information, share resources, and liaison between the membership, local, State and Federal partners.

2.5.4. Safety and Control Measures

Controlling exposures to occupational hazards is the fundamental method of protecting workers.

Traditionally, a hierarchy of controls has been used as a means of determining how to implement feasible and effective control solutions.



Source: https://www.cdc.gov/niosh/topics/hierarchy/default.html

Standard precautions include a group of infection prevention practices that apply to all patients in any setting where health care is delivered.

Standard precautions include:

- Hand hygiene
- PPE use
- Safe injection practices
- Safe handling/cleaning of equipment and environmental surfaces
- Respiratory hygiene and cough

Administrative controls include:

- Workplace safety programs
- Infection control and prevention protocols
- Plans, procedures, algorithms, checklist
- Although not necessary for a radiological response – ensuring that healthcare providers are up to date on their vaccinations is evident of an administrative control. (ex. Tetanus)

The National Institute of Occupational Safety & Health (NIOSH) have Emergency Response Cards which outline the appropriate personal protective equipment and actions for the different types of agents. These cards also break down the level of exposure and the role of the individuals – whether they are in the red zone (high exposure area) to the green zone (low exposure area).
NIOSH AGENT LIST EMERGENCY RESPONSE CARDS

There are phone applications for first responders that will aid with identifying the appropriate level of PPE necessary for response such as *ERG for Android.*

LEVELS OF PPE

Personal protective equipment is divided into four categories based on the degree of protection afforded.

Level A protection should be worn when the highest level of respiratory, skin, eye and mucous membrane protection is needed. A typical Level A ensemble includes:

- Positive pressure (pressure demand), self-contained breathing apparatus (SCBA) (NIOSH approved), or positive-pressure supplied air respirator with escape SCBA.
- Fully encapsulating chemical protective suit.
- Gloves, inner, chemical resistant.
- Gloves, outer, chemical resistant.
- Boots, chemical resistant, steel toe and shank; (depending on suit boot construction, worn over or under suit boot.)

Level B protection should be selected when the highest level of respiratory protection is needed, but a lesser level of skin and eye protection is needed. Level B protection is the minimum level recommended on initial site entries until the hazards have been further identified and defined by monitoring, sampling, and other reliable methods of analysis, and equipment corresponding with those findings utilized. A typical Level B ensemble includes:

- Positive-pressure (pressure-demand), self-contained breathing apparatus (NIOSH approved), or positive-pressure supplied air respirator with escape SCBA.
- Chemical resistant clothing (overalls and long-sleeved jacket, coveralls, hooded two-piece chemical splash suit, disposable chemical resistant coveralls.)
- Gloves, outer, chemical resistant.
- Gloves, inner, chemical resistant.
- Boots, outer, chemical resistant, steel toe and shank.

Level C protection should be selected when the type of airborne substance is known, concentration measured, criteria for using air-purifying respirators met, and skin and eye exposure is unlikely. Periodic monitoring of the air must be performed. A typical Level C ensemble includes:

- Full-face or half-mask, air-purifying respirator (NIOSH approved).
- Chemical resistant clothing (one piece coverall, hooded two-piece chemical splash suit, chemical resistant hood and apron, disposable chemical resistant coveralls.)
- Gloves, outer, chemical resistant.
- Gloves, inner, chemical resistant.
- Boots, steel toe and shank, chemical resistant.

Level D protection is primarily a work uniform and is used for nuisance contamination only. It requires only coveralls and safety shoes/boots. Other PPE is based upon the situation (types of gloves, etc.). It should not be worn on any site where respiratory or skin hazards exist.

DECONTAMINATION

Decontamination involves not only the victims but those that are responding to and taking care of patients from the event.

Decontamination activities will occur at the scene by EMS and fire agencies and will also occur at the receiving healthcare facilities. Healthcare facilities should have decontamination plans to address how to do mass decontamination and triage of individuals exposed to chemical materials.

Decontamination of individuals exposed, patients, and emergency response workers, their clothing, and any equipment, including PPE, is essential to limit exposure to the chemicals and prevent spread of the chemicals.

