Meeker
McLeod
Sibley
Community Health Services

Local Health Disaster Plan Guidance

For the Health and Medical Annex

To The Local Emergency Operations Plan

February 2015

Prepared by: The Local Public Health Preparedness Review Group
Of the State Community Health Services Advisory Committee

12/1/2003
Revised 7/22/2005, 2/2015, 10/2016

Meeker-McLeod-Sibley Community Heath Services
Local Health Disaster Plan Guidance
For The Health and Medical Annex
To The Local Emergency Operations Plan

TABLE OF CONTENTS

I. Preparedness: Purpose, Scope and Objectives

A. Purpose

Communities in Minnesota are subject to emergencies that can pose a significant risk to the public's health. Examples include large outbreaks such as meningococcal meningitis; vaccine preventable disease outbreaks, including pandemic influenza; and civil emergencies such as a terroristic attack, flooding, tornadoes, and other natural disasters. A public health and medical annex in the county emergency operations plan enables communities to continue to operate; to carry out functions to protect the public's health, and, in some cases the environment; and to prevent the occurrence and transmission of disease.

This guidance document is designed to help local public health departments and emergency management plan and prepare a health and medical annex that will enable the community to respond efficiently and effectively to an emergency involving a public health response. The completed health and medical annex will be one part of an all-hazard county emergency operations plan and therefore is considered public health's all hazards emergency operations plan.

The guidelines are adaptable to situations where the local health department is the lead agency in the response (such as disease outbreaks) and where the local public health department plays a supportive role to emergency management (such as floods or tornadoes).

For the purpose of this document, the local public health department services are those functions provided by local community health boards, which may include environmental health, public health nursing, and disease prevention and control activities.

B. Scope

When confronted with a small-scale public health emergency, local public health departments, with the support of the Minnesota Department of Health (MDH), respond independently of other state and local agencies. In the event of a large-scale emergency/disaster, the actions of the local public health department must be closely coordinated with local emergency management to respond effectively. This agency coordination extends to other local, state, federal and non-governmental agencies, as necessary. The health and medical annex should describe relationships and responsibilities for conducting a coordinated public health emergency response effort.

The level of response activities will vary by the size of the emergency. This planning guidance does not differentiate between small and large-scale disasters. Individual plans should be written to accommodate the variations in response activities.

C. Objectives of the Health and Medical Annex

The objectives of the Health and Medical Annex to the county emergency response plan include the following:

1. To maximize the protection of lives and properties.

2. To ensure local public health and local emergency management organize a response effort based on the Minnesota Incident Management System (MIMS).
3 To delineate roles and responsibilities for other local, state, federal agencies and non-governmental agencies participating in the emergency response.
4. Develop a health and medical annex for the county emergency operations plan that is consistent among all local jurisdictions.

D. Assumptions and Considerations

LPH will use the National Incident Management System (NIMS) as a basis for supporting, responding to, and managing Plan response activities.

Incidents are managed at the lowest possible geographic, organizational, and jurisdictional level using the Incident Management System. Furthermore, incidents may:

- Occur at any time with little or no warning.
- Require significant communications and information sharing across jurisdictions and between the public and private sectors.
- Involve single or multiple geographic areas.
- Involve multiple varied hazards or threats on a local, regional, state, or national level.
- Impact critical infrastructures.
- Overwhelm the capabilities of local and tribal governments.
- Require short-notice asset coordination and response timelines.
- Require prolonged, sustained incident management operations and support activities.

LPH may have to make provisions to continue response operations for an extended period of time in cases of a major disaster or catastrophic incident.

This Plan reflects the additional assumptions and considerations below:

- The highest priorities of any incident management system are always life/safety for responders, and public health and safety for the citizenry.
- LPH has planned, prepared for, and will respond to health emergencies locally/regionally.
- District Office Emergency Response Teams will work as liaisons with local public health, communicating local health needs to the state.
- The standards of care for the public may be adjusted in a major incident or catastrophe, such as in an influenza pandemic.
- LPH will follow MDH guidelines regarding prioritizing who receives prophylaxis.
- LPH will support and work in partnership with local response efforts.
- Plan Functions and LPH personnel may be assigned to assist local government under the direction of a local incident management system, or may be assigned to various roles or tasks within a Regional, a State or a Federal level incident management system.

The degree of LPH involvement in a response to a given incident will depend largely upon the applicability of specific LPH authorities or its jurisdictions. Other factors that may also affect the degree of LPH involvement include:

- Requests for assistance.
- The type or location of the incident.
- The severity and magnitude of the incident.
- The need to protect the public's health and welfare.

II. Pre-Event Planning Activities

A. Pre-Event Response Team: Public Health Emergency

The purpose of this section is to identify a response team that will perform a variety of functions during an emergency that may affect the public's health. This team will have a role in identification of the threat and is responsible for providing expertise regarding the response to the emergency. Throughout this guidance document the team will be referred to as the ***public health response team.***

It is important that ***prior*** to a public health emergency the local public health department and local emergency management identify members of this public health response team. A contact person and an alternate may be identified from each of the following agencies/departments and is not limited to this list.

- Local Public Health Department-Director/Supervisor
- DP&C/Emergency Preparedness Coordinator/Supervisor
- Local Emergency Management Director
- Environmental Health/Environmental Services Director
- The MDH district office staff – Public Health Preparedness Consultant, Epidemiology Field Services, District Nurse Consultant, and a Consulting Sanitarian if feasible.
- Sheriff's Department/Law Enforcement
- Local Policy makers-County and City Officials

Planning efforts prior to an emergency will be fostered through monthly meetings with county Emergency Managers and local public health staff, including leadership. Planning efforts will also be facilitated through quarterly MMS Emergency Preparedness meeting of healthcare agencies, county social service agencies, and regional MDH staff. Additionally planning effort will be happen at a regional level through the South Central Healthcare Coalition.

III. Emergency Response Management

The following guidelines will assist local, state, federal and non-governmental agencies identify when this plan needs to be activated and define their roles and responsibilities during an emergency affecting the public's health. The emergency response recommendations in this guidance document pertain to incidents that impact the public health of the community.

A. Activation of the Health and Medical Annex

1. Trigger Points and Thresholds to Activate the Plan

See **Attachment C**

2. Initial Notification of an Emergency

Either the local public health department or emergency management may be the initial contact for the county or city when there is an emergency with potential public health implications. These two agencies will be responsible for assuring the other public health emergency response team members are notified in order to initiate the first meeting of the response team.

The county Sheriff's Departments of Meeker, McLeod and Sibley Counties will support 24/7 access to public health department through their dispatch system. After work hours staff will be paged thru the respective County Sheriff's office dispatcher. An on-call schedule will be developed annually and shared with the Sheriff's Department. The Sheriff's Department will be made aware of any changes to this schedule. In the event of an emergency, the on-call nurse will then contact the Meeker-McLeod-Sibley Community Health Services Emergency Preparedness Coordinator and their respective Public Health Director or designated alternate.

Administration of the response is based on an incident command system in Minnesota known as the National Incident Management System (NIMS). Command and control of the response is coordinated through the incident commander. Please see description and diagram of the MIMS Incident Command System in **Attachment B.**

The National Incident Management System is applicable for public health and other related emergency incidents. The local incident commander will designate the local health department as either lead response agency or as supporting role to local emergency management. A diagram of the NIMS system used is in the County Emergency Operations Plan (EOP) in **Section 3 Direction and Control.**

Local health department staff that will carry out preparedness and response activities should receive NIMS training. This can be arranged through local emergency management staff in cooperation with other local, state, and federal agencies.

2. Initial Meeting of the Public Health Emergency Response Team

In response to an emergency involving public health, the local public health department and emergency management will initiate a planning meeting of the public health emergency response team at a pre-designated site. At this first meeting the county may want to focus on the following items:

a. Characterization of the emergency (e.g. disease outbreak, biological/chemical/radiological or terroristic event), or natural disaster.
b. Assessment of the number of persons (e.g. dead, injured, exposed) and extent of area affected
c. Identification of populations at risk
d. Determination of the need to implement the county emergency operations plan

3. Initial Emergency Operations Center Activation

If the public health emergency response team determines that it is necessary to implement the county emergency response plan, a local Emergency Operations Center (EOC) may be activated.

a. EOC Staff Composition

When the EOC is activated, the following individuals may be considered for staffing the EOC:

- Members of the public health response team
- Public Safety/Sheriff's Department (essential liaison to State Homeland Security and Emergency Management (HSEM) and the Governor)
- County Coordinator/Administrator;
- Chair of the County Board of Commissioners;
- Other city and county officials; and
- Other members who may need to be included based on the initial assessment of the disaster.

After activation of the EOC the incident commander will assign roles and responsibilities as identified in MIMS. These job duties are detailed in **Attachment B.**

Local public health departments must determine who, within their departments, will lead and/or participate in the response as well as other staff (by name or job description). These job descriptions should be consistent with those already existing in NIMS. Please see the NIMS **Attachment B** for full job descriptions and role of public health within the NIMS structure.

4. Ongoing Meetings of the Public Health Emergency Response Team

The emergency manager, in collaboration with local public health, is responsible for coordination and implementation of the county emergency operations plan during an emergency. Along with the issues that initiated the activation of the county plan, the public health response team may address the issues listed below.

a. Issues to Consider

- Who will need information about the emergency before release of information to the public?
- What is the anticipated community response to information about the emergency?
- What resources will be needed to respond to the emergency?
- Identification of factors and person who will terminate the plan.

b. Identification of other parties to be involved

Depending on the threat and scope of the emergency, the following individuals and/or organizations may need to be involved in the response. Identification of other key persons to be involved in the emergency response and possible roles for each of these key persons should be developed by the county or by the public

health response team and based on the resources available. Contact information should also be part of the public health department's local Health Alert Network.

