

PLAN FOR HEALTH AND MEDICAL RESPONSE TO FLOODING
NORTH DAKOTA DEPARTMENT OF HEALTH

Assumptions

- Flooding disasters are localized; consequently, resources can be brought in from other areas in the state to assist a flooding area.
- Pre-emptive evacuation which prevents the necessity of evacuation of any residents through flood waters will result in the least loss of life. Planning intends to ensure pre-emptive evacuation.
- Priority is placed on the evacuation of residents in the following order:
 - Patients in acute care facilities that are at risk for flooding;
 - Patients in long term care facilities and medical congregate living sites that are at risk of flooding;
 - Other patients at medical risk, including patients with unstable medical conditions or disabling conditions;
 - Families with pre-teen children;
 - Other vulnerable populations including persons with reduced resources;
 - General population;
- Criteria for preemptive population evacuation are different for each community, situation and health care facility. Factors which affect the likelihood of preemptive evacuation include:
 - Depth of flood water if breach occurs in flood control barriers;
 - Time for flood waters to reach a specific site or area;
 - Temperature of water;
 - Number of flood control barriers between population and flood waters;
 - Flood control barriers operating within the parameters for which they were designed; and,
 - Ability of HCF to shelter-in-place.
- Evacuation of a health care facility in the face of advancing water (e.g., after a levee has been breached) is not a planning assumption. While it may occur that a particular facility can be evacuated safely after a levee has been breached, emergency evacuation is not to be relied upon as an alternative to pre-emptive evacuation; however, it may be considered in the timing of evacuation.
- Some risk is inherent due to uncertainty (including levee strength, rate of water rise, height and duration of water rise and margin of error in determining facility elevation). This risk exists whether patients are moved or left in place. When the risk of evacuation becomes substantially lower than the risk of leaving residents in place, evacuation is likely.
- Areas which have lost utilities or which are cutoff from road access for a sustained period must be evacuated;
- Most persons evacuated from an area will have housing alternatives available; historically, demand for sheltering following an evacuation has been relatively low.
- It is not possible to accurately assess the percentage of any particular population that will require sheltering but based on national could be on the order of:
 - General population sheltering: 10%
 - Medical sheltering including special needs sheltering: 1%Past evacuation events have resulted in much lower rates of sheltering in North Dakota than for the nation as a whole (e.g., Minot flood).
- All or parts of communities may become impaired by flood waters even without direct inundation. If sufficient community impair occurs, the community will require evacuation. This may arise due to:
 - Loss of utilities (sewage lagoon or sewer flooding, breakage of water pipes, damage to electrical infrastructure);
 - Environmental contamination (dead animals in flood waters);
 - Loss or risk of loss of external road access;
 - Loss of city services (snow removal, garbage collection)

Scope of Plan

Relationship to Other Plans

This plan is supported by multiple support annexes

- Incident command management plan
- Sheltering plan
- COG/COOP plan
- Volunteer management plan
- Health care plan
- Sheltering plan and Sheltering Field Guide
- Public information plan
- Pre-hospital stabilization plan
- Medical support of rescue operations
- Tactical communications plan
- Medical supply distribution plan (SNS)
- Mass fatality plan

Plan Inclusions and Exclusion

- This plan applies to short term (acute) flooding and long term or continuous flooding (see Devils Lake Flood Plan for planning specific to that one area)
- This plan covers the health and medical response to flooding, but excludes the environmental response to flooding

Summary of State and Local Roles during Flood Management

Roles filled by state or local public health may vary some by jurisdiction. Communities which are capable and experienced in flood management (e.g., Fargo) may choose to exercise greater control over flood management. State roles which may be pickup or heavily assisted at the local community level are marked with a * below.

State Primary Roles

- Health care system support;
 - Health care facility risk assessment*;
 - Patient placement and pre-placement;
 - Sheltering-in-place*;
 - Mass patient transportation*;
 - Provision of medical supplies and equipment;
 - Ensuring coordination of services to re-supply health care institutions losing access to utilities or critical supplies;
 - Patient tracking;
 - Bed availability tracking;
 - Activation of medical volunteers*;
 - Patient health care access (including dialysis), pharmaceutical access and information related to continuing operational medical services in the flood risk zone*;
 - Medical support of rescue operations;
 - Pre-hospital stabilization; and,
 - Maintaining standards of patient treatment during a disaster;
- Triage of evacuees*;
- Operation of state medical shelters;
- Medical supply support for all shelters;
- Material support for local medical shelters;
- Credentialing and activation of volunteers;

- Health policy and executive orders affecting health and health care;
- Infectious disease surveillance and disease control;
 - Surveillance support for shelters;
- Regulatory oversight and regulatory assistance;
 - Health care licensure;
 - Medicare waivers;
 - Food and water safety;
 - Environmental support for shelters;
- Tactical communication systems*;
- Federal assistance coordination;
- Inter-state public health assistance coordination;
- Support for public health and medical reimbursement (e.g., FEMA, Medicare);
- Additional response assigned by NDDDES;

State Secondary Roles

- Any critical local role which local public health is unable to meet;
- Mental health care (primary role belongs to NDDHS);

State-Local Shared Roles

- Medical sheltering;
- Recommendations for evacuation of general populations or high risk subgroups;
- Recommendations for evacuation of health care facilities;
- Public Information;
- Health care system support (some jurisdictions);
- Environmental health services;
- Mass fatality management;
- Connection of evacuees to health services;

Local Primary Roles

- Operation of local medical shelters;
- Local public health need assessment;
- Volunteer assignment and supervision for local public health responses;
- COG/COOP for local public health services;
- Additional response assigned by local emergency management;

Local Secondary Roles

- Any state lead public health function for which state needs local assistance in local jurisdiction.

Health Care System Support

Although statewide, health care system support is viewed as a responsibility of state public health (since the intent is that the all health care institutions in the state function as a single health system), the role that some local public health units play with local health institutions is substantial. Where that is true, the local health care system is assisted jointly by state and local public health with coordination of assistance through the department operation centers of each entity.

Health Care Facility Risk Assessment:

NDDoH adopts a relatively low threshold for recommending evacuation of health care facilities (especially acute care facilities) due to flooding. Although evacuation which proves unnecessary is expensive and may temporarily increase the health risk to some patients, the outcomes of sheltering-in-

place and emergency evacuation through flood waters is often associated with poor outcomes (e.g., New Orleans post Katrina). Factors to consider in pre-emptive evacuation include the following:

- In most instances where a health care institution is threatened, it is protected by a levee which can fail catastrophically with little advance warning. Levees functioning outside the parameters for which they were designed are expected to put a facility at high risk if its breach would cause flooding.
- Some institutions may have reasonable capability for sheltering-in-place; however, the capacity of health care institutions to shelter-in-place has not been assessed for all hospitals. The level of institutional functionality during a flood appears to depend on a number of factors including
 - Availability of staff – This has been shown to be highly unpredictable. Agreements with staff in place pre-event tend to fall apart if staff homes or families are threatened, even if failure to show means loss of the job. Longer term, staff may have limited housing options if attempting to work in their health care facility during flood recovery.
 - Adequacy of supplies including medications, linen, disposable medical supplies and food - The ability to bring in supplies will depend on the depth of flooding (preservation of road access). Some institutions rely on contract services (e.g., for food preparation, bottled water) but these should be assumed to be unavailable during a flood.
 - HVAC - Sustaining HVAC may be dependent on large amounts of service water and large electricity requirements which may be beyond the generator capacity. (Cooling in hot weather is expected to require greater amounts of service water and electricity than heating.) Loss of HVAC during the winter could render a HCF uninhabitable within a few hours (estimate of 10 degrees an hour but highly variable depending on building and degree of external cold). In addition to loss due to community outage, electricity, including generator power, may be lost due to flooding of switching rooms/generators in the facility. In this case even critical electricity like that supplying ventilators may be lost.
 - Maintenance of electricity and the systems operated by generator – The capacity of the generators and the extent to which they supply electricity to the hospitals varies considerably from institution to institutions. Some facilities may not have sufficient electricity to operate sewage sumps, food services, laboratory and x-ray. This may pose little problem for a six hour outage but is not sustainable for days. All facilities periodically check their generators, but no facilities checks the ability of the generators to keep running for days without interruption.
 - Water - Potable water may be provided by water purification systems, which may be movable to an institution assuming the facility can be reasonably accessed. Water storage will be a problem for some institutions which do not have a bladder; however, it may be possible to supply the site with a bladder.
 - Building integrity – some buildings may not tolerate water around the foundation without becoming de-stabilized. Whether this is true may not be known to the institution without an engineering assessment.
 - Communications - Health care facilities have been substantially insulated against loss of communications.
 - Ability of facility to provide adequate level of care -- A facility which does not offer a full range of emergency, medical and surgical services, including intensive care, may not be able to adequately care for a patient who deteriorates, but not able to move the patient to a referral site if surrounded by flood waters.
- Evacuation of a health care institution will be substantially more difficult if surrounded by flood waters. Evacuation must necessarily be slow and if water is deep may have to be done entirely by rotor wing aircraft (assuming a landing site is available which has not been flooded) or boat. Evacuation of critically ill and bariatric patients may be particularly difficult.
- Evacuation of acute care hospitals to staging facilities pending patient placement is much more difficult than for long term care due to the acuity of the patients and requirement for critical ancillary

resources (e.g., oxygen). In addition, pre-placement may not be available for most acute care patients due to the rate of patient turnover.