On-scene decontamination facilities should be established that could:

- Provide an area to remove contaminated clothing.
- Provide showers to shampoo hair, wash skin, and put on clean clothes.
- Store contaminated waste (including clothing and equipment) at a safe distance from people and animals.

Employers should refer to interagency resources that provide guidance on decontamination procedures, including:

Protective Action Guides (PAGs) | US EPA

Some excellent resources for decontamination include:

PRISM: Primary Response Incident Scene Management

Patient Decontamination in a Mass Chemical Exposure Incident (Dept of Homeland Security)

WASTE MANAGEMENT

Health care organizations will work through their normal vendors and channels to ensure all waste produced in the decontamination process is handled and disposed of appropriately.

- In small events, the collection and containment of contaminated effluent water in appropriate containers may be feasible. This includes large barrels and plastic bags.
- Sampling and suitable disposal of contaminated water may be performed later.
- In large events, collection of wastewater may not be feasible.
- Clothing/personal items must be placed in plastic bags and sealed.

2.5.5. Fatality Management

Exposure to chemical materials can cause injury and death. It is important for medical certifiers such as medical examiners and coroners to understand the health effects of the chemical so that they can accurately determine the illnesses or injuries that caused the death.

Deaths from chemical exposure may be initial or delayed. Initial deaths are related to the actual event and can include respiratory failure and burns. Delayed deaths can include respiratory conditions, burns, exasperations of chronic conditions, and a combination of injuries. Handling decedents that have been exposed to chemicals requires appropriate safety measures for staff.

Counties should follow their local guidelines with coalition support.

Refer to the Regional Response Plan - Appendix 3.5.1.3 CMHPC Mass Fatality Planning

At any time, the counties can request assistance from The Minnesota Office of the State Medical Examiner. The State Funeral Directors Association may also provide needed supplies, equipment, vehicles, and personnel. If called upon, the State Funeral Directors Association staff are there to assist the Medical Examiner only; they do not work under any local response agency.

The emergency manager and public health may establish family assistance centers around the event and develop plans for those centers.

2.5.6. Transport

Treatment of a patient with severe medical conditions must be considered prior to decontamination as the delay of treatment will directly impact the success of recovery. This requires first responder units to have the necessary PPE to protect themselves so that they can provide the necessary care.

Transporting a patient who has not been decontaminated:

- Increases the risk to the Emergency Medical Services (EMS) crew
- Takes the rig out of service until it can be decontaminated
- Requires notification to the receiving facility so that appropriate measures can be taken to protect receiving staff

Transportation considerations include keeping already-contaminated rigs in use to transport additional contaminated patients from a scene to the hospital – ideally in a mass casualty situation.

Consideration should be made to ensure that there are enough non-contaminated vehicles available to transport the decontaminated patients either related to the incident or not related to the incident.

During a patient surge situation, emergency medical services (EMS) may be forced to transport patients longer distances for higher levels of care. They may also need to transport patients from higher-acuity facilities to lower-acuity facilities to increase capacity of the higher-level facilities. The process of level loading involves moving patients from lower to higher level care centers and moving patients from facilities that are full to those that have capacity.

Exposed individuals may self-present to a medical facility or require transportation. Should an exposed patient present at a hospital, the patient may need to be transported to a different hospital; one designated to receive the patients from the event. If somebody is determined to be a case, contaminated material may need to be removed from locations visited by the person, and further environmental decontamination may be required. Pets/service animals also may need to be cared for and monitored for symptoms.

Incident command on scene should coordinate with the responding transportation agencies as appropriate. This may include EMS, bus transports, non-emergent medical transport agencies as well as private vehicles.

The HCC will work with the Regional EMS representative and support requests for information and resources as applicable.

2.5.7. Deactivation and Recovery

As in any response, demobilization and recovery planning should begin immediately.

Patients with chemical exposure may require long term treatment/support – depending upon the type of exposure and amount of exposure.

The behavioral health response may also be extended as these situations are outside of normal day-

to-day threats.

As local health care facilities, local public health, and local emergency management monitor the coordination and response, they will determine when the response concludes. Consideration will need to include regional, state, and federal decision-making processes as well.

2.6 Special Considerations

2.6.1 Behavioral Health

During a chemical event, a range of mental health, chemical abuse (behavioral health), and stress management problems may surface. The health care response can include working long hours, dealing with issues that are beyond their normal day-to-day practice, and suffer from isolation from support networks.