- Other county/city departments
- Law enforcement
- Firefighters
- Utilities
- Public Works
- County medical consultant
- Physicians/clinics
- Hospitals/emergency medical services
- Infection control practitioners
- Medical association
- Clinical laboratories/environmental laboratories
- Primary/secondary schools
- Post secondary schools (universities, colleges)
- Pharmacies
- Other public health departments
- Other health professionals:
  - Mental health specialist
  - Epidemiologists
  - Public Health Nurses
  - Sanitarians
  - Health Educators
- Office Staff
- Dentists
- Chiropractors
- Veterinarians
- Home care services
- Handicap service providers
- Industries/occupational health nurses
- Clergy
- Transportation
- Long-term care facilities/group homes
- Daycares/preschools
- Community organizations:
  - American Red Cross
  - Salvation Army
  - Private home care agencies
  - Medical examiner's/coroner's office
  - Media
  - Department of Military Affairs-National Guard
  - Minnesota Department of Transportation
  - Minnesota Board of Nursing
  - Minnesota Duty Officer

Notification of impending and actual public health emergencies from the MDH to local health

departments will occur through the HAN. Correspondingly, local public health departments must maintain their local HAN to notify local individuals and agencies, which will be part of the public health response to the emergency. At the state level, this is coordinated with the Duty Officer at the MN Dept of Public Safety Division of Homeland Security and Emergency Management (HSEM). At the local level, this is coordinated with county emergency management. **See Attachment D.**

c. The public health emergency response team should develop strategies specific to an emergency that impacts the public's health in each of the following components of the county emergency operations plan:

- Notification and Communication Plan-in the **Public Information Annex**
- Disease Health Threat Investigation-in the **Hazardous Materials Annex**
- Prevention and Mitigation-in the **Evacuation, Traffic Control and Security Annex**
- Public Safety
- Mass Care/Shelter and Clinics-in the Public Health Mass Dispensing Site Plan
- Clean-up-in the **Hazardous Materials Annex**
- Re-Entry
- Emergency Response Evaluation

* Guidance on each of the above components are included in the remaining sections of the guidance document

B. Notification and Communication Plan

The emergency manager with the assistance of the local public health department will identify those key persons who not only need to be included in the message development but also in the distribution of the message (e.g., emergency spokesperson, MDH representatives, county commissioners, county administrator/coordinator, medical consultants). Identification of this response group is particularly important where the public health emergency can or has caused social disruption. Communication to the persons affected must be accurate but also delivered in a timely manner.

The following guidance may comprise a local communication plan for professionals and the public. It is recommended that the local health department coordinate with emergency management and the risk communication staff at MDH prior to an emergency in order to prepare a communication plan that will meet the potential communication challenges that will be faced at the local level.

The county will also involve the Information Technology Department of the county. (See **Notification and Warning Annex** or other appropriate annex in the county emergency operations plan.)

1. Professional Notification Including Information, Guidelines, and Recommendations

a. Professional Message Plan Development

- Maintain a 24-hour, seven days a week, notification plan (24/7 plan) that establishes a process to notify public health staff, local officials and other key personnel to the emergency after hours, on weekends, and on holidays. This is coordinated with emergency management and the local sheriff's office. Please reference the Meeker-McLeod-Sibley Notification and Communication Plan for more detailed information. **See Attachment K.**

- Minnesota's Health Alert Network (HAN) enables public health staff, tribal governments, health care providers, emergency workers, and others working to protect the public to exchange information during a disease outbreak, environmental threat, natural disaster, or act of terrorism.

- MMS CHS will maintain 24/7 access to support services in emergencies through use of the chain of command. This would include outreach to emergency services via 911, requests to the County Emergency Managers, South Central Health Care Coalition, requests to various Divisions of the Minnesota Department of Health, Red Cross and other volunteer organizations, and with requests routed appropriately to the Minnesota Duty Officer. A call-down list of available resources is attached. **See Attachment K.**

- MMS CHS will maintain access to resources and services through a mutual aid agreement with the South Central Health Care Coalition. The intent of the agreement is to assure equipment, surge personnel and other resources are available to each party who is a member of the coalition. In addition, MMS CHS will maintain access to resource and services with the collaboration and coordination of the County Emergency Managers. This functionality is described in Minnesota Statute 12.27, 12.37 and 12.331. **See Attachment H.**

  MMS CHS will maintain provisions for 24/7 emergency access to epidemiological and environmental public health resources capable of providing rapid detection, investigation, and containment/mitigation of public health problems and environmental public health hazards by accessing services and working in partnership with the Minnesota Department of Health, such as Epidemiologist Staffing, Environmental Health staffing and Public Health Laboratory. MMS CHS does not directly provide laboratory services to provide the functions mentioned above. **See Attachment I.**

- Disseminate communication messages to professionals that include but are not limited to the following content:
  - Description of the health threat;
  - Recommendations for action;
  - Public health contact information;
  - Information about how and when updates will be communicated (i.e., informational hotlines, fax, Web);
  - Instructions about how to communicate information relevant to this threat to the public health department; and

- Links to Web-based resources, as appropriate, with alternate access for those without Web access

- Identify which professional groups within and outside the public health agency should receive the health alert message (consider any of the listed parties identified by the public health emergency response team) in addition to the following:
  - Other public health staff not directly involved in responding to the threat; and
  - The MDH HAN, which can notify other public health agencies in the state, the Minnesota Duty Officer at the Minnesota Department of Public Safety Division of Homeland Security and Emergency Management, and other state and national agencies as needed. Activate HAN by sending the developed message to the targeted groups (copy all health alert messages to: healthalert@health.state.mn.us. Send updates, as indicated by events, via local HAN to health professionals and others responding to the health threat.

b. Emergency Response Professionals-Ongoing Briefings

Regular briefings for response professionals may be held at the Emergency Operations Center (EOC). These briefing ensure that emergency response professionals work together in a consistent and efficient manner. In addition to ongoing briefings information will also be distributed through HAN.

2. Public Information and Media Communications

Organization of media spokespersons is accomplished through the establishment of a Joint Public Information Center (JPIC). The purpose of JPIC is to coordinate messages and information to the media and the public from all spokespersons from all of the agencies, and organizations involved in the response.

Communication during an emergency includes two distinct audiences: 1) information updates, guidelines and recommendations needed by health care professionals, and others responding to the emergency; and 2) information disseminated to the public. Also for online information on developing a message plan please refer to:
www.health.state.mn.us/oep/riskcommunications.htm

a. Public Message Plan Development

- Identify extent of public health issue
- Identify the message(s) that need to be developed and prioritize those messages
- Who needs to be notified?
- What communication medium(s) should be used?
  - Newspaper
  - Radio
  - Door to door
  - Broadcast faxing
  - TV

- TDD
- News releases
- Community meetings

- How quickly does the message need to be delivered to those targeted populations?
- What is the message?
- Who will be delivering the messages?
- Are the messages effective and reaching the desired populations? Consider messages in multiple languages.

b. Identify Media Access Controls

- Who will be media contact representative/emergency spokesperson?
- Who will coordinate communications with MDH?

c. Outline Ongoing Briefings

Ongoing briefing assignments will be based upon how the public health emergency proceeds. The EOC members and other identified officials will assist with the development and implementation of the communication messages. The content of the messages to the public must be consistent, accurate and coordinated.

3. Informational Hotlines

The local emergency manager will determine if informational hotlines need to be established. It may be necessary to establish separate hotlines for health care professionals, other emergency responders, and for the general public.

If staffing is an issue for hotline maintenance, local emergency management and local public health may need to coordinate with MDH and HSEM. The MDH can establish a hotline to address specific threats. The HSEM can establish a public information hotline. Either (or both) of these could be used depending on the situation but must be coordinated at the state level. This allows local health department staff who are directly involved in the emergency to concentrate on the response effort.

C. Disease/Health Threat Investigation

The purpose of this section is to identify the process used to determine the cause and extent of the potential public health problem. This includes identifying the populations at risk in order to put in place an intervention and/or prevention programs. In accordance with Minnesota State Statute 4605.7050 and the Disease Prevention and Control Framework, the Minnesota Department of Health (MDH) provides and maintains a centralized statewide infectious disease surveillance system that monitors incidence, demographics, and other appropriate characteristics through both passive and active surveillance. **See Attachment I.**

Cluster Evaluation

Investigating disease clusters of any kind is the responsibility of the Minnesota Department of Health (MDH), who employ scientists that study the frequency, distribution, causes and control

of diseases in populations. The investigations conducted by the MDH epidemiologist must show that the number of observed cases is significantly greater than what they would expect. The MDH epidemiologist will communicate findings of a cluster to Meeker-McLeod-Sibley Community Health Services. A decision to activate the Health and Medical Annex of the County All Hazard Plan will be based on the recommendations of MDH staff, with additional considerations of the MDH cluster evaluation protocols, meeting a trigger point or threshold number. The decision will be made jointly by the Public Health Director, the County Emergency Manager and the MMS Emergency Preparedness Coordinator.

In the case of a terrorism event, the criminal investigation will be coordinated with law enforcement agencies. The FBI, county sheriff or a designated law enforcement official will act as the liaison between public health and the officials conducting the criminal investigations.

Listed below are the minimum elements that comprise a disease investigation.

1. Assessment of the Emergency

a. Detection of Exposure

If an emergency requiring the initiation of a disease investigation occurs, the Minnesota Department of Health (MDH) will communicate with the Meeker-McLeod-Sibley Community Health Services (MMS) regarding need and coordination of the investigation. MDH will take a lead role in conducting the investigation and may ask assistance of the MMS.

MDH will determine the need for active surveillance and collection of specimens. In addition MDH will determine the protocols for active surveillance.

b. Assessment of Potential Exposure

In collaboration with MDH, Meeker-McLeod-Sibley Community Health Services (MMS) will review assessment information of the emergency, including but not limited too; threshold number, potential exposure, at risk population, severity of illness, long term health impacts, economic impacts and other community related impacts. A decision to activate the Health and Medical Annex of the All Hazards Plan will be made by the Public Health Director with input from the County Emergency Managers and the MMS Emergency Preparedness Coordinator.

Notification

If active surveillance is needed, the local public health department may notify (using the local HAN) area physicians/clinics, hospitals, nursing homes, or other agencies affected of the surveillance details including the need to report disease, and instructions about the collection and transport of samples and specimens for laboratory analysis to be evaluated by the appropriate state agencies.

Implementation and Coordination

Local public health in collaboration with Minnesota Department of Health may coordinate active surveillance with local health care providers, including collection of samples and specimens for identification by the MDH Laboratory.

c. Environmental Health Assessment

Sample Collection and Analysis

If environmental contaminants are suspected, the Minnesota Department of Health (MDH) will coordinate sample collection and analysis with the MDH Environmental Health Division to identify environmental contaminants, including contamination of groundwater, drinking water supplies, and food and beverages.

Depending on the environmental medium, environmental health staff of MDH may be responsible for sample collection and analysis, or a contractor may collect the samples and analyze them. The Minnesota Pollution Control Agency and/or MN Department of Transportation will be involved if they regulate the contaminant source. The Minnesota Department of Agriculture will be involved if there's contamination of grocery stores, farm animals, or crops.

