



# MDH Extreme Cold Emergency Plan **2017 Version 1.0**

November 14, 2017 through April 2, 2018

Maryland Department of Health

Larry Hogan  
Governor

Boyd K. Rutherford  
Lt. Governor

Dennis Schrader  
Secretary  
Maryland Department of Health

Jinlene Chan, M.D., MPH, FAAP  
Acting Deputy Secretary for Public Health Services  
Maryland Department of Health

Howard Haft, M.D., MMM, CPE, FACPE  
Deputy Secretary for Public Health Services  
Maryland Department of Health

Sherry Adams, RN, BSN  
Director, Office of Preparedness & Response  
Maryland Department of Health

# Contents

Summary ..... 3

Definitions..... 3

Maryland Regulations on Power Termination ..... 5

Phase 2: Pre-Event ..... 6

Phase 3: Extreme Cold Event – Wind Chill Advisory ..... 7

Phase 4: Extreme Cold Event – Wind Chill Warning..... 8

Phase 5: Complex Cold Emergency..... 9

Phase 6: Post-Winter..... 10

***Record of Changes***

<b>Date</b>	<b>Description</b>	<b>Draft Number</b>
October 2017	Revised Draft prepared	Draft Version 1.0

***Organizational Acronyms***

- MDH - Maryland Department of Health
- DHS - Maryland Department of Human Services
- EMA - Emergency Management Agency
- LHD - Local Health Department
- MDoA - Maryland Department of Aging
- MEMA - Maryland Emergency Management Agency
- MIEMSS - Maryland Institute for Emergency Medical Services Systems
- NWS - National Weather Service
- OCME - Office of the Chief Medical Examiner
- OHCQ - Office of Health Care Quality
- PSC - Public Service Commission

## Summary

### *Purpose*

The MDH Extreme Cold Emergency Plan, developed by the Maryland Department of Health (MDH), guides MDH actions during an extreme cold event, as defined below. This plan also provides guidance for Local Health Departments (LHDs) to support them as they fulfill their roles; however, it does not mandate that LHDs perform the suggested actions described.

### *Local Health Department Actions*

All actions listed for LHDs in this plan are suggestions. Local jurisdictions each handle extreme cold differently and the recommendations included here may not be applicable or practical for all health departments or may be fulfilled by a different organization at the local level.

## Definitions

*Extreme Cold Event* – An extreme cold event is a weather condition with excessively low temperatures or a combination of cold temperatures and wind that has the potential to cause cold-related illnesses or injuries. An extreme cold event is defined in hours, a day, or series of days when:

- The lowest expected temperature or wind chill is forecast to be approximately -5°F or lower.
- Weather or environmental conditions are such that a high incidence of cold-related illnesses or injuries can reasonably be expected.

*Complex Cold Emergency* – A Complex Cold Emergency is a condition of an Extreme Cold Event with complications requiring additional response. Examples of such complications are power outages, heavy precipitation (snow or ice), or an extended period of low temperatures combined with strong winds.

*Shelters* – Due to the coldest temperatures occurring overnight, sheltering the homeless is the primary concern in sheltering operations. Sheltering operations may also be employed or expanded during winter storms to reduce the risk to vulnerable populations. Both homeless and disaster shelters will be referred to in this plan as simply ‘shelters.’

*Wind Chill* – Wind Chill, or the apparent temperature, is a measure of what the temperature actually feels like. Wind Chill is a factor of both the actual temperature and wind speed, and is the best indicator for a pending extreme cold event. Wind Chill is the key indicator of Extreme Cold defined by the National Weather Service.<sup>1</sup>

---

<sup>1</sup> <http://www.weather.gov/om/windchill/index.shtml>

*Wind Chill Advisory* – The National Weather Service issues a Wind Chill Advisory when the wind chill could be life threatening if action is not taken. In Maryland, Wind Chill Advisories are issued when wind chill temperatures are forecast to range from -10°F to -24°F.

*Wind Chill Warning* – The National Weather Service issues a Wind Chill Warning when the wind chill is life threatening. In Maryland, Wind Chill Warnings are issued when wind chill temperatures are forecast to be below -25°F.

*Cold-related Illness* – A Cold-related Illness is a medical condition caused or exacerbated by extreme cold. For the purposes of this plan, cold-related injuries will be also referred to as cold-related illness.