Evacuation

Minimizing Impact on Patients

If evacuation is determined to be likely or necessary, efforts will be made to minimize the impact on patients to the degree that it can be given the disaster situation. This may include:

- Avoiding evacuations at night;
- Providing lead time for residents to prepare themselves for evacuation ;
- Providing as much information as possible to residents and their families about what to expect;
- Minimizing the distance traveled and the time spent on transport vehicles;
- Arranging for patient comfort to the degree possible while in transport (including toileting breaks for long distance transfers);
- Adequately staffing transport vehicle to provide assistance to patients;
- Transporting the sickest patients the shortest distance possible to reach a facility with adequate capacity to care for the patient.
- Keep hospice patients nearby for family, if possible.

Contact to Evacuated Facility

Once a facility completely evacuates, it may not possible to reach the administrative personnel of that facility at the numbers available in usual contact information. Before a facility evacuates, the DOC will need to ensure it has contact information for the facility's administrative personnel wherever they will be located.

Placement and Pre-Placement

NDDoH is responsible for ensuring evacuation of the following institutions when evacuation is indicated:

- Acute care hospitals;
- Long term care (LTC) and long term acute care (LTAC);
- Assisted living facilities; and,
- Congregate living facilities for medically high risk patients

The goal is to have as many of each of these patients pre-placed prior to the period when risk of flooding is anticipated to be high. (NOTE: The period of high risk may be as little as a one to two week period when water is anticipated to rise high enough on temporary or permanent levees to pose a substantial risk to patients should a breach occur. Estimation of the high risk period will be based on projected water depth probabilities provided by the National Weather Service.)

With the recognition that the situation for some patients will change prior to evacuation (new patients, patients discharged or deceased), beginning two to four weeks prior to anticipated flooding, NDDoH, in coordination with the North Dakota Long Term Care Association, will begin:

- Pre-placement of assisted living residents after institutional assessment of which patients in assisted living will need pre-placement and which can go home with family;
- Pre-placing long term care residents to other long term care institutions not believed to be at substantial risk of flooding.

In coordination with the Department of Human Services, two to four weeks prior to NDDoH will begin assessment of medical congregate living settings at risk of flooding to assess which patients can go home with a relative, can be placed into a medical shelter, or need to be placed into a LTC facility. Following assessment, pre-placement will begin for those requiring LTC beds. In addition, a small percentage of these patients may be of marginal medical status and may need acute care placement; however, this may not be possible to determine much prior to evacuation.

Some pre-placement of acute care residents may be possible beginning one week prior to anticipated high risk period for flooding. Health care facilities will determine which patients are likely to need continued inpatient care. High turnover (admission and discharge) and rapidly changing status (e.g., admission or discharge from the ICU) will limit the extent of pre-placement possible. Health care institution should be able to provide an indication of the total number of patients likely to continue as inpatients during the period of high risk and the proportions of those patient which will require ambulance, stretcher bus or wheelchair bus for transport to another facility.

The sequential process of pre-placement for long term care and assisted living will require:

- Identification of a complete list of patients who are anticipated to need a bed in another institution. This would include a description of significant institutional or patient-specific factors which would affect placement:
 - Does the facility to be evacuated have preferential arrangements with other institutions to which placement should preferentially go?
 - Are preferred institutions within reasonable transport distance, and if not, does the institution have arrangements for transport other than that provided by the EMS system or local or state disaster responders which cannot be tied up for long distance travel?
 - Is the patient on dialysis?
 - Does the patient weigh more than 350 lbs.?
 - Does the patient have other complicating factors which may make placement more difficult (e.g., total care, antibiotic resistant bacteria, behavioral issues)
 - Is the patient ambulatory, wheelchair or stretcher? (Note: ambulatory status requires reasonable walking speed and ability to climb into a bus.)
- Collection of bed availability data
- Contact with individual institutions to assign specific patients to available beds at institutions capable of providing an adequate level of care, including, where indicated, ascertainment of available dialysis space in a nearby unit which could accommodate the patient.
- Subsequent updating of information related to filling of beds or change of patient populations during the weeks prior to actual evacuation.

If a patient is pre-placed, he or she is matched to a bed; however, that bed is not held in the face of an alternate admission. Consequently, some patients pre-placed prior to evacuation may no longer have a destination. This does not prove to be a frequent problem for long term beds, but acute care beds may be quickly lost.

Long term care placement of patients for evacuation will be performed by the DOC for patients with in-state destinations. Acute care facility placement will be the responsibility of the evacuating institution unless they are unable to complete this task. For acute care facilities, self-placement by the institution is generally faster, and those making the placement have additional information about the medical condition of the patients which receiving acute care facility will need. The disadvantage is that multiple entities may be trying to place in the same institution. (Even patients self-placed by the evacuating institution will need to be entered into the patient tracking system – see section on patient tracking.) The Minnesota Department of Health has historically requested that it be allowed to coordinate placement of both acute care and LTC beds so that it can track availability and ensure a more even distribution to prevent excessive surge causing problems with patient care quality. In addition, Minnesota may be affected by flood conditions as well, requiring the placement of Minnesota residents in Minnesota beds.

Following the identification of specific placement availability, data collected regarding each patient, as well as the aggregate destinations of all the pre-placed patients will permit assignment of patients to specific transport units. As of this writing, transport units to be used are as follows:

- Fourteen wheelchair converted buses each holding 14-16 patients (two permanently converted)
- Five stretcher converted buses holding 16-18 patients
- Two mixed stretcher/wheelchair buses for which the configuration can be varied;
- Two ambulances each holding 18 patients (primarily setup for stretcher patients, ambulances can hold a smaller number of wheelchairs).
- Wheelchair coaches contracted from long term care facilities of variable size.
- Individual ambulances as needed to cover transport of remaining patients not suitable for transport by bus, or due to insufficient space on buses if return trips are not possible due to evacuation urgency.

Each transportation mode has advantages and disadvantages. NDDoH conversion buses and contract wheelchair coaches are the most economical. Conversion buses are more economical for long distance transport of large numbers of patients when multiple wheelchair coaches or multiple trips would have to have been used. For short distance transport when a single coach can hold the patients needing to be transported, a wheelchair coach is at least as economical as a conversion bus. Conversion buses require coordination of volunteer staffing and possibly time for the bus to be converted. Wheelchair coaches can usually be found quickly and usually with available staffing and driver; however, scheduling a wheelchair coach can be more problematic during repatriation when movement is less urgent. Ambulances can be mobilized quickly with staff and are more economical than ambulances for large number of patients. Ambulances are needed for high acuity patients and special transport problems but have the advantage of wide availability and rapid mobilization.

Tentative routes will be laid out pre-event to maximally utilize the available transportation. At the time of actual evacuation, tentative routes will have to be adjusted based on changes in patient population which occurred after pre-placement. It is anticipated that most hospital inpatients will be transported by ambulance; however, it is likely that at least some patients in each hospital could be evacuated by wheelchair or stretcher bus if that were necessary. Most lower acuity patients will likely have been discharged home as river levels reach risky levels.

Repatriation

The decision to repatriate health care facilities should come through the DOC in cooperation with local public health and the health care facility. Once patients are in new sites, the primary motive for returning patients to the original health care facility is the lost revenue of the facility and preventing undue burden on receiving facilities. While these are compelling reasons, repatriation must also consider the condition of the patients, the likelihood that flood risk has not resolved and whether the facility is in acceptable condition to receive patients back (and has been re-licensed by the state). Although evacuation may have occurred very rapidly, repatriation would occur, at least for larger facilities, in a staged manner over several days.