2. Conducting the Investigation

The epidemiological investigation will characterize the outbreak/emergency, including source and spread of illness/disease. This includes identifying the agent and the at risk population. Based on this investigation, as well as available assessment data, recommendations will be made regarding prevention/mitigation plans, including treatment and prophylaxis of at risk populations.

a. Epidemiological Investigations

The Minnesota Department of Health (MDH), specifically the Division of Infectious Disease Epidemiology Prevention and Control (IDEPC) will have primary responsibility for coordinating the investigation efforts.

The local public health department may assist MDH coordinate with local providers/clinics, hospitals and other affected agencies when conducting epidemiological investigations to determine the source and spread, populations at risk and to develop a prevention plan. This may include providing staff, phone banks, cell phones, and other assistance, as needed.

The local public health department will provide coordination of investigation logistics, including communications with emergency operations planning staff at the local level. **See Attachment E. Pandemic Influenza Surveillance.**

Protocols for Disease Investigations

The Minnesota Department of Health develops and maintains disease investigation protocols, including cluster evaluation protocols. A limited number are available on the MDH Workspace. **See Attachment J.**

b. Environmental Health Investigations

The Minnesota Department of Health (MDH) will have the primary responsibility for all environmental health investigations in accordance with Minnesota State Statute 144.05 and 145A.07 related to environmental health hazards such as foodborne and waterborne disease outbreaks. **See Attachment I.**

Food and Water

Meeker-McLeod-Sibley Community Health Services may work with MDH, specifically the Environmental Health Division and the Infectious Disease Epidemiology Prevention and Control Division (IDEPC) to investigate food and water-borne outbreaks. This includes an environmental investigation of the food facility or water source suspected of causing the outbreak. For outbreaks occurring at food processing facilities, grocery stores and meat packing plants, this will be coordinated with the Minnesota Department of Agriculture (MDA) and the United States Department of Agriculture (USDA), as appropriate.

Private Well Management

Meeker-McLeod-Sibley Community Health Services, County Emergency Management, other relevant county departments, and local officials will collaborate and coordinate with the MDH Well Management Program and the public to mitigate threats to wells.

Public Water Supply

If public water supplies are involved in a public health emergency, MDH will coordinate and collaborate with Meeker-McLeod-Sibley Community Health Services, County Emergency Management, local officials, public water system operator and other key stakeholders to ensure safe drinking water.

Indoor/Outdoor Air

MDH and the Minnesota Pollution Control Agency (MPCA) will be responsible for investigating illness related to indoor and outdoor air quality. This will be done in collaboration and coordination with local public health, County Emergency Managers, local officials, and other key stakeholders.

Radiation

MDH and County Emergency Management will be responsible for detection and disposal of contaminated materials in order to maintain safety to the public.

Protocols for Environmental Health Hazards

The Environmental Health Division of the Minnesota Department of Health and other appropriate state agencies are responsible for providing protocols for investigations of health hazards and also for continuing environmental monitoring. A few protocols are available on the MDH website. **See Attachment J**

Activation of the Health and Medical Annex

In collaboration with the Minnesota Department of Health, and other relevant state agencies, Meeker-McLeod-Sibley Community Health Services (MMS) will review assessment information of the emergency, including but not limited too; threshold number and trigger points, potential exposure, at risk population, severity of illness, long term health impacts, economic impacts and other community related impacts. Also considered in the decision making process will be information and recommendations provided by MDH related to the protocols for infectious disease outbreaks, and environmental health hazard investigations. A decision to activate the Health and Medical Annex of the All Hazards Plan will be made jointly by the Public Health Director the County Emergency Manager, and the MMS Emergency Preparedness Coordinator.

D. Prevention/Mitigation

The purpose of this section is to outline the elements of a prevention plan to limit exposure and mitigate contamination related to a public health emergency. Information collected during the investigation phase of the response including assessment data and epidemiological data will be used to outline the prevention plan. The teams responsible for implementing the investigation plan may also be responsible for carrying out the activities of the prevention plan.

1. Prevent, Reduce, or Eliminate Exposure

The local public health will assemble a team of appropriate staff to work with local emergency management, the MDH and other agencies, to reduce or eliminate exposure to chemical, radioactive, or infectious biological agents.

2. Prevention Plan

The MDH and the local public health department in coordination with emergency management will have lead responsibilities for directing the development of a prevention plan. Once the prevention plan is identified, responsibilities will be as follows:

a. Food Safety

Describe how the local public health department and environmental health will work with the MDH to ensure food safety. This may include regular inspection of food service establishments and education of food service staff. The local public health department and environmental health will coordinate these efforts with the appropriate agencies responsible for the grocery stores and meat packing plants such as the Minnesota Department of Agriculture (MDA) and the U.S. Department of Agriculture (USDA).

b. Safe Drinking Water

Explain how the local public health department, environmental health, local emergency management, and local public water operators and the public will work with the MDH regarding operation of public water supplies and the safety of private wells.

c. Contaminated Buildings

Explain how local environmental health and the local public health department, in conjunction with the MDH and the MPCA, will be responsible for identifying plans for the mitigation of contaminated buildings. This will be done in conjunction with emergency management and perhaps OSHA and other regulatory agencies.

d. Public Health Clinics

Refer to the Mass Dispensing Site Plan that details how the local public health department and the MDH will establish necessary clinics and screening sites for immunizations, and prophylaxis.

The planning of these clinics will be done in coordination with other area medical providers, law enforcement and other community resources. This is coordinated with private health care providers, the MDH, the Strategic National Stockpile (SNS), the Centers for Disease Control and Prevention (CDC), and other agencies, as needed.

Coordination of scene security and traffic control will be the responsibility of local law enforcement **(See Evacuation, Traffic Control, and Security Annex and Public Health Mass Dispensing Site Plan).**

e. Spill and Hazardous Substance Exposure Plan

The county emergency operations plan will contain an annex that describes procedures and protocols that local emergency management, along with area HAZMAT Teams, will perform in coordination with the MDH and the MPCA for removal of contaminated materials.

Local hospital emergency departments, emergency medical services (EMS), and fire/rescue decontamination procedures will be followed. This relates to health and medical exposures; other spills and hazardous material exposures are handled in the **Hazardous Materials Annex**.

f. Food Contamination Recall Plan

The local public health department will coordinate with MDH, MDA, USDA, and the Food and Drug Administration (FDA) for recalls.

g. Removal of Biologic, Chemical, Radioactive, other Hazardous Materials and Human Remains

This will be addressed in "Section G. CLEANUP." This addresses the removal of biologic, chemical, radioactive, human remains and other hazardous materials.

h. Evacuation Plans/Quarantine

Local emergency management will be responsible for the coordination of the evacuation

procedures. The local public health department and the MDH will advise the incident commander on matters related to infectious disease, infection control procedures, and quarantine based on the prevention plan.

i. Patient Health Care Services

Local emergency management with support from the local public health department will work with local physicians, clinics, and hospitals in establishing alternate health care sites for system overflow or overload. Services may include, but not be limited to, items such as medical emergencies, basic first aid, and mental health issues. Other resources may include such agencies as the American Red Cross and the Salvation Army.

3. Infrastructure Needs of Agencies Involved in the Response

a. Workforce Plan

The local public health department will be responsible for developing a plan that provides for an adequate public health work force, which is available to assist in activities such as, mass vaccination clinics, and mass prophylaxis against a public health threat. In addition pre-planning will be done to identify personnel who may be needed to provide surge capacity.

Meeker-McLeod-Sibley (MMS) Community Health Services will utilize the Minnesota Responds Medical Reserve Corp volunteer data base, as well as volunteer lists from County Emergency Managers, South Central Health Care Coalition, Minnesota Department of Health, Red Cross and Salvation Army to pre-identify personnel needed to address surge capacity and to address surge capacity at the time of an event. Detailed information can be found in the MMS Volunteer Management Plan and the MMS Surge Capacity Staffing Protocols.

b. Multi-Agency Cooperation Plan

- The local public health department will designate a public health liaison responsible for coordinating assistance from other agencies during a public health emergency.
- The liaison will identify public health needs such as; equipment, supplies or personnel that cannot be obtained locally.
- The public health liaison will communicate these resource needs to the EOC or the onsite incident commander.
- The incident commander will coordinate additional resources by contacting the Division of Emergency Management's Minnesota State Duty Officer. This individual is responsible for obtaining assistance from government and non-governmental agencies.

4. Safety of Individuals Participating in the Response

a. Training

The responding agency will ensure emergency responders have adequate training and equipment to respond to a public health emergency. The training and equipment will be based on protocols developed from federal and state agencies and the CDC. It is recommended that local public health departments assess the training needs of their staff to determine if they are prepared to respond to potential health emergencies.

E. Public Safety

For issues related to evacuation, local on-scene personnel are likely to make the recommendation on the necessity for evacuation when a biological, chemical or radiological agent is involved in the emergency. Protection and safety during the response, including crowd control and safety during mass evacuation, is the responsibility of local jurisdictions. If local jurisdictions need additional assistance or resources in order to carry out an evacuation, the Minnesota Duty Officer may be contacted to obtain that assistance. Local officials or building owners may restrict entry to a building due to unsafe conditions.

1. Evacuation of Health Care Facilities

a. Local Facility Plans

Evacuation of health care facilities (*e.g.*, hospitals and long-term care facilities) will be accomplished through the required evacuation plan of each facility. These plans, which are part of the existing county emergency response plan, detail the evacuation procedures based on disaster contingencies including where patients/clients will be evacuated to, the circumstances requiring evacuation, and how this will be coordinated. Local Public Health will be aware of evacuation plans to insure that issues related to public health such as, the evacuation of individuals under an isolation order for infectious disease or individuals that are believed to be infectious are adequate to protect the health of the local community Assistance for evacuation will generally be coordinated with local law enforcement.

2. Traffic Control and Security in an Emergency Area

a. Local Traffic Control

Local law enforcement will coordinate traffic control efforts in their jurisdictions, based on plans outlined in the county/city Emergency Operations Plan **(See Evacuation, Traffic Control and Security Annex)**.

b. Law Enforcement Personnel

Local law enforcement may be requested by the local emergency manager in coordination with the incident commander to provide county or city law enforcement personnel, highway department personnel, and vehicles (with radios) to support the following functions in order to expedite efforts in:

- Assisting in the establishment of roadway check points; and

- Assisting with road blocks to cordon off a community, community neighborhoods, or individual buildings affected by a public health emergency.
- To assist local public health agencies if the need arises.

c. State Patrol

The State Patrol will coordinate with local government's traffic control efforts in all evacuations involving the use of interstate and intrastate highways in Minnesota.