*Hypothermia* – Hypothermia occurs when the body is exposed to cold and the body's mechanisms are unable to replenish the heat that is being lost, a drop in the body's core temperature occurs, causing symptoms such as shivering and mental confusion. Hypothermia is likely at lower temperatures, especially when the subjects are wet due to rain, fog or snow.

*Cold-related Injury* – A Cold-related Injury occurs when the body's tissues are damaged by exposure to extreme cold. For the purposes of this plan, cold-related injuries will be also referred to as cold-related illness.

*Frostbite* – Frostbite is the medical condition where localized damage is caused to skin and other tissues due to extreme cold. Like hypothermia, frostbite is likely at lower temperatures when the subjects are exposed to the cold, especially when wet due to rain, fog or snow.

*Carbon Monoxide (CO) Poisoning* – Due to the prevalence of heaters and fuel-burning devices during the winter, carbon monoxide (CO) poisoning presents the greatest risk during the winter months.<sup>2</sup>

*High-Risk Groups* – High-Risk Groups are populations that are disproportionately affected by extreme cold. These groups include babies, elderly adults, those with chronic medical conditions, people who remain outdoors for extended periods (homeless, hikers, hunters, etc.), and those who drink alcohol or use drugs.

---

<sup>2</sup> <http://www.crh.noaa.gov/oax/safety/carbonmon.php>

## Maryland Regulations on Power Termination

COMAR 20.31.03.03 forbids utility companies from terminating the power of an occupied residential building for nonpayment of bills without submitting an affidavit to the Public Service Commission (PSC) that the termination does not constitute a threat to the life or health of the residential occupants. In addition, PSC forbids termination for nonpayment of bills on any day when the forecast temperature, made at 6 a.m., is 32°F or below through the extreme weather period. *For PSC this timeframe is as follows: November 1 through and including March 31 of the immediately succeeding calendar year unless the utility first certifies to the Commission by an affidavit filed at least 24 hours before the termination, that the termination does not constitute a threat to the life or health of the occupant(s).*

### Phase 1: Pre-Winter

#### *Triggers*

- Pre-winter activities begin in October.

#### *Surveillance*

- The National Weather Service (NWS) determines the cold impact in the forecast. The Maryland Emergency Management Agency (MEMA) monitors data from the Sterling, Pittsburgh, Mt. Holly and Wakefield NWS stations.
- MDH conducts daily analysis of syndromic surveillance data from hospital emergency departments for indications of an increase in hypothermia, frostbite, chilblains, trench foot or carbon monoxide (CO) poisoning.

#### *MDH Actions*

- MDH will conduct an annual review of the MDH Extreme Cold Emergency Plan and revise and update as necessary.
- MDH will provide guidance and recommend best practices to aid jurisdictions in revising local Cold Emergency Plans as requested.
- MDH will update its website to include accurate LHD contact information.
- MDH will distribute the revised Cold Emergency Plan LHDs and planning partners.

#### *Local Health Department Actions*

- LHDs should verify contact information on MDH's website.
- LHDs may monitor the NWS for local temperature data.
- LHDs may review planning activities and maintain situational awareness.

#### *Public Information*

- MDH and LHDs should review and revise written and electronic public information materials.

## **Phase 2: Pre-Event**

### ***Triggers***

- MDH will begin conducting enhanced surveillance for cold-related morbidity and mortality on November 14, 2017.

### ***Surveillance***

- MDH and local agencies should monitor weather forecasts for the possibility of predicted weather conditions consistent with extreme cold.
- MDH will distribute weekly reports and analysis of the public health impact of cold-related illnesses. The weekly reports will be made available to the public at a predetermined time every week. These reports will include, but may not be limited to:
  - Temperature data via the National Weather Service.
  - Emergency department visits for hypothermia, frostbite and CO poisoning through MDH's syndromic surveillance system.
  - EMS Patient Care Report Data.
  - Number of cold-related deaths reported by the Office of the Chief Medical Examiner (OCME).
  - Cold advisory reference information.
- MEMA will monitor power outages in the state.
- MEMA will coordinate with local Emergency Management Agencies (EMAs) to monitor large public events with the potential to create a mass casualty incident.
- The Maryland Institute for Emergency Medical Services Systems (MIEMSS) will monitor Emergency Medical Services (EMS) statewide to monitor and track the number of hypothermia, frostbite and CO poisoning emergency calls.