The State of MN developed a Regional Behavioral Health Coordinator position during the COVID-10 response. Regional Behavioral Health Coordinators are disaster behavioral health subject-matter experts who engage in outreach and educational activities within each of the public health regions across the state to facilitate the resiliency and recovery of survivors and responders from disasters, terrorism, and public health emergencies.

Behavioral health services are limited during the best of times. Access to inpatient behavioral health beds is difficult. Hospitals are often forced to board behavioral health patients waiting for inpatient services.

Minnesota Department of Health Disaster Behavioral Health and Emergency Preparedness

2.6.2 Pediatric and At-Risk Populations

As a rural health care coalition our whole community is considered at-risk. There is an overall lack of services due to geography and availability of limited resources. One example is that the number of EMS agencies serving a large geographical area often leads to long wait times, long transportation times and limited resources for higher acuity needs.

Pediatric patients may have a higher level of external and internal exposure levels due to shorter and smaller body structure and organs. Facilities' plans should address the specific needs of this population.

Centers for Disease Control and Prevention: Chemical Emergencies and Children

All coalition planning involves ensuring that all have equal access to the appropriate care. Considerations are given to those individuals who require resources such as those with language barriers, mobility issues, homelessness, communities of color and the LGBTQI+ population. Many health care facilities and local public health agencies within the coalition have staff available that may be able to assist with translating or have recommendations for language services.

All coalition members are encouraged to include access and functional needs in their planning efforts.

2.6.3 Communications

Essential elements of information (EEI) are any critical information required by coalition members to ensure that they can respond to any event. This allows members to make informed decisions. The EEI is specific to the event, and it is recommended that the elements be written prior to the event so when the event occurs the information is available.

To ensure situational readiness during a response to chemical event – the following EEI, at a minimum, should be considered for health care organizations and response partners.

Health care Organizations	Critical Partners
• Facility operating status	• School-related data
• Facility structural integrity	• Road closures
• Decontamination process/needs/resources	• Critical infrastructure status (e.g., electrical, sewer, water)
• Status of critical medical services (e.g., trauma, critical care)	• EOC status
• Critical service/infrastructure status (e.g., electric, water, sanitation, HVAC)	• Local declarations
• Bed or patient status/patient tracking	• Public information
• Equipment, supplies, medications, vaccine status or needs	• Evacuation/shelter-in-place operations/reunification "family assistance" centers
• Staffing status/staff safety	
• Emergency Medical Service (EMS) status	

Refer to the Regional Response Plan – Appendix 3.4.2 Essential Elements of Information

EEI and data sharing among coalition members and response partners is critical for a successful response. Information gathering will be sporadic throughout the response and the information will change frequently as more information is obtained.

Regional situational awareness will use the processes outlined in Appendix 3.5.5 Regional Communications Plan.

The coalition's primary role in a response is information sharing. The Coalition will receive, collect, organize, interpret, and assess information on the incident and its actual and potential impact on the region. Sources of information may include local, state, federal, and international public health agencies, medical providers, response partners, and subject matter experts.

The frequency of the situation report will be event-driven.

Coalition members are responsible for reporting issues that may impact local or regional health care delivery. If the local/county partners are aware of impacts to health care organizations, they should also notify the regional coordinator or designee. It is understood that health care organizations may or may not elect to notify the coalition and/or that notification may be delayed, depending on the situation.

Response data and/or EEI may be gathered by the coalition and reported to the state as requested.

During the response, local health care may request data to support response needs by the state. The State of Minnesota may utilize the MNTrac platform or RedCap surveys to obtain information for health care. It is essential that health care members respond appropriately to these data requests. The coalition will support the state by providing guidance on reporting the data as requested.

2.6.4 Jurisdictional – Specific Considerations

The Central region is located north of the Twin Cities – Metropolitan area. The I-94 is a major interstate that runs east/west, also has I-35 which runs north/south. The eastern border of the region borders Wisconsin. The Central region has a strong working relationship with the West Central region.

APPENDICES

3.1 Training and Exercises

Facilities should regularly test their plans and communication methods with the staff to ensure the staff knows what to do in a real-world incident.