In the affected area, the Minnesota State Patrol, in conjunction with local law enforcement, will:

- Provide control access to evacuated areas for MDH and other agencies;
- Provide any highway clearances and waivers required in order to expedite the transportation of high priority materials, equipment, or supplies for MDH and local public health; and
- Provide for the evacuation of personnel during periods of declared emergencies.

d. Security

The local emergency manager and the incident commander work in coordination with local law enforcement officials with regard to the perimeter of the scene to lower the risk of the potential hazard. Local law enforcement will provide:

- Scene security at vaccine/biologics distribution clinics, family assistance centers, and vaccine/biologics storage facilities;
- Scene security at mass care site; and
- Security for evacuated areas, public buildings, and other areas, as requested.
- See the Local Public Health Mass Clinic Guidance Document.

F. Mass Care/Shelter and Mass Clinics

1. Mass Care

This function provides congregate shelter facilities and fixed and mobile food services to disaster victims and emergency workers in a disaster area. Mass care provides bulk distribution of supplies and commodities to people affected by the disaster.

a. Mass Care Shelters

The shelters will be operated in conjunction with the MDH, the local public health department, local human services, environmental services, and non-profit voluntary organizations active in disasters (**See Congregate Care Annex**).

In a public health emergency the local public health department may be consulted to help prevent the spread of infectious disease and to insure that the shelters provide safe food and water to individuals using mass care facilities. The establishment of mass care/shelters is addressed in the **Congregate Care Annex**. The plan will allow for the notification of the American Red Cross, the Salvation Army and other human service agencies of mass care needs in the event of a public health disaster.

An example of a Mass Care/Shelter Plan is contained in **Attachment F: Tri-County Mass Care/Shelter Plan**. This plan is an example only and individual jurisdictions will need to develop their own plan, which should be included in their county **Congregate Care Annex**. It is also important to involve local/county human services and non-profit organizations in any Mass Care/Shelter Plan since they have resources and responsibilities in this area.

2. Mass Clinics

Provide prophylaxis treatment and vaccination to the local population. Detailed information about mass clinics is contained in the MDH Clinic Guidance for Local Public Health and will be supplied by the MDH. Local Public Health will coordinate Mass Dispensing Site and Mass Shelter sites to ensure that sites are not being used for both activities.

G. Clean Up

The purpose of this section is to provide a guide to abate a known contamination of a biological or chemical agent. The local emergency manager and the local incident commander will coordinate with the Minnesota Duty Officer at HSEM, the HAZMAT Team, MDH, MDA, MPCA and federal agencies to determine the appropriate course of action dependent upon the type of contamination. In the event of a criminal investigation, the removal of these materials will be coordinated with the investigating agency. The county sheriff or a designated law enforcement official will act as the liaison between public health and the criminal justice system officials conducting the investigations.

1. Limiting Site Accessibility

Local emergency management, environmental health, and the local public health department will coordinate with law enforcement agencies to limit access to a site to prevent the spread of the contamination. (See **Hazardous Material Annex**)

The involvement of the local public health department, after consultation with MDH, may be to advise local agencies on how to prevent the spread of the infectious agent to the community.

2. Site Assessment

Local emergency management, environmental health, and the local public health department will consult with the HAZMAT Team to determine the best course of action to pursue containment and clean-up. (Refer to the **Hazardous Materials Annex** for site abatement information.)

The local public health department, after consultation with MDH, may be asked by the HAZMAT Team for information on how to prevent exposure to biological agents of team members and the local community.

3. Contaminant Disposal

Local emergency management, environmental health, and the local public health department will work with state and federal agencies for disposal of contaminants.

The involvement of the local public health department, after consultation with MDH, will be to insure that the contaminant disposal of biological agent materials or sharps containers does not cause the spread of the hazardous material to the local community.

a. Removal and Care of Human Remains

The local public health department will coordinate with MDH, local coroner/medical examiner, and emergency operations on the removal and care of human remains. In instances where infectious agents have been involved, protocols for removal/care may need to be developed. Lead responsibility for these protocols would be MDH or CDC **(See Attachment G)**.

b. Removal of Wastes

The local public health department and emergency management will coordinate the removal and disposal of hazardous wastes and biologic waste at the local level. This will be done in conjunction with the area HAZMAT Teams according to their clean-up and removal procedures. In instances where city sewage/treatment is involved, local officials and public waste water system operators will be included in the discussions. **(See Hazardous Materials Annex)**. The involvement of local public health department will be to prevent the spread of infectious agents to the local community.

c. Animal Waste Removal

The local public health department will work with the Minnesota Board of Animal Health for assuring animal waste is removed safely. This will be done in consultation with MDH (for animal disease concerns) and coordinated with the District Veterinarian from the Minnesota Board of Animal Health. This is the primary resource for animal waste disposal. The involvement of local public health should be to prevent the spread of infectious agents from animals to humans.

Local public health and/or emergency management should contact their District Veterinarian through the Minnesota Board of Animal Health (651-296-2942) for procedures and requirements for safe animal disposal. We will access identified individuals at the local level who will assist in this.

4. Site Monitoring and Assessment After Clean-Up

Local public health will assist with continued monitoring and assessment before allowing entry into the site.

H. Re-Entry

The local emergency manager coordinates with the local incident commander to establish a re-

entry team that will outline the responsibilities for authorizing the re-entry into previously vacated areas or systems. The emergency manager will identify those individuals to be included on a Re-Entry Team that will coordinate the re-entry plan. This Re-Entry Team will be responsible for food and water safety and ensuring utilities restoration.

I. Emergency Response Evaluation

This section outlines how the response to the emergency will be evaluated It will be the responsibility of the EOC and the local incident commander to organize and summarize the disaster evaluation process.

1. Factors of Determination of AAR Completion

A. Whenever the department pulls 2 or more staff from regular work to respond to an incident for more than 8 working hours an AAR will be written.

B. The decision to write and AAR will be decided by the Incident Command Team and is incident specific. The team will consider the following questions to make their decision:
- Did our department activate our ICS?
- Did we have to reassign staff to do other work in response?
- Were sections of our All Hazards Plan activated in response? If so what plans?
- Were we in a lead response role or supporting role?
- Were PHEP funds used during response?
- Will be eligible for any federal reimbursement?

2. Coordinating the Evaluation

Although evaluation is ongoing during the crisis, once the emergency is over, the incident commander will direct the EOC Team to prepare the final evaluation in order to review the effectiveness of plan in responding to a public health emergency.

3. Conducting the Evaluation

Persons involved in the planning and implementation of the public health emergency response should participate in the evaluation process. The evaluation may include:
- Review of each of the components of the response plan;
- Identified needs or gaps;
- Implications for recovery;
- Recommended plan changes (if needed);
- Development of long-term prevention plans; and
- Written summary of activities.

IV. Recovery

The local emergency manager in coordination with the local incident commander will be responsible for the recovery plan. A recovery plan team may be identified to address the

development of the short-term and long-term recovery plan. Items will be reviewed for their impact on the community. Agencies affected by the public health disaster will be encouraged to address the following items within their own agencies.

A. Short-Term Recovery

1. Community

How will these community-based services be reintroduced, reactivated, or normalized within the next 6 months?

- Communication
- Childcare
- Transportation
- Food supplies
- Housing
- Medical services
- Mental health
- Social services
- Safety
- Damage and assessment and recovery
- Decontamination mitigation
- Schools
- State and federal disaster aid
- Infrastructure/governmental services (e.g., roads, bridges, electricity, communications, sewer, drinking water, natural gas, gasoline and oil, financial heat

2. Agency

How will these agency activities be reintroduced, reactivated or normalized within the next 6 months?

- Communication
- Childcare
- Staffing
- Personnel issues
- Mental Health
- Resumption of programs
- Information technology Systems
- Safety
- Schools
- Infrastructure/governmental services (e.g., roads, bridges, electricity, communications, sewer, drinking water, natural gas, gasoline and oil, financial heat

B. Long-Term Recovery

1. Community

How will these community-based services be reintroduced, reactivated or normalized within the next 6 months to 5 years?

- Communication
- Childcare
- Training/staffing
- Medical services
- State and federal disaster aid
- Infrastructure/governmental services (e.g., roads, bridges, electricity, communications,

- Mental health
- New job skills
- Safety
- Damage recovery

sewer, drinking water, natural gas, gasoline and oil, financial heat

2. Agency

How will these agency activities be reintroduced, reactivated or normalized within the next 6 months to 5 years?

- Communication
- Safety
- Staffing
- Personnel issues
- Mental health
- Infrastructure/governmental services (e.g., roads, bridges, electricity, communications, water, natural gas, sewer, drinking gasoline and oil, financial heat
- Resumption of program

Attachment A

Acronyms

ATSDR ..... Agency for Toxic Substances and Disease Registry

CDC ..... Centers for Disease Control and Prevention

CHS ..... Community Health Services (title of MN local Public Health Agencies)

DHS ..... Minnesota Department of Human Services

DHHS ..... US Department of Health and Human Services

DMORT ..... Disaster Mortuary Response Team

EH ..... Environmental Health Programs at State or Local Level

EOC ..... Emergency Operations Center

EOP ..... Emergency Operation Plans

FDA ..... Food and Drug Administration

FEMA ..... Federal Emergency Management Agency

HAN ..... Health Alert Network

HSEM ..... Homeland Security and Emergency Management at the Minnesota Department of Public Safety

IC ..... Incident Command

IDEPC ..... Division of Infectious Disease Epidemiology Prevention and Control at the Minnesota Department of Health

JPIC ..... Joint Public Information Center

MIMS ..... Minnesota Incident Management System

NIMS ..... National Incident Management System

MDA ..... Minnesota Department of Agriculture

MDH ..... Minnesota Department of Health

MDH-PHL ..... Minnesota Department of Health Public Health Laboratory

MDO ..... Minnesota Duty Office

MDPS ..... Minnesota Department of Public Safety

MPCA ..... Minnesota Pollution Control Agency

OEP ..... Office of Emergency Preparedness at Minnesota Department of Health

PHERT ..... Public Health Emergency Response Team

PHN ..... Public Health Nurse

PIO ..... Public Information Officer

USDA ..... United States Department of Agriculture

Attachment B

NIMS-Roles and Responsibilities

The essential elements of command, planning, operations, finance and logistics must be described in the local public health annex. Listed below is a brief description of each functional role and the potential public health duties that the individual may need to perform in a public health emergency in accordance with the Minnesota Incident Management System

1. **Command**: this individual(s) determines the flow of decision-making and communication in disaster and emergency response. The command structure includes an Incident Commander and as needed special staff comprised of a Safety Officer, Liaison Officer and a Public Information Officer.