Evacuation through Flood Waters

It is the intent of NDDoH never to have left patients in a health care facility which floods; however, since any reliance whatsoever on earthen levees means that some risk of flooding is accepted, the following outlines the specific known requirements for evacuation through flood waters.

If a facility does flood, it is the intent of NDDoH that it be a facility which is fully capable of sheltering-in-place for many days without any outside assistance. (That is, the threshold for NDDoH to request pre-emptive evacuation of a health care facility is much lower if that facility cannot fully shelter-in-place.) If a facility can fully shelter-in-place, then the general population which is affected by flooding would be at greater immediate risk than the patients in the health care facility. Consequently, it may save more lives to direct resources to evacuation of vulnerable community residences initially than to evacuation of the health care facility. (Note: This only applies to emergency situations when pre-emptive evacuation did

not occur in time.) However, consideration has to be given to whether flood waters will continue to rise and complicate removing patients from a flooded facility.

The vehicles which will be required to evacuate a health care facility depend on the depth of flood waters. Ambulances can travel through about six inches of flood water maximum for any portion of the route from dry road to the health care facility. Special bus transports (e.g., handicapped buses) available in city fleets will be able to move through 12 to 18 inches of water and standard school buses through about two feet of water. National Guard vehicles can move through up to 34 inches of flood water¹. Beyond that it will be necessary to evacuate using rotor wing craft or boat.

A vehicle will come to the exterior of the health care facility, preferably to a loading dock for high deck vehicles that will require lifting patients up to the deck where they will lie. Some patients in the facility may have to be moved down stairs and through flood waters by rescuers wearing waders. The weight of many patients is likely to require four people to carry a litter. To facilitate this, it may be necessary for all patients to be moved recumbent. In the event National Guard vehicles are used, only two Guardsmen will be able to come with the vehicle meaning assistance from hospital staff will be needed to carry patients. This will require facility staff to have access to waders since the water will typically be too cold for skin contact.

Non-acute patients may be able to evacuate the short distance required without a medical attendant. This would permit up to four patients being evacuated at one time by a Guard vehicle. Need for a medical attendant by acute patients would be expected to decrease this number to two or three per trip. Guard vehicles will expose patients to external ambient temperatures; however, tarps can be used to keep off rain or snow. Space between the deck and the tarp would permit at least some people to stand up straight.

In the event that a facility is located close to the levee, particularly if very low in elevation relative to the height of the flood waters such that a breach in the levee may flood the facility quickly, incident command should request the facility to vertically evacuate pre-emptively (if the decision is not made to fully evacuate the facility pre-emptively).

Time requirements to evacuate a hundred patients will depend on many factors including:

- Whether the patients are acute or non-acute;
- Whether buses, Guard vehicles, boats or rotor wing craft are used;
- The number of vehicles available to assist with the evacuation;
- The distance traveled through flood waters;
- The availability of adequate receiving vehicles at the disembarkment point (i.e., point at which the patients leave the water transport vehicle and move to a vehicle to transport them to a pre-hospital stabilization site or a medical shelter);
- The number of floors patients will have to be moved downstairs;
- The adequacy of workers with waders to move patients at the facility.

If water is high enough to require use of guard vehicles, a guard vehicle may have to make 30 trips or more to remove 100 patients. Each trip may take one to three hours. Night time operations are possible but slower and somewhat more hazardous. In the event patients must be moved by boat or rotor wing craft, evacuation is likely to be limited to one patient at a time and potentially require several days to evacuate a large facility.

¹ NDNG has 183 LMTVs (light medium tactical vehicle) distributed around the state. Uncertainties include inability to determine pre-event if a sufficient numbers of drivers would be available to operate all vehicles if NDNG personnel are being used for a variety of missions for flood response, and time required to mobilize vehicles to the flood area.

The default assumption will be that if a levee breaks flooding a facility, it will be many days or possibly weeks before flood waters will withdraw sufficiently to avoid evacuation through flood waters. It is possible in some instances that a small breach in which the water height inside and outside the levee is not great may be sealed and the water pumped out. Alternately if the facility floods to only a shallow depth at a time near the river's point of cresting, water may withdraw quickly as the river falls or be isolated by sandbags and pumped out around the building. Removal of the water will make evacuation substantially easier but will not eliminate its necessity.

Sheltering-In-Place

As noted above, NDDoH could make a decision that a facility should shelter-in-place rather than evacuate when faced with a substantial flood threat, but that decision would not be made lightly². (A decision to allow sheltering-in-place is a gamble that the facility will not flood, and it would not be made if flooding were certain or even highly likely.) It is assumed that all facilities which flood will have to evacuate at some point. If more than one facility has flooded, priority for evacuation will be based on greatest threat to patients. In some circumstances, such as loss of HVAC, immediate emergency evacuation may be necessary; however, if the problem can be fixed (e.g, loss of HVAC due to inadequate power or lack of service water), the preference is to repair the facility and not evacuate or evacuate more slowly. Consequently, it is preferred that only those facilities which can be fully self-supporting, including staffing, for at least seven days be considered for sheltering-in-place, and only to water depths which would allow high water vehicle entry³. In addition, since rapid flooding may occur unexpectedly, preparedness activities at all hospitals in potential flood zones should include ensuring ability to shelter-in-place without outside assistance for at least three days.

In some circumstances, a facility may not be threatened by flood waters yet lose one or more utilities. The facility may be able to continue to operate without evacuation and NDDoH would assist it to do so if that is feasible. However, if the facility is an acute care facility, this may also require diversion of some or all new patients away from the impaired facility to other health care facilities. This would be accomplished using media messages and communication with EMS.

Decision Making for Pre-Emptive Evacuation of Health Care Facilities

It is not possible to make one hard and fast rule about when to pre-emptively evacuate a health care facility for the following reasons –all of which are knowable but complex, rapidly changing or impossible to know.

- What kind of levee protects the facility? If permanent, can water reach the facility indirectly by breach of one or more earthen levee in another location and at what potential river levels?
- Is there high ground that will protect the site to some water elevations higher than the elevation of the facility (requires inundation mapping);
- What is the likelihood the levee will fail at any particular water level (what water level was the levee designed to withstand)?
- If a levee breaches, how close to a HCF might the breach occur? What is the minimum distance from a primary levee for each facility?
- What secondary levees are in place and will they buy sufficient time to evacuate after the first levee has failed should that be determined to necessary?
- How long will it take for water to reach the facility given water level differential inside and outside the levee and width of breach, and can emergency levees be put into place after the breach before water reaches the facility?

² The decision to mandate health care facility evacuation is not up to NDDoH; however, NDDoH may recommend mandatory evacuation to the Governor or LPH may recommend mandatory evacuation to the local decision making authority.

³ Waters can continue to rise after a decision to evacuate is made.

- How many patients does the facility have at any point in time?
- How long would it take to completely evacuate the HCF facility considering other facilities may be evacuating at the same time and given patient acuity level at the time?
- What is the facility's ability to shelter-in-place and for how long?

In addition, certain factors related to the extent of inadequacy of sheltering-in-place may make the facility at greater risk compared to other facilities (and hence needs to be evacuated first):

- A facility that has no second floor for vertical evacuation is at immediate risk if water enters the building;
- A facility that would lose HVAC and electricity is at risk within a few hours of inundation;
- A facility with reduced staffing may be at risk within a few hours to a day although it may be possible to bring staff to the facility;
- A facility without adequate commodities (food, water, linen, medication) can likely be supplied for a few days, except for more generator capacity, oxygen and large quantities of diesel for a generator which would be much more difficult to move through flood waters;

Some facilities will fit no algorithm. The elevation of water outside the levees in Fargo surpassed the elevation [REDACTED] and the [REDACTED] five times in a recent ten year period. Given the uncertainty of levee integrity, this could have resulted in those facilities being flooded (which they were not), but it is impractical to put no confidence in the levees and evacuate the facilities with that frequency.

Exceptions may have to be made or the level of risk taken may be adjusted up or down according to circumstances and the recommendations of those on the ground in the city.