OSHA letters of interpretation specify that hospitals must provide HAZWOPER First Responder Operations Level training to first receivers who are expected to decontaminate victims or handle victims before they are thoroughly decontaminated (OSHA, 2003, 2002b, 1999, 1992c, 1991a). This level of training is appropriate for anyone with a designated role in the Hospital Decontamination Zone. Training requirements for First Responder Operations Level appear under 29 CFR 1910.120(q)(6)(ii), which indicates a minimum training duration of 8 hours and outlines topics to be covered (competencies the employee must acquire). Both the required competencies and training time were recently confirmed in an interpretive letter (OSHA, 2003).

The coalition provides four Hospital Emergency Response Trainings (HERT) for first receivers/decontamination yearly and can customize trainings for facilities on request. These training courses meet the requirements outlined by OSHA. The training courses are virtual and can also be provided in person on request.

Health care facilities are encouraged to participate in the training programs offered by the Center for Domestic Preparedness – Anniston, Alabama to ensure staff/decon teams are prepared during a CBRNE event.
Healthcare Emergency Response Operations for CBRNE Incidents - Center for Domestic Preparedness (dhs.gov)

3.2 Legal Authorities

The regional response plan has no authority and serves as a resource guide for its' membership only. Membership is encouraged to work with their legal departments when establishing their facility level plans.

3.3 Additional Resources/References

MDH maintains Chemical Emergencies - MN Dept. of Health (state.mn.us) website with multiple planning, education and response resources for health care coalitions, health care facilities, and EMS.

If the incident is catastrophic and the affected HCC forecasts state resources will be depleted and/or surge capacity is exceeded, a request can be made to MDH-EPR to escalate the plan beyond state borders to inter-state partners through the Great Lakes Healthcare Partnership (GLHP) existing plans and procedures. The GLHP is the U.S. Department of Health and Human Services (HHS) Region V coalition.

In response to a national disaster HHS-ASPR will lead the medical portion of the federal response and activate the National Disaster Medical System (NDMS). NDMS will distribute patients for definitive medical care across the United States to NDMS participating hospitals.

Agency for Toxic Substances and Disease Registry

Managing Hazardous Materials Incidents

Toxicological and Public Health Professionals | Toxic Substance Portal | ATSDR (cdc.gov)

Toxic Substances Portal | ATSDR (cdc.gov)

American Academy of Pediatrics

Chemical-Biological Terrorism and Its Impact on Children

ASPR TRACIE:

Access and Functional Needs | ASPR TRACIE (hhs.gov)

Chemical Emergency Considerations for Healthcare Facilities (hhs.gov)

Center for Disease Control and Prevention

Chemical Emergencies

Medical Countermeasures.gov

PRISM: Primary Response Incident Scene Management

Minnesota Department of Health

Chemical Emergencies

Strategic National Stockpile CHEMPACK Program - MN Dept. of Health (state.mn.us)
Strategic National Stockpile CHEMPACK Program (state.mn.us)

Crisis Standards of Care - Minnesota Dept. of Health (state.mn.us)

Hazardous Materials Exposure Guide

Patient Care Strategies for Scarce Resource Situations (state.mn.us)

Regional Behavioral Health
https://www.health.state.mn.us/communities/ep/behavioral/rbhc.html

Minnesota Department of Public Safety

State Fire Marshal - Chemical Assessment Teams

State Emergency Response Teams at a Glance (mn.gov)

Minnesota National Guard

434th Chemical Company

US Department of Health and Human Services

Chemical Hazards Emergency Medical Management

Chempack

US Department of Homeland Security

Healthcare Emergency Response Operations for CBRNE Incidents - Center for Domestic Preparedness (dhs.gov)

US Department of Transportation – Pipeline and Hazardous Materials Safety Administration

Emergency Response Guidebook - 2020 PDF

US Food & Drug

Products Approved for Chemical Emergencies

Medical Countermeasure Monitoring and Assessment

Date sent to membership	Method of notification	Amendments made	Approval received from membership
11/1/2023	Email	Draft created/recommended changes adopted/finalized	Approved by membership 11/30/2023
3/5/2024	Email	Made changes recommended by MDH	Approved by membership