   Public Health Role: this individual(s) in certain situations involving a disease outbreak, or bioterrorism event a public health professional may need to be the Incident Commander or serve in the Unified Command, if used. May also serve in Safety, Liaison, or PIO advisory role.

2. **Operations**: this individual(s) is responsible for coordinating the efforts of law enforcement, fire control and the emergency medical system.

   Public Health Role: in the event that mass clinics need to be implemented, the local public health department must assign someone or persons to the incident commander to inform them of issues related to the public health emergency. Normally, a public health person will be in operations for mass clinics and either that person or the public health planners for clinics will request needed assistance for other groups using the channels established for incident command.

3. **Planning**: this individual(s) assists the Incident Commander with the development of plans for projected situations and long-range objectives.

   Public Health Role: this public health individual(s) must do their part to assess (investigate) the ever-evolving situation from the public health perspective and to add information and suggestions to the planning process.

4. **Logistics**: this individual(s) takes care of needs such as providing facilities, services and materials for the incident.

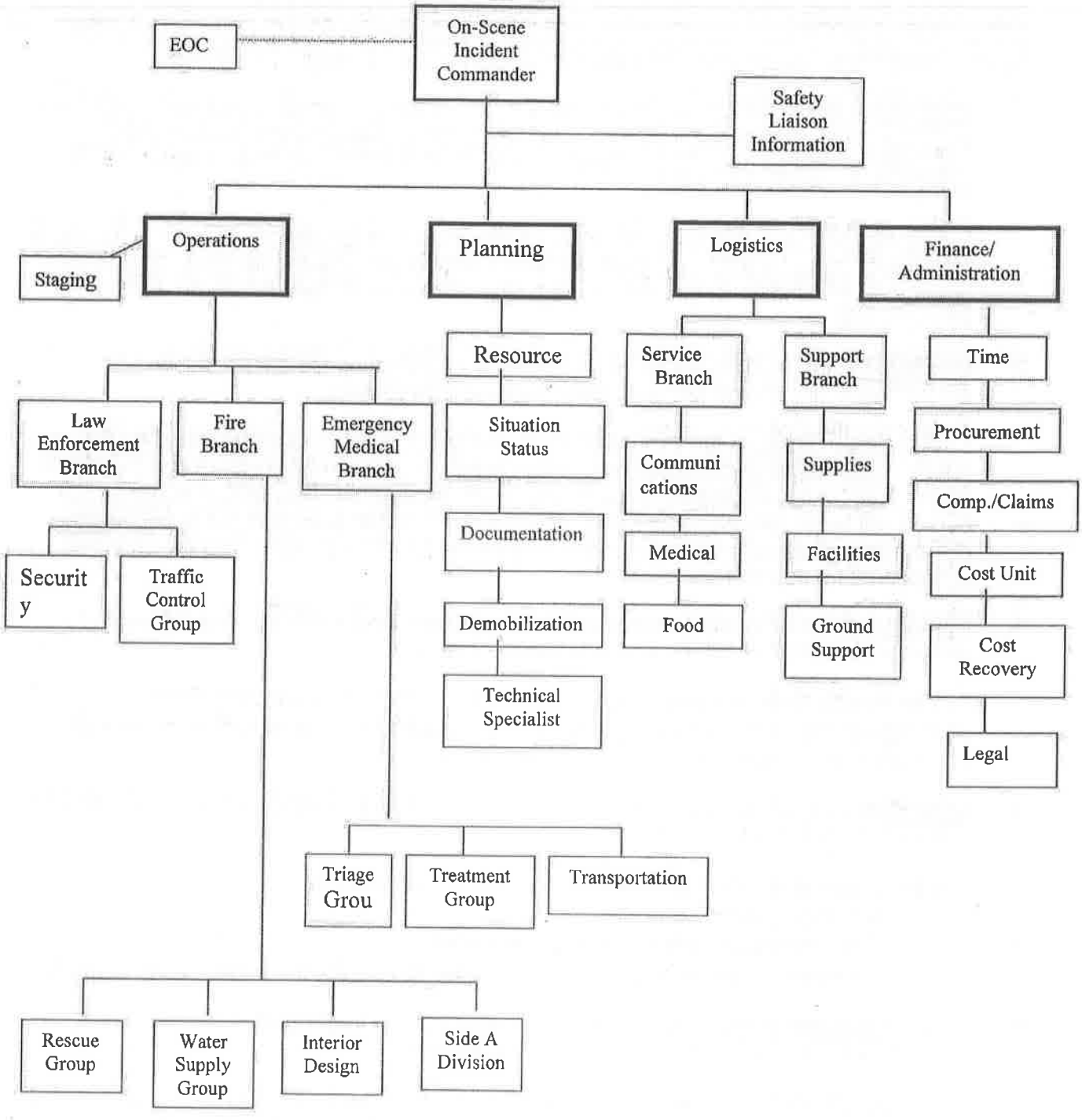
   Public Health Role: this individual(s) might be responsible for:
   - Identifying mass clinic sites
   - Recruitment of additional health care staff
   - Identifying supplies and resources needed to operate the public health response

5. **Finance/Administration**: this individual(s) takes care of tracking of all incident costs and evaluating the financial considerations of the incident.

   Public Health Role: this individual(s) needs to track their own incident costs, such as the costs of vaccine and additional staff. The costs to the public health agency should be considered as the emergency management director evaluates the overall costs of the public health emergency.

Attachment B (cont.)

National Incident Management System (MIMS) Model



Attachment C

Trigger Points or Thresholds that may activate the plan

Disaster Crisis	Trigger Points to Implement the Plan or Activate EOC	Authorization to Implement/Activate	Notes
Tornado	Injuries/possible search &rescue, evacuation, shelter requirements, property damage, major medical needs, loss of utilities	Emergency Management Director	Based on severity or magnitude
Winter Storm	Search & rescue, sheltering requirements, loss of utilities	Emergency Management Director	Based on severity or magnitude
Flood	Search & rescue, sheltering requirement, flood control volunteer	Emergency Management Director	Based on severity or magnitude
Health Issue	Potential pandemic or actual countywide major health issue, epidemic, mass health care, inoculation, shelter or evacuation needs	Public Health Director/Supervisor with direction from Minnesota Department of Health	Threshold is determined by at-risk population when observed cases are significantly greater than what expectation. Thus the threshold could be as low as 1-2 cases depending on the disease agent Activation of the Mass Dispensing Plan, Isolation and Quarantine, Continuity of Operations Plan, and other relevant plans must be considered.
Law Enforcement Issue	Crisis requires additional support beyond Sheriff's department capabilities	County Sheriff	Terrorism incident/School violence/hostage situation, etc.
Agricultural Incident	Disease outbreak in animal population e.g. Hoof and Mouth, Anthrax, Avian Flu, Swine Flu, etc.	MN Dept of Ag, CDC, Local Veterinarians', Emergency Management, Public Health, Law Enforcement	Major issues: disposal of dead animals, Quarantine of farm sites, Transportation control, i.e. movement of animals, feed, etc. Clean up of contaminated sites.

HAZMAT Spill	Need for hazmat teams, evacuation, sheltering, medical issues, major clean up issues.	Emergency Management Director along with Fire Chief of affected area	Rail spill, Pipeline rupture/highway chemical spill, plan chemical release, etc.
Environmental Incident	Foodborne, waterborne disease outbreaks, Indoor/Outdoor Air quality issues, Radiation	Public Health Director with direction from Minnesota Department of Health and Emergency Manager	Threshold is determined by at-risk population when observed cases are significantly greater than what expectation. Thus the threshold could be as low as 1-2, depending on the disease agent. Activation of the Mass Dispensing Plan, Isolation and Quarantine, Continuity of Operations and other relevant plans must be considered.

Attachment D

How the Health Alert Network Works

A health threat is suspected or identified.
First notice of a possible health threat might come from CDC, local public health, health care providers, emergency management, or MDH.

→

MDH epidemiologists and managers activate the Health Alert Network and decide:

- **Who needs the information?**
- **What information?**
- **What action should MDH recommend?**
- **What is the level of alert: time sensitive or urgent?**

The decision to issue a health alert is not taken lightly. An approval process involving MDH division management and the state or assistant state epidemiologist is always used.

↓

After Web-based resources are developed, **a health alert e-mail is sent to local public health agencies** and others as indicated referring them to the MDH HAN Web page.

←

Local public health agencies:
• use the information to respond to the health threat, and
•pass on the alert to those in their communities who need to know by activating their local health alert networks.
To maintain the effectiveness of the system, non-responding public health agencies are contacted to ensure they received the message and to verify contact information.

←

Updates are made as indicated by unfolding events.
When the event has resolved, the health alert information is archived on the Web site and remains available for reference.

HAN relies upon collaboration between Minnesota's county and city public health agencies and MDH. Local public health agencies monitor e-mails for alert messages and maintain their local health alert networks. MDH HAN maintains up-to-date e-mail lists and the Web site and manages HAN based on established policies and procedures.

Attachment E

Pandemic Influenza Surveillance

Surveillance is primarily a public health activity, local public health will be asked to assist in disease surveillance.

1. **Pre-pandemic**
   - Support routine influenza surveillance.
   - Assist in identifying sentinel sites and laboratories for surveillance.

2. **Novel virus** identified in a single human case
   - Assure that all health care providers within the jurisdiction are aware of the recommendation to culture patients with influenza-like illness (ILI) (especially those with recent travel history to an affected area).
   - Assure that a mechanism is in place to notify

3. **Human-to-human transmission confirmed**
   - Assure that all health care providers within the jurisdiction are aware of the recommendation to culture patients with ILI (especially those with recent travel history to an affected area).
   - Confirmation of onset of pandemic, regional and multi-regional epidemics

   a. International Circulation:
      - Assure that all health care providers within the jurisdiction are aware of the recommendation to culture patients with ILI (especially those with recent travel history to an affected area).

   b. North American Circulation:
      - Assure that all health care providers within the jurisdiction are aware of the recommendation to culture patients with ILI (especially those with recent travel history to an affected area).
      - Assist sentinel sites with specimen collection and/or data collection as appropriate.
      - Assure that clinics complete the Pandemic with ILI Enhanced Disease Report Card and Laboratory Submission form; provide assistance as needed.

4. **Second or later waves**
   - Assist sentinel sites with specimen collection and/or data collection as appropriate.
   - Assure that clinic completes the Pandemic with ILI Enhanced Disease Report Card and Laboratory Submission form; provide assistance as needed.

5. **Post-pandemic**
   - Assist MDH in data collection for retrospective characterization of the pandemic providers of a novel virus identification (fax, email, phone lists).