1. Once the water level outside the levee^[1] surpasses the elevation of the facility, the facility will be evacuated unless the facility has been approved to shelter-in-place. To be approved to shelter-in-place, the facility must :
 - a. Be fully capable of sheltering-in-place, or
 - b. Be close enough to fully capable that responders can adequately supply its needs in spite of surrounding flood waters;
2. Once the water level has reached the height of the facility, the facility must evacuate patients that would be difficult to evacuate through flood waters, including all ICU patients and patients weighing more than 250 lbs.
3. If the facility is close to the levee such that little response time is likely to be available to move patients once a breach occurs, the facility must vertically evacuate patients pre-emptively to ensure that no patients are left in the path of flood waters (the street level floor could continue to be used for all other purposes except patient rooms).
4. Once the height of the water outside the levee surpasses the facility elevation plus 20 inches, the facility must evacuate. Twenty inches of water is just below the level at which school buses would be expected to be able operate through flood waters. Although National Guard vehicles can evacuate through deeper water, it would be much slower and more difficult to accomplish in a reasonable period if multiple facilities were deeply flooded.

2011 Flood Response Update – Sheltering-in-Place

^[1] If a facility is protected by more than one levee, it is not considered to be at risk unless the likelihood of primary levee failure is high. The back up levee does not need to hold indefinitely, rather only until the then at risk facility can be evacuated. This assumes that two levees fully protect the facility. If a single levee could be breached and flood the facility than two levee protection is not in place. However, second levees may be built to back up tall or weak levees and thereby lessen the likelihood of a levee breach. This needs to be taken into account in assessing risk.

For the 2011 flood, a brief assessment form was sent to all health care facilities asking them to evaluate themselves on their ability to shelter-in-place in the face of a flood. A facility which did not meet all or nearly all criteria was considered a poor choice for sheltering-in place. It is impossible to objectively quantify temporary levee protection, that is, it cannot be determined beforehand if a temporary earthen or sandbag levee will fail unless there are already signs of impending failure. Permanent concrete levees are unlikely to fail, but they can be overtopped. NDDoH DOC determined that making a decision to recommend facility evacuation needed to be made with local experts on the ground in the area and in discussion with health care facilities.

2011 Flood Response Update – Facility Elevations

The approach described for determining when to request a facility to evacuate is primarily based on the level of flood waters relative to the elevation of the health care facility. Elevation of the health care facility is a bit of a problem, however.

- *The reference system used to collect the data needs to be the same as that of the National Weather Service (NWS) which is reporting the water depth (National Geodetic Vertical Data 1929)*
- *Elevations are either obtained from estimates based on contours or are shot with a GPS unit. Unlike the latitude/longitude which is very accurate, the elevation is not very accurate by either method and can be off by up to several feet. (The most accurate way to determine true elevation is for an area to flood with associated data collection showing where the water goes.)*
- *Elevations are typically reported by the NWS relative to a single point for a city. For small cities this is reasonably accurate, but for large cities, the elevation of the water may drop substantially from upstream to downstream across the community. Fargo makes an adjustment to its reported water elevations based on corrections for this.*
- *Elevations reported by the NWS usually reference river height. The river height is obtained by subtracting a reference sea level elevation from the sea level elevation of the water. The reference value is reported on the NWS Advanced Hydrology website which reports the water elevations.*

State Medical Shelters and Pre-Hospital Stabilization Sites – See documents specific to those entities NDDoH will support State Medical Shelters for sheltering of patients with medical problems who cannot go into a general medical shelter and where a local medical shelter is not available. Staffing will be provided by supervisory staff from NDDoH and patient care staff provided by ESAR-VHP. The other circumstance in which medical sheltering will be needed is for the rapid evacuation of a facility to higher ground pending transport of the patients to another institution. PHSS sites will be provided to extend patient stabilization support for multiple patients at one time at an ALS level where no local capacity or inadequate local emergency capacity creates a delay in patient care or requirement for long distance transport.

Provision Of Medical Supplies And Equipment: Shelters, PHSS, and HCF

In most flooding situations, it is not anticipated that health care institutions will need to access the state cache. State commercial distributors should continue to be used to meet medical supply needs. If an item is unavailable or not available in the time needed, health care providers and institutions may request the material from the cache, or borrow from another health care facility if that is preferred.

Medical cache materials can be requested from the state cache by using HAN Assets (<http://hanassets.nd.gov>). All local public health units, health care facilities and health care providers can create an account in HAN Assets . The system is monitored continuously, even between periods of disaster response, but a call to NDDoH Emergency Preparedness Section is advised to access materials between events or when an event is just beginning so the situation can be discussed. After hours, the NDDoH Case Manager should be called; the Case Manager can be reached through State Radio.

When ordering From the HAN Assets menu, the local entity will be able to select the items and quantities needed. The system is monitored in the Department Operations Center (DOC) during an emergency for all types of materials requests. After the order is submitted, the assigned HAN Assets manager may call the requesting entity to clarify any ambiguity in the order or any shortfall in material availability. Whenever an order is received, the operations section of the DOC will decide whether filling the request is indicated and whether sufficient supplies of the requested item are available to meet the request. If it is determined that materiel should be shipped, the operations chief will notify the NDDoH warehouse of the request to be filled. The warehouse will arrange transportation. Most orders can be delivered within 24 to 36 hours, although shorter time to arrival of the material can be arranged if urgent.

HAN Assets should not be used for requesting personnel assistance during a disaster response. Assistance with personnel should come to the DOC by telephone.

2011 Flood Response Update – Oxygen Transport

The transportation of oxygen falls under hazardous material transport. Transportation of cylinders of O₂ needed transport racking which was obtained. Trailers used to transport the oxygen required labeling with a hazardous material plaque and drivers had to be certified in hazardous material transportation.

2011 Flood Response Update – Medical Supplies for Displaced Populations

During the 2009 flood when residents were displaced out of Fargo, many left the area without taking their durable medical equipment or critical supplies or had inadequate supplies to meet their needs. Examples of missing material included oxygen concentrator, CPAP machine, urinary catheters, and empty oxygen bottles. Hospitals provided these materials for patients and attempted to recover costs but were unsuccessful in many cases. For the 2011 flood response, hospitals were asked to continue providing this service under the following conditions:

- *The hospital had signed the MOA with NDDoH for emergency response*
- *The patient was registered to be seen as an outpatient through usual methods*
- *An attempt to recover the costs through billing, including billing for the outpatient visit, was attempted.*
- *Inability to collect for the billing would come to NDDoH which would be responsible for the cost as disaster medical care.*

Transport Vehicle and Transport Personnel Tracking

Each vehicle to be used to transport patients will be assigned to a regional staging area and assigned a vehicle number, and each vehicle will be tracked using a transport tracking database. In addition transport personnel responding to the flood will also be entered into the transport tracking database. Information will include the transport vehicle to which each person was assigned and the assignment status.

2011 Flood Response Update – EMS Transport

Reimbursement Issues: Emergency medical transport of patients away from flood waters may be necessary, but that does not mean it will be covered by third party payers. The decision to pay appears to hinge on the interpretation of the phrase “medically necessary.” During the 2011 North Dakota flood, Medicaid considered that any patient moved by EMS solely for the reason of evacuation was not covered by Medicaid and a blanket denial was issued in writing for use with FEMA. Blue Cross Blue Shield interpreted emergency evacuation to be within the meaning of “medically necessary” as long as the evacuation was done under a mandatory order. (The decision by BCBS to pay evacuation transport poses the problem of the patient being responsible for the co-pay which they are unlikely to pay. CMS was queried on this and provide back the written rules that required the evacuation to be medically

necessary but follow back to gain an interpretation of “medically necessary” did not result in a forthcoming answer.

Availability: The number of ambulances which could be identified pre-event (43, of which 16 were ALS) in the absence of an immediate acute need were less than the estimate of need of 75-100). However, sufficient ambulances were found from MN (60+) to make up the deficiency in addition to those available in SD. Although contracting with individual out-of-state ambulance services was discussed, the final decision of the supporting states (MN, SD) was to use EMAC.

2011 Flood Response Update – Canadian Assets

Manitoba was able to offer 12-13 ground ambulances if needed. Procedures for getting ambulances quickly across the international border were as follows:

- 1. NDDoH sends a letter to Manitoba Health, a copy of which will accompany the ambulances.*
- 2. When we actually request the ambulances, notify the Pembina border crossing at 701.825.6551*
- 3. Before the ambulances leave, Manitoba Health should call the Pembina border crossing and give the ambulance numbers and the names of their crew members.*
- 4. Ambulances should travel as a group and go through the Pembina crossing. Passports are helpful but not required. They can be expedited to the front of the line. They will need to have:*
 - a) a copy of the letter from NDDoH to Manitoba Health*
 - b) Proof of Canadian citizenship - either drivers license, birth certificate, or passport*

The Canadian plan for managing missions was to receive the request for mission in Canada and relay it to the staging area. The staging area would communicate with ambulances within range via an 800Mhz radio. Frequencies in use by Manitoba EMS are

*Frequencies: 861.937 PL 754
861.521 PL 156.7*

An FCC representative is available to DES during the emergency response who can quickly obtain a waiver as long as the frequencies will not interfere with local frequencies. North Dakota EMS does not use 800 Mhz but Minnesota does in some areas (e.g., Minneapolis) and FM ambulance may use 800 mhz to communicate with Twin Cities ambulances.