### ***MDH Actions***

- MDH and jurisdictions should consider holding press conferences or issuing a press release on or just prior to the day of the first forecast extreme cold event, or;
- MDH and jurisdictions should launch cold plan activities by the first week of December if no extreme cold events have occurred.
- MDH will make a press announcement on or just prior to the day of the first extreme cold event or by the third week in December if no extreme cold events have occurred.
- MDH will review and revise this plan following any extreme cold events as necessary.
- MDH Office of Health Care Quality (OHCQ) will contact nursing homes to promote winter preparedness, reminding them to check their generators and HVAC systems and to report real or potential concerns and issues.

### ***Local Health Department Actions***

- LHDs may monitor the NWS for local temperature data.
- LHDs may review planning activities and maintain situational awareness.

### ***Demobilization***

- MDH will proceed to Phase 6 of this plan in early-April.

## **Phase 3: Extreme Cold Event – Wind Chill Advisory**

### ***Triggers***

- The NWS has issued a Wind Chill Advisory, or;
- Temperatures meeting the criteria for a Wind Chill Advisory are likely within the next 12 to 48 hours.

### ***Surveillance***

- MDH will maintain passive situational awareness on vulnerable facilities. Vulnerable facilities include those designated in the Facility Tracking Protocol: dialysis centers, nursing homes, assisted living facilities and hospice.
- MDH will continue to monitor syndromic surveillance systems and issue the weekly report outlined in Phase 2.
- MDH and MEMA will monitor NWS forecasts for any indication of extreme cold.
- MEMA will monitor power outages.

### ***MDH Actions***

- MDH will notify the jurisdiction(s) expected to be impacted by an extreme cold event.
  - The MDH Advisory will also be sent to other state agencies.
  - MDH may alert the public via media outlets, websites and social media.
- MDH will review extreme cold checklists and begin taking appropriate actions.
- MDH will coordinate with MIEMSS to issue alerts when appropriate.
- MDH and MEMA will maintain situational awareness and gauge the potential impact of the anticipated event.

### ***Local Health Department Actions***

- LHDs may notify local extreme cold planning partners.
- LHDs may coordinate with EMAs for recommending heightened mitigation protections or discouraging outdoor public events.
- LHDs may coordinate with relevant organizations to provide outreach to vulnerable populations as applicable.
- LHDs may coordinate with existing volunteers and partners for responding to extreme cold.
- LHDs may coordinate public messaging with public access numbers such as nonemergency dispatch, 211, 311 or reverse 911 systems.
- LHDs may notify MDH of any shelter openings.
- LHDs may recommend that government and schools restrict outdoor activities.

### ***Public Information***

- MDH will coordinate with each jurisdiction on extreme cold event communications.
- MDH and LHDs should employ consistent messaging that urges individuals to check on elderly neighbors and family members.



- MDH and LHDs should include pet emergency preparedness for cold emergency prevention in messaging. Resources can be found at Ready.gov<sup>3</sup>.
- Jurisdictions may utilize existing digital signage (such as outside firehouses, other public buildings or on public buses) to display concise cold safety tips.

### ***Demobilization***

- MDH will revert to Phase 2 when temperatures rise above 20°F.

## **Phase 4: Extreme Cold Event – Wind Chill Warning**

### ***Triggers***

- The NWS has issued a Wind Chill Warning, or;
- Temperatures meeting the criteria for a Wind Chill Warning are likely within the next 12 to 48 hours, or;
- Temperatures meeting the criteria for a Wind Chill Advisory are expected to continue for three or more days.

### ***MDH Actions***

MDH will take all the actions outlined in Phase 3: Extreme Cold Event – Wind Chill Advisory and:

- MDH will engage 211 as a public access number for cold-related questions and provide 211 with up-to-date public messaging materials.
- MDH will conduct conference calls to discuss the potential impact of the event with stakeholders. The calls may include, but are not limited to:
  - Internal MDH staff
  - LHD staff
  - Other state agencies
- MDH and DHS will gather information on sheltering operations to report to MEMA.
- MDH will operate at an Enhanced Readiness level, in preparation for a Complex Cold Emergency.
- MDH will supply local health departments with updated lists of licensed facilities for tracking.

### ***Local Actions***

- LHDs may provide MDH with updated information on local shelters.

### ***Demobilization***

- MDH will revert to Phase 2 when temperatures rise above 20°F.