Prevention/Mitigation

Pandemic Influenza Vaccine

Obtaining vaccine, distribution to regional centers, administration supplies (i.e., needles, syringes), and identification of priority vaccination groups is a state responsibility. Local agencies will be responsible for identifying persons in priority groups and administering vaccine.

1. **Pre-pandemic**
   - Develop contingency plans for mass and small vaccination clinics (reminder: MDH distribution system uses National Guard Armories).
   - Develop a system to identify the number of persons in priority groups for vaccination in your jurisdiction (reminder: coordinate with local emergency management).
   - Identify the number of persons in priority groups for vaccination based on job description (job title reminder: no more than 25% in administrative positions).
   - Develop prototype standing orders (sample in state document).
   - Improve current influenza vaccination efforts (MDH Immunization Hotline 1-800-657-3970 for more information regarding improving vaccination efforts).
   - Improve current pneumococcal vaccination efforts (MDH Immunization Hotline 1-800-657-3970 for more information in regard to improving vaccination efforts).

2. **Novel virus identified** in a single human case
   - Assure that all providers are aware of pneumococcal vaccine recommendations.
   - Assure that a mechanism is in place to notify providers (fax, email, phone lists.)
   - Encourage providers to administer pneumococcal vaccine to ACIP recommended groups.

3. **Human-to-human transmission confirmed**/Confirmation of onset of pandemic, regional and multi-regional epidemics
   - Before vaccine is available:
   - Identify individuals (actual people) in priority groups for vaccination as defined by the State Health and Medical Management Team.
   - Develop standing orders (modify prototype as needed and have medical director sign).
   - Identify sites to administer vaccine.
   - Identify staff who can assess patients for eligibility.
   - Identify staff who can administer vaccine (determine the need for volunteers).

   When vaccine is available:
   - Coordinate transportation and security with local emergency management.
   - Use MDH developed database or paper system to track clinic participation.
   - Use VAERS to track adverse vaccine reactions.

4. **Second and later waves**
   - Continue vaccination efforts as above.

5. **Post-pandemic**
   - Summarize pandemic influenza vaccination response.
   - Summarize lessons learned from vaccination efforts.

Attachment F

Mass Care/Shelter Plan

The Mass Care Function provides congregate shelter facilities and fixed and mobile food services to disaster victims and emergency workers in a disaster area. Mass care provides bulk distribution of supplies and commodities to people affected by the disaster. Mass care shelters will be operated in conjunction with the Minnesota Department of Health (MDH), local public health, and environmental services/environmental health at the state and local level.

1. Notification

The Public Health Emergency Response Team (PHERT) will notify the American Red Cross (ARC) and the Salvation Army of mass care needs in the event of a public health disaster. ARC and the Salvation Army will coordinate their efforts for mass care service delivery.

2. Lines of Authority

A **Job Director** will be appointed by an ARC Chapter to oversee the entire disaster relief operation. On some smaller operations, a **Worker-in-Charge** may be appointed to fill this position. The job director (or worker-in-charge) reports directly to the ARC Chapter, state lead or national disaster leadership, depending upon the level and type of disaster relief operation necessary. An ARC **Government Liaison** will be appointed to work at the Emergency Operation Center who will inform ARC and PHERT of respective activities.

3. Activation

a. ARC Job Director determines the appropriate mass care response, given the disaster situation, needs of disaster victims, and requests of emergency managers and other voluntary agencies such as the Salvation Army.

b. Mass Care Specialist/Technician will initiate the mass care response according to publication ARC 3041. Appropriate numbers of mass care workers will be recruited for the relief operation and will be requested through the job director. Two or three shifts of workers may be necessary for round-the-clock coverage.

c. The Salvation Army will assist in providing meals for the shelters and mobile feeding sites. ARC will notify the Salvation Army about locations of shelters and their needs.

d. ARC Mass Care Specialist/Technician will maintain close contact with the job director and the Salvation Army, keeping them apprized of the status of mass care affairs, working in concert to solve problems or answer questions that may occur regarding service delivery.

4. Financial Authority

a. There is no limit on the amount of money spent on providing direct disaster assistance to disaster victims provided that ARC guidance is strictly followed and an approved

price guide is utilized.

b. The operation job director is permitted to authorize the expenditure of $500 (total), to cover start-up costs of an operation, without receiving prior approval from ARC Unit leadership. Functional area supervisors and workers must have all expenses approved by the operation job director or by ARC Chapter leadership.

5. Resources for Operating the Mass Care Function

a. A listing of ARC Chapter mass care personnel available for assignment of disaster relief operations is contained in Annex B of the complete ARC disaster plan. If additional mass care personnel become necessary, the mass care specialist/technician will coordinate the request with the operation job director.

b. Initial supplies and necessary forms are pre-packaged in a mass care "go kit" which is located in the ARC Chapter Office supply area. The mass care specialist/technician in charge orders additional supplies and equipment through the job director. A general listing of necessary forms and equipment is included in Annex 19 of the chapter's complete disaster plan.

c. Changes or problems with facilities selected to be used for the relief operation or additional requests for facilities should be coordinated by the mass care specialist/technician through the operation job director.

6. Food and Beverages

a. No food will be accepted that is not prepared in an approved facility.

b. Bottled water should be made available at the disaster site, shelters, and operation centers, as soon as possible.

7. Provisions for Pets

The ARC will be responsible for arranging accommodations for pets.

Attachment G

Removal and Care of Human Remains

Local health departments and emergency management should develop a **Mortuary Annex** to determine procedures at the local level for removal and care of human remains. Primary contacts at the local level are the county the medical examiner and local morticians. These individuals will be able to assist in developing these procedures in conjunction with the MDH, Division of Health Policy and Systems Compliance (HPSC), Section of Mortuary Science.

This Section has a Mortuary Science Team, which has 250 volunteer morticians available to respond to a mass casualty incident involving an unusually large number of deaths. The "Team" also includes mortuary supply companies' document/information staff, linen services, casket companies, refrigeration services, etc. In addition, there is a large hangar at the Minneapolis/St. Paul Airport designated as an emergency morgue. This is available for disasters occurring within a 70-mile radius of the Twin Cities. This morgue is equipped with four autopsy stations and eight embalming stations. It is large enough to house more than 1,000 bodies awaiting transportation to their hometown funeral homes. Cremation services can be arranged when needed. Transportation from hospitals to the emergency morgue would be handled by 25 Twin City hearses, which are on immediate stand by. Local agencies outside the metro area may need to develop some of these resources locally. The National Guard could assist in transportation of remains. Also, local suppliers can produce up to 250 caskets per day. The Mortuary Science Section has developed a Mortuary Science Disaster Plan for Emergency Response. This Plan should help in developing the local **Mortuary Annex**. Contact Mortuary Science at 651-282- 3829 to receive a copy. Calling the State Duty Officer at 1-800-422-0798 can activate the Mortuary Science Section Emergency Response Team.

Meeker-McLeod-Sibley Community Health Services

Local Health Disaster Plan Guidance

For The Health and Medical Annex

To The Local Emergency Operations Plan

Attachment H

- MN Statute – 12.27, 12.37, 12.331
- MOU List of Agreements
- SC Healthcare Coalition Signed Agreement
- Sheriff's Agreements
- Mutual Aid Agreement

12.27 MUTUAL AID, ARRANGEMENTS.

Subdivision 1. **Authority; organizations in Minnesota.** The director of each local organization for emergency management may, in collaboration with other public and private agencies within this state, develop or cause to be developed mutual aid arrangements for reciprocal emergency management aid and assistance in an emergency or disaster too great to be dealt with unassisted. These arrangements must be consistent with the local emergency operations plan and, in time of emergency, each local organization for emergency management and its members shall render assistance in accordance with the provisions of the mutual aid arrangements.

Subd. 2. **Authority; organizations in other states.** The state director or the director of each local organization for emergency management may, subject to the approval of the governor, enter into mutual aid arrangements with emergency management agencies or organizations in other states for reciprocal emergency management aid and assistance in case of disaster too great to be dealt with unassisted.

Subd. 2a. **Authority; organizations in Canadian provinces.** Subject to the approval of the governor, the state director may enter into mutual aid agreements with emergency management agencies or organizations in Canadian provinces for reciprocal emergency management aid and assistance in case of disaster too great to be dealt with unassisted.

Subd. 3. **Local delegation of authority.** (a) No later than 90 days after August 1, 1996, the governing body of a political subdivision shall designate a city administrator or manager, public safety director, police chief, fire chief, public works director, or other officer who, exercising discretion and considering the needs of the political subdivision and its inhabitants, may dispatch equipment and personnel as considered necessary if a danger of fire, hazard, casualty, or another similar occurrence exists outside the political subdivision and by its suddenness it would be impractical for the governing body itself to authorize the dispatch of equipment and personnel to combat that emergency or disaster.

(b) Action under this subdivision is an act of the political subdivision. All provisions for compensation of personnel, rental of equipment, liability insurance coverage, workers' compensation insurance, and other matters pertaining to the political subdivision, its equipment, and personnel, apply in each case as if specifically authorized and directed.

(c) The officer shall end the use of equipment and personnel when the need no longer exists or earlier at the officer's discretion if it appears to be in the best interest of the political subdivision.

Subd. 4. **Providing assistance to another state.** At the request of another state, the governor, exercising discretion and considering the needs of this state and its inhabitants, may dispatch state equipment and personnel as deemed necessary if there is an emergency or disaster outside of this state.

The governor shall end the use of equipment and personnel when the need no longer exists or earlier at the governor's discretion if it appears to be in the best interest of the state.

History: *1951 c 694 s 207; 1988 c 422 s 1; 1996 c 344 s 16*

12.37 POLITICAL SUBDIVISION'S POWERS TO FAST PROVIDE EMERGENCY AID.

During an emergency or disaster, each political subdivision, notwithstanding any statutory or charter provision to the contrary, and through its governing body acting within or without the corporate limits of the political subdivision, may:

(1) enter into contracts and incur obligations necessary to combat the disaster by protecting the health and safety of persons and property and by providing emergency assistance to the victims of the disaster; and

(2) exercise the powers vested by this subdivision in the light of the exigencies of the disaster without compliance with time-consuming procedures and formalities prescribed by law pertaining to:

(i) the performance of public work;

(ii) entering into contracts;

(iii) incurring of obligations;

(iv) employment of temporary workers;

(v) rental of equipment;

(vi) purchase of supplies and materials;

(vii) limitations upon tax levies; and

(viii) the appropriation and expenditure of public funds, for example, but not limited to, publication of ordinances and resolutions, publication of calls for bids, provisions of civil service laws and rules, provisions relating to low bids, and requirements for budgets.