Canadian ambulances will also carry VHF radios and will program them to communicate with ND radios as: VHF 155.340 U4 Simplex VMED28W.

Patient Tracking

The patient tracking system is capable of tracking all types of institutionalized patients including acute care, long term care, assisted living and group homes⁴. Implementation at a site will require that the facility staff be trained in accessing and editing in the system. It is not necessary that all sites have scanners and training to use the scanners. A large number of scanners are located across the state, but primarily in acute care institution. Scanners increase the speed of patient entry and NDDoH holds some scanners at the warehouse which can be deployed to specific sites as needed for flood response.

Assessment of each patient will include type of transportation requirement (consistent with EMS algorithm and including bariatric status) and the patient’s movement status (pending/active/complete)⁵. When a patient is put into the system, a standard set of blank fields is created which can be edited on the web by anyone able to log into the secure system. An assessment team (likely EMS in most locations, will input the patient, but a regional EPR or the LTC staff could also input a patient into the tracking system). LTC may also add additional clinical data using the secure website.

⁴ It can also be used to track medical shelter residents.

⁵ Additional information is required to assess patients for placement such as complications which may determine which facility is able to accommodate a specific patient.

At the time of evacuation, EMS would use scanners assigned to them to record the loading of each patient into a transport vehicle and record the vehicle ID. Also at that time, the transport status of the patient would be changed from pending to active. At the time of arrival at the patient destination, the status of the patient would be changed to complete and the system would contain the identification of the institution to which the patient was at that point assigned (“Division” field). In some cases, the patient may not be transported and assigned to another health care institution, but assigned to a temporary care site such as a pre-hospital stabilization site or medical shelter operated by state or local public health. However, for the purposes of the tracking system, the destination of assignment would be tracked the same as for a health care institution.

If the patient is only temporarily assigned pending definitive assignment (e.g., to pre-hospital stabilization site), the tracking system will track the patient through subsequent transport and arrival at the next site. Similarly at the time of repatriation, the patient would be tracked through transport and arrival back at the institution of origin. If the patient is discharged prior to repatriation, they will be closed out of the system. In the event the patient is transported to a non-participating site (e.g., out-of-state facility), the receiving institution would be asked to send the tracking information to the DOC where it would be entered.

Bed Availability Tracking

Bed tracking methods will be the same for flood as for any other scenario which may involve evacuation. The Health Alert Network (HAN) will be used to notify health care facilities that updates of bed availability status need to be input into HC Standard. (In the event that HC Standard is not available or an institution has not been trained to use HC Standard, a standardized spreadsheet can be forwarded to institutions to be completed and filled out.) Tracking of patient beds out-of-state is coordinated by the state health department of that state with aggregate results sent to the DOC.

The HAN can be used to notify institutions selectively, by facility type or across the board. The frequency with which facilities would be asked to update HC Standard may depend on the type of facility and the urgency of placement, and may vary from once per week to twice per day. In the event that placement is urgent, those facilities not reporting may be called by the DOC⁶ to request updated data. HC Standard can track the date and time of last update.

It is assumed that reported bed availability is tentative and that sufficient information may not be available about the specific beds to ensure that a particular patient, especially one with placement complexities (e.g., dialysis dependent, bariatric), can be accommodated. Confirmation of bed availability and actual assignment of patients to beds is made by telephone contact to the institution.

2011 Flood Response Update (Spring Flood) – LTC Beds

The number of LTC beds available to support the facilities that might need to evacuate was insufficient in North Dakota alone. In Fargo, the 10 LTC facilities felt to be at greatest risk were pre-placed (bed identified but not reserved), in addition to a comparatively small number of patients from facilities in other at risk cities. Due to flood risk in Minnesota, options for placement in places other than MN were preferred. Beds in far Western North Dakota (with patient to be taken to the shelter in University of Mary at which place they would be picked up by vehicles from the Western facilities), over population of facilities (five facilities offered 54 additional beds above their licensed capacity), swing beds in critical access hospitals (reluctantly offered due to the relatively low reimbursement rate compared to what an

⁶ The specific assignment in the DOC for calling facilities for updates needs to be designated to a specific entity (e.g., those in operations assigned with placement) to avoid duplicate calls from multiple persons.

acute care admission would provide) and beds in South Dakota were pre-placed in preference to Minnesota beds. About 1,850 patients were pre-placed in all, of which over 1,700 were from Fargo.

In addition to the pre-placement of LTC facilities, Fargo social services (representing independently living vulnerable patients) and New Horizons facility provided a list of patients that they wanted to go to a LTC facility rather than a medical shelter; however, review of the patients' medical description found most of them suitable for the medical shelter with improved beds. Only four patients which appeared to be at high risk for decubitus ulcers were designated for pre-placement.

Activation Of Medical Volunteers - See Volunteer Plan

NDDoH maintains a database of volunteers and their credentials status. If a request comes for volunteers at the local level or for response to state need (e.g., operation of a state medical shelter), volunteers will be activated through the Health Alert Network. Activation does not require a registered volunteer to respond, but provides an opportunity for the volunteer to respond based on the nature and location of the mission. Volunteers activated for state missions will be supervised by state appointed personnel (state personnel or local public health personnel recruited to assist); volunteers activated for local public health response will be supervised by local public health.

Patient Health Care Access and Dialysis

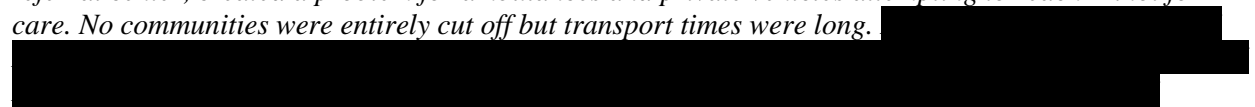
Health care access may be impaired by:

- Closure of inpatients facilities (acute and long term care)
- Closure of emergency rooms
- Closure of clinics
- Closure of special services (e.g., dialysis, cancer treatment)
- Restricted access or long travel times for EMS or patients due to flooded roads
- Outpatient / ER surge surrounding communities
- Staff loss (e.g., displacement of providers from their homes)

A flood may impair a local health care delivery system which supplied health services to the population in the flood area and beyond it. Facilities may shut down services in preparation for evacuation, or flooding may destroy infrastructure. In some circumstances, emergency room services and outpatient services may remain at least partially operational longer than inpatient services since large scale patient evacuation would not be required to shut down those services. Clinics, dialysis centers and other health care sites would close when the local population evacuates and may or may resume services simultaneously with reentry of the population into the area. In addition, road access may be impaired for some citizens outside the community who use health services in the community. Reaching a provider may require traveling much longer distances. Finally, during the repatriation period, recovery of the general population may occur more rapidly than recovery of the provider population (potentially affecting inpatient and/or outpatient care)

2011 Minot Flood (Summer) Update:

During the Minot flood, access was impaired to health services; of greatest concern was access to emergency services. The emergency room was south of the river which had very limited access across it. The hospital used a pre-hospital stabilization kit as the core of an ER on the North side of the river. In addition, road flooding both in the Minot area and in surrounding communities which used Minot for a referral center, created a problem for ambulances and private vehicles attempting to reach Minot for care. No communities were entirely cut off but transport times were long.



Problems with utilities raised the question of whether the referral hospital in Minot could remain open. Because loss of this referral center would have serious consequences for patient care, NDDoH and the hospital exerted considerable effort to keep the hospital open despite serious logistical challenges. This proved to be the right decision. The hospital did choose to close some ancillary facilities which provided some types of services such as dialysis and psychiatry.