---

<sup>3</sup> <http://www.ready.gov/america/getakit/pets.html>

## **Phase 5: Complex Cold Emergency**

### ***Triggers***

- MDH and MEMA will use discretion in deciding what conditions constitute a complex cold emergency. These may include, but are not limited to:
  - Significant power outages, or;
  - Extended periods of low temperatures with a wind chill of -5°F, or;
  - Hazardous precipitation during a cold event causing significant hail or snowfall, or;
  - Any other factors that would exacerbate a cold emergency.

### ***Surveillance***

- MDH will begin issuing the Daily Cold-Related Illness Surveillance Report and will continue through the duration of the emergency.
  - The final Daily Report will be issued the day following the final cold emergency day, and will include surveillance data from the final cold emergency day.
- MDH will release death information at the discretion of the Deputy Secretary for Public Health Services.
  - The distribution of death data will follow a prescribed flow of information due to the overwhelming number of requests for information during these events.
  - Current processes include, but are not limited to:
    - OCME death data will be routed internally to the Office of Preparedness and Response.
    - Local Health Officers or their designees will be notified of the details of deaths in their jurisdiction by MDH.
    - The daily report is sent to planning partners and posted to the MDH website.

### ***MDH Actions***

- MDH will conduct regular conference calls to discuss the potential impact of the event with stakeholders. The calls may include, but are not limited to:
  - Internal MDH staff
  - LHD staff
  - Other state agencies
- MDH will activate the facility tracking protocol for the monitoring of vulnerable facilities if the health and safety of the residents of those facilities would be put at risk due to the emergency.
- MDH will coordinate with MEMA, DHS, MDoA and LHDs to monitor, track and post the locations of shelters statewide.
- MEMA will request information from local EMAs on events that may be affected by the complex cold emergency.
- MEMA will assume incident command for the cold incident and begin coordinating Emergency Support Functions in support of a response.

### ***Local Health Department Actions***

- LHDs may notify their EMAs of large-scale public events in the local jurisdiction that have the potential to result in a mass casualty incident.
- Local EMAs may notify MEMA of the above events.
- LHDs may recommend greater mitigation protections or cancellation of outdoor public events.
- LHDs may activate facility tracking protocols.

### ***Power Outages***

- In the event of a widespread or prolonged power outage, MDH will coordinate with MEMA, the Public Service Commission and power companies to ensure that facilities with vulnerable populations outlined above receive priority in power restoration due to the life-threatening nature of extreme cold in a powerless facility.

### ***Public Information***

- MEMA may activate a Joint Information Center (JIC) to address public messaging.
- MEMA and MDH, through the JIC, will use 211 or public access numbers to distribute cold emergency information.
- The public will be notified through the JIC if pharmacy restrictions on the ability to renew prescriptions will be lifted due to the emergency.
- Local jurisdictions with access to reverse-911 systems may use them to provide cold advisory warnings to identified vulnerable populations.

### ***Demobilization***

- MDH will revert to a previous phase once the complicating factors have been resolved or MEMA stands down the SEOC:
  - MDH will revert to Phase 4 if a Wind Chill Warning is in effect,
  - MDH will revert to Phase 3 if a Wind Chill Advisory is in effect,
  - MDH will revert to Phase 2 if temperatures have risen back to 20°F.

## **Phase 6: Post-Winter**

The post-winter activities typically begin in early-April and include After Action Reporting and planning for the next operational period.

### ***Triggers***

- MDH will terminate enhanced surveillance for cold-related morbidity and mortality on April 2, 2018.
- Post-winter activities begin in April.

### ***MDH Actions***

- MDH will cease circulating weekly cold reports in April.
- Where applicable, MDH will collect After Action Reports from the jurisdictions and determine best practices to be included in the following year's planning efforts.

- MDH will collect, analyze and release statewide surveillance data from the winter for use in future cold planning.
- MDH will review and update the State Cold Plan, including a comprehensive review of local plans and resources, to be completed by October 31.

***Local Health Department Actions***

- LHDs may cease cold-event monitoring
- LHDs may coordinate with MDH on an annual cold plan review.
- LHDs may identify organizations serving high-risk populations that can be utilized in following season.
- LHDs may conduct an evaluation of interventions:
  - Review evaluation tools to monitor effectiveness.
    - Shelter usage.
    - Transportation program usage, if available.
    - EMS system usage.