History: *1951 c 694 s 307; 1957 c 171 s 1; 1996 c 344 s 26; 1999 c 250 art 2 s 2; 2003 c 2 art 1 s 2*

12.331 LOCAL ASSISTANCE BETWEEN POLITICAL SUBDIVISIONS.

Subdivision 1. **Authority between political subdivisions.** When the public interest requires it because of an emergency, a political subdivision may request the assistance of another political subdivision. Upon receiving such a request, a political subdivision, called the "sending political subdivision," may go to the assistance of the requesting political subdivision, called the "receiving political subdivision." The receiving political subdivision may accept and use the personnel, equipment, and supplies of the sending political subdivision as agreed upon by both political subdivisions.

Subd. 2. **Responsibility for use of personnel, equipment, supplies.** (a) Unless there is a written agreement between the political subdivisions establishing the rules for conducting these activities, the provisions of paragraphs (b) to (e) shall apply while the political subdivisions are engaged in the activities described in subdivision 1.

(b) For the purposes of worker's compensation insurance, the employees, officers, and members of the sending political subdivision have the same powers, duties, rights, privileges, and immunities as if they were performing similar services in the sending political subdivision and are considered to be acting within the scope of and in the course of their regular employment, as employees of the sending political subdivision.

(c) For the purposes of chapter 466, the employees and officers of the sending political subdivision are deemed to be employees, as defined in section 466.01, subdivision 6, of the receiving political subdivision.

(d) The sending political subdivision shall be responsible for any damages to its equipment.

(e) The receiving political subdivision shall reimburse the sending political subdivision for the supplies used and the compensation paid to the officers and members of the forces furnished, during the time when the rendition of aid prevents them from performing their duties in the sending political subdivision, and for the actual travel and maintenance expenses of the officers and members while so engaged. A claim for loss, damage, or expense in using equipment or supplies or for additional expenses incurred in operating or maintaining them must not be allowed unless within 90 days after the loss, damage, or expense is sustained or incurred, an itemized notice of it, verified by an officer or employee of the municipality having knowledge of the facts, is filed with the clerk of the receiving political subdivision.

Subd. 3. **Retroactive effect.** Notwithstanding other laws this section is effective retroactive to March 29, 1998.

History: *1998 c 383 s 19*

Meeker-McLeod-Sibley Community Health Services

List of Agreements

December 2016

Process for revisions and updates- The Meeker-McLeod-Sibley Community Health Services Emergency Preparedness Coordinator may review and revise agreements in collaboration with the County Emergency Managers and other key stakeholders for emergency preparedness. Any development of new agreements will have board approval if necessary.

South Central Health Care Coalition
Purpose: By promoting regional cooperation and sharing of resources, the South Central Healthcare Coalition will support local healthcare organizations to jointly respond to man-made or natural emergencies.
Date: 2014
Notes: Reviewed 2016- no changes

Ridgewater College, Hutchinson
Purpose: Site of the three county mass dispensing clinic
Original Date of Agreement: 2/17/2010
Notes: 3/10/2017 Attempted to meet with key staff at Ridgewater College, but unable to schedule a meeting to review MOU and make revisions. With current planning of closed POD's, may not need a three county mass dispensing site and will designate a site in each county. Review and revision put on hold

Meeker County Sheriff
Purpose: provide support for 24/7 access through dispatch system
Original Date of Agreement: Sent to Sheriff's office, pending return August 2017
Notes: new agreement

McLeod County Sheriff:
Purpose: provide support for 24/7 access through dispatch system
Original Date of Agreement: Sent to Sheriff's office, pending return August 2017
Notes: new agreement

Sibley County Sheriff
Purpose: provide support for 24/7 access through dispatch system
Original Date of Agreement: Sent to Sheriff's office, pending return August 2017
Notes: new agreement

Meeker, McLeod and Sibley County Emergency Management
Purpose: Request assistance to provide 24/7 access for securing supplies, and other support services necessary in an emergency response. This is reflected in Minnesota State Statute 12.27,12.37, and 12.331
Original Date of Agreement: 8/21/2017 Verbal agreement, 8/28/2017 Email confirmation
Notes: Due to statutory language official MOU is not necessary between county departments and County Emergency Management. Confirmation of this assistance was sought by verbal and written methods.

Minnesota Department of Health
Purpose: Assurances and agreements that local public health will abide to terms and conditions of the Master Grant Contract and various Minnesota State Statutes
Original Date of Agreement: 11/18/13
Notes: MDH will no longer be utilizing this format for assurances.

South Central Minnesota Healthcare Coalition
Partner Resolution
(FINAL – Approved 3/21/14)

The purpose of the South Central Minnesota Healthcare Coalition is to facilitate preparedness to assist communities with building and maintaining a Health and Medical Services (Emergency Support Function 8/ESF8) Capability to respond to and recover from disasters, especially those with regional impact.

The South Central Healthcare Coalition supports health and medical preparedness across south central Minnesota, which includes the following counties: Blue Earth, Brown, Faribault, LeSueur, Martin, McLeod, Meeker, Nicollet, Sibley, Waseca and Watonwan.

The South Central Healthcare Coalition consists of organizations with responsibilities to mitigate the likelihood of a hazard negatively impacting the ability of a health and medical system to provide services and to prepare for, respond to, recover from consequences of a disaster.

The following groups are represented as part of the South Central Minnesota Healthcare Coalition: Emergency Management, Emergency Medical Services, Hospitals & Clinics, Long Term Care Facilities, Public Health, Public Safety and Volunteer Organizations Active in Disasters (VOAD).

Coalition partners will carry out health and medical response and recovery activities within the parameters of statutory authority, jurisdictional Emergency Operations Plans and as defined in operational support compacts, mutual aid agreements, and memoranda of understanding or other operational agreements.

The signatory organization agrees it is a South Central Healthcare Coalition partner and it supports the purpose of the South Central Healthcare Coalition.

[signature] 5/10/14
Authorized Representative **Date**

Meeker-McLeod-Sibley Community Health Services
Organization Name

Public Health and Human Services Department

John Glisczinski, Director
PO Box 237
111 8th Street
Gaylord, MN 55334
Telephone: 507-237-4000
Toll Free: 866-396-9963
Fax: 507-237-4031

August 25, 2018

To: Sibley County Public Health and Human Service Office
From: Sibley County Sheriff Office

The Sibley County Sheriff's office agrees to continue to provide support for 24/7 access to the Sibley County Public Health and Human Service through the dispatch center.

If a call is received, Public Health staff will be paged according to the on-call schedule that is provided.

Signature

8/29/17
Date

JAIL / DISPATCH ADMINISTRATOR
Title

McLEOD COUNTY SHERIFF'S OFFICE
Law Enforcement, Corrections and Dispatch
801 10th Street East, Glencoe, Minnesota 55336
(320) 864-3134 FAX (320) 864-5920

Tim Langenfeld
Chief Deputy

SCOTT REHMANN
McLeod County Sheriff

Capt. Kate Jones
Jail Administrator

August 28, 2017

To: McLeod County Public Health Office
From: McLeod County Sheriff Office

The McLeod County Sheriff's office agrees to continue to provide support for 24/7 access to the McLeod County Public Health through the dispatch center.

If a call is received, Public Health staff will be paged according to the on-call schedule that is provided.

Signature

August 28, 2017
Date

McLeod County Sheriff
Title

August 25, 2018

To: Meeker County Public Health Office
From: Meeker County Sheriff Office

The Meeker County Sheriff's office agrees to continue to provide support for 24/7 access to the Meeker County Public Health through the dispatch center.

If a call is received, Public Health staff will be paged according to the on-call schedule that is provided.

Signature

08/28/2017
Date

Sheriff
Title

Mary Bachman - FW: Mutual Aid from Emergency Managers

From: Allie Freidrichs <Allie.Freidrichs@co.mcleod.mn.us>
To: Mary <MaryB@co.sibley.mn.us>
Date: 8/28/2017 4:11 PM
Subject: FW: Mutual Aid from Emergency Managers

This email can be printed and made into a pdf. I can be added into attachment I of the Health and Medical annex.

From: Kevin Mathews
Sent: Monday, August 28, 2017 3:18 PM
To: Allie Freidrichs
Subject: RE: Mutual Aid from Emergency Managers

Allie –

As the County Emergency Manager, I agree to provide assistance to MMS Public Health during an public health response effort, and further agree to utilize current MOUs held by County Emergency Management if necessary.

Yes

Kevin Mathews
McLeod County Safety & Emergency Management Director
801 10th Street East Glencoe, MN 55336
320-864-1339 phone
320-864-5920 fax
kevin.mathews@co.mcleod.mn.us

From: Allie Freidrichs
Sent: Monday, August 28, 2017 11:09 AM
To: kimf@co.sibley.mn.us; Kevin Mathews; Stephanie Johnson
Cc: Erick Boder; Diane Winter; Rachel Fruhwirth; Jennifer Hauser; John
Subject: Mutual Aid from Emergency Managers

Good Morning!

As we talked about at our last EP/EM meeting on 8/21, I'm following up regarding mutual aid agreements with the County Emergency Managers.

Attached are MN Statutes that cover the agreement for mutual aid assistance between County Emergency Managers and other Department staff or agencies. Are there any other statutes that should be referenced?

Since there does not need to be a formal MOU. I have referenced verbal agreement from our last meeting minutes, and want to confirm a written agreement through email.

Can you respond to this email with either a **YES or NO** to this statement:

As the County Emergency Manager, I agree to provide assistance to MMS Public Health during an public health response effort, and further agree to utilize current MOUs held by County Emergency Management if necessary.

Thanks!

Allie

Meeker-McLeod-Sibley Community Health Services

Local Health Disaster Plan Guidance

For The Health and Medical Annex

To The Local Emergency Operations Plan

Attachment I

- MN Statute – 4605.7050, 4605.7040, 4605.7030, 145.07 and 144.05
- DP & C Framework

144.05 GENERAL DUTIES OF COMMISSIONER; REPORTS.

Subdivision 1. **General duties.** The state commissioner of health shall have general authority as the state's official health agency and shall be responsible for the development and maintenance of an organized system of programs and services for protecting, maintaining, and improving the health of the citizens. This authority shall include but not be limited to the following:

(a) Conduct studies and investigations, collect and analyze health and vital data, and identify and describe health problems;

(b) Plan, facilitate, coordinate, provide, and support the organization of services for the prevention and control of illness and disease and the limitation of disabilities resulting therefrom;

(c) Establish and enforce health standards for the protection and the promotion of the public's health such as quality of health services, reporting of disease, regulation of health facilities, environmental health hazards and personnel;

(d) Affect the quality of public health and general health care services by providing consultation and technical training for health professionals and paraprofessionals;

(e) Promote personal health by conducting general health education programs and disseminating health information;

(f) Coordinate and integrate local, state and federal programs and services affecting the public's health;

(g) Continually assess and evaluate the effectiveness and efficiency of health service systems and public health programming efforts in the state; and

(h) Advise the governor and legislature on matters relating to the public's health.