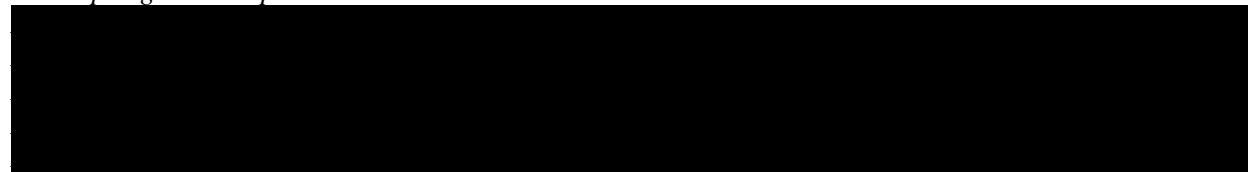
When a population loses access to health care, it is incumbent on the public health system to ensure that adequate services exist until normal access is re-established. Establishment of medical linkage for evacuees may occur several ways including:

- Spontaneous movement of the population to facilities not affected by the flood. Depending on the size of the flood area affected, this may cause substantial overload in health care facilities in nearby cities; however, it is also likely to be the most common accommodation for lost health care in North Dakota following a flood. If a local facility is being overwhelmed, public health will use media messages to notify the public of the overload and offer alternatives for more available care. MRC volunteers may be available to supplement overwhelmed staff.
- Matching of specific patients to specific services, especially dialysis centers. NDDoH recommends that dialysis replacement be coordinated through NDDoH. The Health Services Section works with the Renal Network to ensure alternatives are available⁷. Other special services are less problematic and can often be arranged by local health care facilities or persons who need special care.
- A local health care provider, such as a hospital or clinic that was displaced, may be able to establish some or all of their services in a new location. This may require state and federal waivers and licensure action. In addition, NDDoH may elect to provide immediate access to a pre-hospital stabilization kit for use as a clinic site.
- State established pre-hospital stabilization sites (without or without availability of a federal medical station) may be opened near the flood zone to ensure that emergency medical patients are stabilized and transported to a health care facility able to provide definitive care.
- Federal DMAT – At the request of the state, a DMAT team may be activated to provide emergency care near the flood zone. Due to cost, burden on the federal system and potential concerns of health care facilities about diversion of patients away from the private health care system, this is lower acceptability option.

2011 Minot Flood (Summer) Update

With closure of the dialysis center in Minot, all patients being dialyzed in Minot were re-scheduled at alternate facilities. While no patients were forced to move to another city solely due to dialysis availability, some patients did have to drive more than 100 miles several times a week to obtain dialysis. Substantially greater distances required to accommodate dialysis patients in future floods may require temporary sheltering of patients in alternative cities with available dialysis.

2011 Spring Flood Update



⁷ Dialysis centers across the state can take a few additional patients on a sporadic basis, but none could handle a large volume of patients without adding an additional shift. Since nurses to staff an additional shift would need to be experienced, the only reasonable source would be the health care facilities from which the patients were displaced. In addition, the receiving facility would need additional materials including dialyzers and dialysate.

State and local public health will attempt to provide information to populations remaining in the area near the flood, as well as those displaced, about available health care options, especially for receiving urgent care until the medical community in the flooded area is reestablished. In the event of long term flooding, public health will make information available about health care services and capacity for new patients which can be accessed in nearby communities for longer term care.

Pharmaceutical Access

See Plan: *Summary of Approach to Medication Provision during a Disaster – Revised* found in the document library at

Health Alert Network > EPR > NDDoH > Plans > State EOP Support Annexes > Sheltering and Evacuation

During a flood disaster, NDDoH is prepared to offer emergency access to medications to persons affected by the flood who cannot afford them. In the event the disaster is federally declared, NDDoH will request FEMA to activate the Emergency Pharmacy Assistance Program which provides federal coverage for emergency pharmaceuticals and avoids the process of state or local FEMA reimbursement. The intent of both state and federal plans is to provide pharmaceuticals through local pharmacies.

These programs, in and of themselves, do not address of the common problem of evacuees who do not have documentation of the medications they are on (prescription or bottles). Regulatory barriers which may impair meeting the needs of displaced persons may have to be managed through an executive order. If a pharmacy can determine a patient's prescriptions with a phone call to another pharmacy or to a provider, that would be acceptable. In the event the prescription cannot be confirmed, the patient will need to see a provider. In the setting of a medical shelter, a medical officer should be available who can see the patient (the venue will depend on the arrangements that have been made, but may be managed through the emergency room, clinic or a scheduled number of hours when the medical officer is present in the shelter). In a community setting, the patient would need to seek assistance from a provider site as described above under Access to Health Care.

Medical Support of Rescue Operations - See Plan located at:

ND Department Of Health > Health Alert Network > EPR > NDDoH > Plans > State EOP Incident-Disease Specific Annexes > Flood Response Plans

In the event that an area is flooded prior to evacuation, rescue operations will be necessary if the population in the area cannot safely self-evacuate. Persons in the flooded area who either

- Develop acute medical problems, or
 - Suffer adverse consequences due to the disaster conditions (e.g., hypothermia)
- will not be reachable by EMS. The Medical Support of Rescue Operations Plan describes approach to joint EMS and rescue team action should that be necessary⁸.

Summary of Air and Water Support Operations

During a flooding event in which a risk for emergency evacuations is possible, North Dakota would have access to two to four Coast Guard helicopters which are preferred for population evacuation should that be necessary. These are units trained for disaster evacuation and have attached medical support. NDNG also has helicopters but are not specifically trained for air evacuations and have no medical support. Air rescue operations can be expected to be located at airports; however, a patient drop zone may be utilized closer to the rescue area from which ground based ambulances could pick up patients and take them to a PHSS site.

⁸ Some rescue teams (Coast Guard) will have embedded EMS personnel support.

Fargo hospitals and other large referral hospitals have helipads above water level which could be used for patient evacuation, for patient receiving or for hospital to hospital transfer. If used for patient transport rather than air rescue, Coast Guard vehicles can accommodate 10 persons sitting or one to two stretchers (depending on how floor space has been configured). Additional air transport resources include one medical helicopter in Fargo and one in Minot with additional craft available in Minneapolis. In addition, once patients reach the airport, they can be carried by fixed wing to distant destinations if indicated.

State Fish and Wildlife has 14 airboats which could be used for evacuations as a last resort, including hospital or health care facility evacuation. However, they are not considered to be a medical resource. In addition, Fish and Wildlife has flat-bottomed boats which might also be used for patient rescue if necessary. Regardless of specific resources used, patients would be expected to be dropped at designated drop points where they could be picked up and transported to a hospital or a PHSS if medical evaluation or treatment was indicated.

Pre-Hospital Stabilization - See Plan located in the document library at:

ND Department Of Health > Health Alert Network > EPR > NDDoH > Plans > State EOP Support Annexes

In the event that flooding occurs in an area without an operational emergency department (e.g., small population area, hospital closure due to flood) or the hospital is overwhelmed with casualties, a Pre-Hospital Stabilization Site (PHSS) can be activated to receive patients (e.g., from rescue vehicles), provide stabilization and coordinate transfer to definitive medical care.

Maintaining Standards of Patient Treatment During A Disaster

Any disaster may be associated with a sudden marked overload of the health care system, possibly resulting in patients receiving care which is below the usual standard of care. Although unavoidable in some circumstances, NDDoH will seek ways to mitigate the reduction in quality of care by moving resources into the response area (e.g., Pre-Hospital Stabilization Site, DMAT) or moving patients out of the area which is experiencing stress severe enough to impair quality of care.

2011 Flood Response Update – Federal 1135 Waiver

The DOC prepared letters for signature by the Secretary of DHHS early, but were not able to process them until after a Stafford Act declaration which did not arrive until late. The process for preparing the final letter was rushed due to looming risk of Government shutdown within a few hours. A draft letter was forwarded to ██████████ who convened a meeting with CMS representatives and NDDoH representatives to discuss the situation. The letter was revised to request only a Section 1135 waiver and a HIPAA waiver. It was decided that a separate request for EMTALA waiver and Section 1115 was not needed. The letter largely paralleled the letter of 2009 and was signed without difficulty.

Recommendations for Evacuation of General Populations or High Risk Subgroups

The decision to evacuate a population will not ultimately rest with public health; however, NDDoH or local public health may be called up to make recommendations regarding the advisability of evacuating some or all of a population which is at flood risk. It is assumed that as long as adequate advance notice is received that persons without physical impairments (or communication barriers which prevent advance notice) can see flood waters rising and relocate away from the area⁹. NDDoH will adopt a conservative approach which at least ensures that those least able to escape flood waters, those at greatest medical risk and those who cannot self-evacuate or be evacuated quickly be removed from areas at risk of flooding.

⁹ In areas near a levee which experiences a large breach and with high outside to inside water level differential, water may rise so rapidly that even healthy persons may not be able to escape the flooding.

This might include persons who would be delayed in receiving an evacuation order (e.g., hearing impaired, mentally impaired, those without a phone to receive reverse 911 notifications). Defining the point at which vulnerable population evacuation would be recommended is difficult. It may be at any point after which flood waters outside the levees are higher than the elevation of the area being considered for evacuation but would need to take many of the afore mentioned factors into consideration.

NDDoH will seek to have all vulnerable persons assessed pre-event with identification of location and transportation requirements and registration in the patient tracking system by triage number. Pre-evacuation planning will pre-route transportation resources into potential target area for evacuation to retrieve specific individuals based on their transportation need. Persons in areas at risk for most rapid flooding and persons with least ability to act to escape flood waters will be highest priority for evacuation. Identification of persons requiring registration in small communities is not considered to be a problem. Identification of individuals in larger cities will depend on community services lists and voluntary identification of need if a disaster registry has not been set up in that community.

NDDoH, in cooperation with local public health, will support transportation for vulnerable residents from flood threatened areas to a temporary staging site or shelter (medical or general population). Evacuation will be handled as if homes in the evacuation area represented a single long term care facility. Stretcher and wheelchair buses, wheelchair coaches and ambulances available in the vehicle staging area will be dispatched to specific addresses to load persons who need transportation. Vehicles will be staffed with health care professionals who are trained to load persons into these conveyances. Persons will be tagged with a medical wrist band which will be scanned into the NDDoH patient tracking system at the time they are loaded on the bus. If the number of persons to be moved is large or the rise of water is rapid, vulnerable persons evacuated from their home will be dropped at a temporary staging site then subsequently transported to a final destination. In most circumstances, the next destination will be a reception center (or they may be screened at the general population shelter to determine appropriate destination if the number of evacuees is small).

Operation of Shelters – See Sheltering Plan and Sheltering Field Guide in the document library at: ND Department Of Health > Health Alert Network > EPR > NDDoH > Plans > State EOP Support Annexes > Sheltering and Triage

Public health is responsible for medical sheltering of displaced populations. Two primary sites have been identified for placement of medical shelters: University of North Dakota in Grand Forks and University of Mary in Bismarck. Medical sheltering locations are not limited to these locations; however, it is not possible to define all the possible sites that might be used. It is desirable to have the medical shelter reasonably proximal to the community being evacuated and to the general population shelter if possible. NDDoH will provide support services (environmental assessments, disease surveillance, medical supplies) for general population shelters as well as medical shelters.

Credentialing and Activation of Volunteers - See Volunteer Plan in document library located at: ND Department Of Health > Health Alert Network > EPR > NDDoH > Plans > State EOP Support Annexes > Volunteer

Operation of shelters or alternative sites for acute care access are likely to require a substantial number of volunteers, both licensed and unlicensed. Prior experience suggests that both PHEVR volunteers and spontaneous volunteers will be available. NDDoH manages the credentialing of volunteers signing up with the PHEVR/MRC system including rapid credentialing of spontaneous volunteers. Registration with PHEVR/MRC is a requirement for a volunteer to be working under the supervision of public health and

receive state tort liability coverage as a consequence of being assigned disaster response duties by public health¹⁰.

Health Policy

Unique circumstances affecting the health care system during a flooding disaster may make it necessary to alter certain statutory or regulatory requirements affecting health care providers. Temporary changes based on an executive order of the Governor might include the following:

- Provision of health care services by retired providers, providers from out-of-state or volunteers;
- Provision of health care services outside the normal scope of practice of specific licensed providers;
- Expansion of health care beyond an institution's licensed capacity;
- Transport of patients in vehicles other than ambulances;
- Alteration in EMS treatment protocols to deal with local surge;
- Changes in statues for management of deceased in a mass fatality event;
- Changes in mandatory disease reporting;
- Changes in transport restrictions on scheduled drugs;
- Refill of prescriptions without a physician prescription.

Other policies may also be established which do not involve suspension of law or regulation (e.g., need to standardize response or maximize resource utilization). These policies will often arise from the DOC or from the authority of the State Health Officer.

Change in state health policy will be managed by the DOC in cooperation with the Department of Emergency Services and the Office of the Governor. However, some health care policy is set at the federal level and cannot be changed by state action. NDDoH will assist health care facilities obtain waivers of state licensure requirements or federal waivers (e.g., Medicare, EMTALA) when indicated.

Infectious Disease Surveillance and Disease Control

Any aggregate living setting, such as a shelter, is at increased risk of disease outbreak. The Division of Disease Control will collect and monitor shelter data to determine if patterns of illness are apparent which may indicate disease transmission in the shelter and to identify sources and control transmission if outbreaks occur¹¹. In addition, populations outside of shelters may be at increased risk of food or waterborne illness due to flood water contamination (e.g., well contamination). Other types of disease clusters may also appear, especially carbon monoxide poisoning due to use of generators or other fuel burning sources (e.g., camp stoves) in enclosed spaces.

Local public health is often called upon during floods to give large numbers of tetanus vaccines; however, the public health indication is not driven by flood risk (no increased risk of tetanus exists during flooding), but by a general desire not to miss opportunities to bring persons up-to-date with preventive services. The press of other response needs will determine whether this is a priority activity. The Division of Disease Control will provide guidance to local public health on this issue.

State Tactical Communication Systems

¹⁰ Responsibility for volunteers, including liability, depends on the requesting party. Generally if LPH requests volunteers, it will be the responsibility of LPH to provide for them and cover their liability (local government tort). If private health care requests volunteers, generally the requesting institution will be fully responsible. Volunteers placed by the choice of NDDoH, whether placed at a state or local level, would fall under state management.

¹¹ NDDoH will provide disease surveillance for all operational shelters in the state. Although considerable debate and variation in practice has existed related to shelter surveillance, the dominant view in NDDoH is that shelter surveillance can be passive with daily aggregate number reporting of syndromes of illness identified in the shelter. Specific resident information is not necessary unless evidence of an outbreak is detected. Evidence of outbreak will result in Disease Control investigators going on-site to evaluate the outbreak.

NDDoH will be responsible for ensuring communication within the public health and health care sector. This may involve:

- Convening regular or as needed videoconferences of all health and public health providers statewide;
- Providing disaster communication kits where normal communications channels are or may be impaired;
- Dispatching a mobile communication trailer which can serve as a field incident command station or fill a gap in communication technology;
- Activating local emergency radio broadcasts to populations which have impaired ability to receive emergency response information ;
- Following incident command protocols to ensure contact can be made between incident commanders for state and local public health/health care;
- Supporting data collection and dissemination (e.g., bed tracking, patient tracking, disease surveillance, mortality surveillance);
- Providing Internet-based ordering of medical supplies or sheltering supplies;
- Providing Internet-based registration and credentialing of volunteers and automated activation of volunteers for specific missions; and,
- Providing Internet-based tracking of emergency response vehicles and personnel at staging areas.

Federal Assistance Coordination

DHHS routinely provides disaster response experts to monitor state and local needs and mobilize federal assets should they be needed. Federal officials are provided full access to state response and communications equipment in the DOC (primary or extended location). The NDDoH incident commander will work with federal officers to determine which, if any, federal assets need to be mobilized (e.g., DMAT, federal medical stations, contract ambulances), where they should be located and resources they will need to support state response operations.

Inter-State Assistance Coordination

Large scale floods, particularly of the Red River, may make use of public and private assets from other states necessary, especially placement of patients in health care institutions and mobilization of emergency transportation resources. The process for securing these resources (bed availability, patient placement, ambulances) will follow the protocols established by the assisting state (e.g., either working with the owner of the resource or working through the department of health for that state).

Systems for inter-state information sharing are under development within the Heartland Planning Coalition which includes states in DHHS region 7 (Nebraska, Iowa, Missouri, Kansas) and Region 8 (North Dakota, South Dakota, Montana, Wyoming, Colorado and Utah). Information content will include disaster event status, communication methods, bed status, facility status, patient tracking, transportation and other resource data and financial information. However, the state likely to receive the most patients from North Dakota (Minnesota) is not part of the region, so data sharing systems will be adapted to that setting.

Support for Public Health and Medical Reimbursement (e.g., FEMA, Medicare)

NDDoH will provide information to response partners re: how to maximize the likelihood of receiving health care service reimbursement or insurance/FEMA cost recovery. As noted above, NDDoH may assume certain public health functions when they cannot be fully managed at the local level since FEMA will only recognize a single entity as eligible for reimbursement for any disaster response service provided. NDDoH has attempted to standardize commonly used resources through contracts made directly with NDDoH. This allows cost tracking and sets prices for specific services.

Mental health care

Public health has a secondary role in supporting population mental health; the provision of mental health care is coordinated through social services. The tasks which local and state public health support are:

- Surveillance for mental health problems during and following a flooding event, including among public health workers;
- Assisting individuals, including public health workers, to connect to mental health services;
- Activating mental health volunteers using PHEVR/MRC;
- Supporting health care systems, including their mental health components.

Blood Services

North Dakota is served by a single blood bank, United Blood Services, which is available statewide 24 hours per day and can ensure adequate blood supplies are available in whatever city in which need is identified.

Public Information – See Public Information Plan in the document library located at:

ND Department Of Health > Health Alert Network > EPR > NDDoH > Plans > State EOP Support Annexes

The public information plan for flooding includes the following potential responses:

- Participation in state JIC and in DOC
- Activation of state hotline
- Coordination of local public information messages through regional PIOs.

Establishing hotlines can be a large drain on the resources of a local public health unit. Since NDDoH has the capacity to staff a hotline, a local public health agency may choose not to open a local hotline, but rather to focus its personnel on alternative responses such as medical sheltering.

Environmental health services

Environmental response to flood includes the following areas:

- Environmental health protection
 - Environmental investigation of shelters
 - Assurance of safety of food and water
 - Monitoring of food and water supplies
 - Closure of establishments posing potential risk to the public
 - Safety of reopened facilities post-flood (food and lodging)
- Environmental protection
 - Securing sources of potential chemical contamination
 - Management of remediation in chemical spill

During flood response, environmental issues in the DOC are usually coordinated by the assignment of a single person from the Environmental Section Office to the Planning Section of the DOC who acts as a liaison back to the Environmental Health Section.

The form to be used for evaluation of shelters came from CDC and included an instruction page. They were approved by the Division of Food and Lodging.

- Env Hlth Shelter Assessment Form-Instr Sheet (5-20-08).docx
- Env Hlth Shelter Assessment Form.docx

Shelters should be evaluated before they are used to ensure reasonable adequacy and may need to be periodically evaluated during the course of shelter operations.

Data

The NDDoH Department Operations Center will be collecting, analyzing and disseminating several types of data, much of it on a daily basis if flood impact is high. Specific data elements which will be collected include:

- Asset availability: During periods when health facilities in threatened or flooded areas are being evacuated, the NDDoH DOC will request hospitals and nursing homes statewide to update bed availability on a daily basis. This information will be collected and made available in HC standard. Bed availability will also be monitored in Minnesota and South Dakota if high population areas are threatened such that the number of beds in North Dakota available to fill is likely to be exceeded. In addition, the availability of medical transport in or near the disaster area will be monitored in real time as transport assets are assembled and deployed.
- Patient tracking: As patients are moved from at risk facilities, they will be entered into the patient tracking system to ensure knowledge of their location is available to all persons who need to know (emergency operations, health care facilities, and public inquiry response lines).
- NDDoH will track the status of flood risk across the state to anticipate the need for response including the identification of nearby resources and the pre-positioning of assets in the response area.
- NDDoH will track the quantities of remaining sheltering supplies and medical supplies in the cache as they are deployed for response.
- As areas become threatened by flood, it may be necessary for some health care providers to close. NDDoH will seek to track which health care providers in a flood threatened area remain open to receive patients so that information can be disseminated to the public.
- Collection of information related to environmental threats will be collected. This will include potential impacts on surface and ground water supplies for drinking, contamination of food supplies, adequacy of sanitation of congregate living areas and environmental spills.

Public Health Need Assessment

Local public health in the flood risk area will be the primary link for the remainder of the public health system to understand the scope of the disaster and attendant risk and the need of the local jurisdiction for additional public health assistance. During the period of flood response, this information is shared daily to all public health entities in the state and all health care facilities.

In the event of large population areas becoming flooded, it may be necessary to conduct community-based assessments of population health needs including access to medical care, access to mental health care, access to medications, housing needs, access to clean food and water, environmental exposures and health risk behaviors. If this information needs to be collected over a wide geographic area with flood damage, it may be necessary to use a CASPER (Community Assessment for Public Health Emergency Response)¹² model.

http://www.bt.cdc.gov/disasters/surveillance/pdf/CASPER_toolkit_508%20COMPLIANT.pdf

Mass Fatality – See Mass Fatality Plan

The intent of emergency preparedness, including pre-emptive evacuation, is to ensure that mass casualties do not develop due to flooding. In the event of flooding into an area which has not been evacuated, mass fatality is possible. Mass fatality response to flooding will be directed by the State Forensic Examiner. That investigation will be supported by the DOC and may need to draw upon local resources for assistance.

COG/COOP

¹² Because CASPER is resource intensive, NDDoH will generally only use it when quantification of need is required. In most circumstances, non-randomized conversations with residents in affected areas will provide a qualitative measure of the types of problems and needed assistance.

In the event of major flooding, local public health functions may be threatened by no-show employees (due to loss of home or threat to home/family) or lost access to public health facilities due to flooding. Local public health will need to activate COG/COOP plans to ensure continuance of basic public health services and flood response. (Note: It is not anticipated that NDDoH COG / COOP plans would need to be activated by a flood event.) NDDoH will play a support role to local public health. The scope of NDDoH response to local public health COG/COOP plan activation may include:

- Assuming additional flood response tasks that would normally fall to local public health;
- Through the assistance of adjacent local public health units, arranging cross coverage of geographic areas affected;
- Providing immediate emergency response resources (e.g., communication equipment, material) to assist the local agency to re-establish public health operations;
- Providing NDDoH or other LPHU personnel to assist with personnel gaps arising due to impairment of local public health critical services.

COG/COOP planning by local public health should help minimize the amount LPHU response impairment. At a minimum, a LPHU at potential risk for flooding should have a plan for securing patient records and other critical information prior to flooding and have a plan for communicating with employees in the event of loss of the public health facility.

Additional Response Requested by NDDoH or Local Public Health

The Department of Emergency Services (DES) will direct flood response for the state. NDDoH has primary assignments from DES for which it assumes the lead roles and additional secondary assignments for which it assumes a support role to one or more sister agencies. In addition, NDDoH may receive requests from NDDoH for response to issues outside its usual jurisdiction, to which it will respond within the limits of its ability.

Local public health may be limited in its ability to respond to a disaster; these limitations may arise from insufficient public health capacity, local administrative barriers or local public health response impairment due to flooding. NDDoH will assure the provision of any critical response function which cannot be assumed by the local public health jurisdiction. This response may include:

- Assumption of incident command management of a task;
- Mobilization of cached state resources or purchase of additional resources;
- Assignment of additional personnel to the area;
- Mobilization of regional disaster response personnel from other parts of North Dakota not dealing with flooding;
- Recruitment of assistance from NDDoH or federal partners

2011 Flood Response Update - Daycare

A large number of NDDoH staff were assigned to various teams including some ad hoc teams needed for specific flood response roles. Activating NDDoH staff for 12 hour shifts creates a problem for some staff with small children. The DOC responded by creating an ad hoc team of ten people who will serve as day care providers while other staff are assigned other tasks, but staff will have to pick up their child after the 12 hour shift. This does not entirely relieve the problem of staff having the leave to pick up children from school, and for some (due to choice) pick up from other day care settings. See separate policies related to day care.

- *Day care would only be used when the DOC was open at least 12 hour days AND the EPR Section needed to use employees from outside the EPR Section.*
- *Not all employees were comfortable with this arrangement, but it was understood that if this was not an acceptable option then the employee would be responsible for securing their own day care arrangement.*

- [REDACTED] agreed to provide space for the day care in their youth room should NDDoH need it. The space offered was suitable for perhaps 20 children.
- 10 may not be enough workers particularly if some of the workers need to bring some of their own children. The arrangement would reasonably limit the number of children per worker to four or five (depending on the number of small children) and at least two workers would need to be on duty at all times.
- A sign-in form was created for parents (daycare form.pub)
- It was arranged for parents to be able to order meals for children from the same caterers that would be providing meals for the DOC. Parents would be responsible for payment.
- A pallet of daycare material was developed.