Subd. 2. **Mission; efficiency.** It is part of the department's mission that within the department's resources the commissioner shall endeavor to:

(1) prevent the waste or unnecessary spending of public money;

(2) use innovative fiscal and human resource practices to manage the state's resources and operate the department as efficiently as possible;

(3) coordinate the department's activities wherever appropriate with the activities of other governmental agencies;

(4) use technology where appropriate to increase agency productivity, improve customer service, increase public access to information about government, and increase public participation in the business of government;

(5) utilize constructive and cooperative labor-management practices to the extent otherwise required by chapters 43A and 179A;

(6) report to the legislature on the performance of agency operations and the accomplishment of agency goals in the agency's biennial budget according to section 16A.10, subdivision 1; and

(7) recommend to the legislature appropriate changes in law necessary to carry out the mission and improve the performance of the department.

Subd. 3. **Appropriation transfers to be reported.** When the commissioner transfers operational money between programs under section 16A.285, in addition to the requirements of that section the commissioner must provide the chairs of the legislative committees that have jurisdiction over the agency's budget with sufficient detail to identify the account to which the money was originally appropriated, and the account to which the money is being transferred.

Subd. 4. **Identification of deceased individuals.** Upon receiving notice under section 149A.90, subdivision 1, of the death of an individual who cannot be identified, the commissioner must post on the department's Web site information regarding the individual for purposes of obtaining information that may aid in identifying the individual and for purposes of notifying relatives who may be seeking the individual. The information must remain on the Web site continuously until the person's identity is determined.

Subd. 5. **Firearms data.** Notwithstanding any law to the contrary, the commissioner of health is prohibited from collecting data on individuals regarding lawful firearm ownership in the state or data related to an individual's right to carry a weapon under section 624.714.

Subd. 6. **Reports on interagency agreements and intra-agency transfers.** The commissioner of health shall provide quarterly reports to the chairs and ranking minority members of the legislative committees with jurisdiction over health and human services policy and finance on:

(1) interagency agreements or service-level agreements and any renewals or extensions of existing interagency or service-level agreements with a state department under section 15.01, state agency under section 15.012, or the Office of MN.IT Services, with a value of more than $100,000, or related agreements with the same department or agency with a cumulative value of more than $100,000; and

(2) transfers of appropriations of more than $100,000 between accounts within or between agencies.

The report must include the statutory citation authorizing the agreement, transfer or dollar amount, purpose, and effective date of the agreement, duration of the agreement, and a copy of the agreement.

History: *(5339) RL s 2130; 1973 c 356 s 2; 1977 c 305 s 45; 1986 c 444; 1995 c 248 art 11 s 11; 1998 c 366 s 57; 1999 c 245 art 1 s 14; 2002 c 375 art 3 s 4; 1Sp2010 c 1 art 20 s 5; 2016 c 189 art 20 s 7*

145A.07 DELEGATION OF POWERS AND DUTIES.

Subdivision 1. **Agreements to perform duties of commissioner.** (a) The commissioner of health may enter into an agreement with any community health board, or county or city that has an established delegation agreement as of January 1, 2014, to delegate all or part of the licensing, inspection, reporting, and enforcement duties authorized under sections 144.12; 144.381 to 144.387; 144.411 to 144.417; 144.71 to 144.74; 145A.04, subdivision 6; provisions of chapter 103I pertaining to construction, repair, and abandonment of water wells; chapter 157; and sections 327.14 to 327.28.

(b) Agreements are subject to subdivision 3.

(c) This subdivision does not affect agreements entered into under Minnesota Statutes 1986, section 145.031, 145.55, or 145.918, subdivision 2.

Subd. 2. **Agreements to perform duties of community health board.** A community health board may authorize a city or county within its jurisdiction to carry out activities to fulfill community health board responsibilities. An agreement to delegate community health board powers and duties to a county or city must be approved by the commissioner.

Subd. 3. **Terms of agreements.** (a) Agreements authorized under this section must be in writing and signed by the delegating authority and the designated agent.

(b) The agreement must list criteria the delegating authority will use to determine if the designated agent's performance meets appropriate standards and is sufficient to replace performance by the delegating authority.

(c) The agreement may specify minimum staff requirements and qualifications, set procedures for the assessment of costs, and provide for termination procedures if the delegating authority finds that the designated agent fails to comply with the agreement.

(d) A designated agent must not perform licensing, inspection, or enforcement duties under the agreement in territory outside its jurisdiction unless approved by the governing body for that territory through a separate agreement.

(e) The scope of agreements established under this section is limited to duties and responsibilities agreed upon by the parties. The agreement may provide for automatic renewal and for notice of intent to terminate by either party.

(f) During the life of the agreement, the delegating authority shall not perform duties that the designated agent is required to perform under the agreement, except inspections necessary to determine compliance with the agreement and this section or as agreed to by the parties.

(g) The delegating authority shall consult with, advise, and assist a designated agent in the performance of its duties under the agreement.

(h) This section does not alter the responsibility of the delegating authority for the performance of duties specified in law.

History: *1987 c 309 s 7; 1989 c 209 art 2 s 18; 1990 c 426 art 2 s 1; 1993 c 206 s 12; 1995 c 186 s 43; 2014 c 291 art 7 s 23,24*

4605.7030 PERSONS REQUIRED TO REPORT DISEASE.

Subpart 1. **Health care practitioner.** When attending a case, suspected case, carrier, or death from any of the diseases in part 4605.7040 or a pregnancy under part 4605.7044, a health care practitioner shall report to the commissioner according to part 4605.7040 or 4605.7044, unless previously reported, the information specified in part 4605.7090.

Subp. 2. **Health care facilities.** Hospitals, nursing homes, medical clinics, or other health care facilities shall designate that all individual health care practitioners report as specified in subpart 1; or the health care facility shall designate an infection preventionist or other person as responsible to report to the commissioner, according to part 4605.7040 or 4605.7044, knowledge of a case, suspected case, carrier, or death from any of the diseases and syndromes in part 4605.7040 or a pregnancy under part 4605.7044, and the information specified in part 4605.7090.

Subp. 3. **Medical laboratories.**

A. All medical laboratories shall provide to the commissioner, within one working day of completion, the results of microbiologic cultures, examinations, immunologic assays for the presence of antigens and antibodies, and any other laboratory tests, which are indicative of the presence of any of the diseases in part 4605.7040 and the information specified in part 4605.7090 as is known.

B. All medical laboratories shall forward to the Minnesota Department of Health, Public Health Laboratory, all clinical materials specified in this chapter upon a positive laboratory finding for the disease or condition, or upon request of the commissioner in relation to a case or suspected case reported under this chapter.

C. All laboratories must report to the Minnesota Department of Health the results of all CD4+ lymphocyte counts and percents and the results of all HIV, hepatitis B, and hepatitis C viral detection laboratory tests.

D. If a medical laboratory forwards clinical materials out of state for testing, the originating medical laboratory retains the duty to comply with this subpart, either by:

(1) reporting the results and submitting the clinical materials to the commissioner; or

(2) ensuring that the results are reported and materials submitted to the commissioner.

Subp. 4. **Comprehensive reports.** An institution, facility, or clinic, staffed by health care practitioners and having medical laboratories that are required to report, as in subparts 1, 2, and 3, except subpart 3, item C, may upon written notification to the commissioner designate a single person or group of persons to report cases, suspected cases, carriers,

deaths, or results of medical laboratory cultures, examinations, and assays for any of the diseases listed in part 4605.7040 or a pregnancy under part 4605.7044 to the commissioner.

Subp. 5. **Veterinarians and veterinary medical laboratories.** The commissioner of health shall, under the following circumstances, request certain reports of clinical diagnosis of disease in animals, reports of laboratory tests on animals, and clinical materials from animals:

A. the disease is common to both animals and humans;

B. the disease may be transmitted directly or indirectly to and between humans and animals;

C. the persons who are afflicted with the disease are likely to suffer complications, disability, or death as a result; and

D. investigation based upon veterinarian and veterinary medical laboratory reports will assist in the prevention and control of disease among humans.

Subp. 6. **Others.** Unless previously reported, it shall be the duty of every other licensed health care provider who provides care to any patient who has or is suspected of having any of the diseases listed in part 4605.7040 or a pregnancy under part 4605.7044 to report to the commissioner, according to part 4605.7040 or 4605.7044, as much of the information specified in part 4605.7090 as is known.

Subp. 7. **Out of state testing.** Persons and entities that are required to report under subpart 1, 2, or 6 and that send clinical materials out of state for testing are responsible for ensuring that results are reported and clinical materials are submitted to the commissioner as required under this chapter.

Statutory Authority: *MS s 144.05; 144.072; 144.0742; 144.12; 144.122*

History: *9 SR 2584; 20 SR 858; 30 SR 247; 35 SR 1967; 41 SR 829*

Published Electronically: *January 18, 2017*

4605.7040 DISEASE AND REPORTS; CLINICAL MATERIALS SUBMISSIONS.

Cases, suspected cases, carriers, and deaths due to the following diseases and infectious agents shall be reported. When submission of clinical materials is required under this part, submissions shall be made to the Minnesota Department of Health, Public Health Laboratory.

A. Diseases reportable immediately by telephone to the commissioner:

(1) anthrax (*Bacillus anthracis*). Submit clinical materials;

(2) botulism (*Clostridium botulinum*);

(3) brucellosis (*Brucella* spp.). Submit clinical materials;

(4) cholera (*Vibrio cholerae*). Submit clinical materials;

(5) diphtheria (*Corynebacterium diphtheriae*). Submit clinical materials;

(6) free-living amebic infection (including at least: *Acanthamoeba* spp., *Naegleria fowleri*, *Balamuthia* spp., *Sappinia* spp). Submit clinical materials;

(7) hemolytic uremic syndrome. Submit clinical materials;

(8) measles (rubeola). Submit clinical materials;

(9) meningococcal disease (*Neisseria meningitidis*) (all invasive disease). Submit clinical materials;

(10) Middle East Respiratory Syndrome (MERS). Submit clinical materials;

(11) orthopox virus. Submit clinical materials;

(12) plague (*Yersinia pestis*). Submit clinical materials;

(13) poliomyelitis. Submit clinical materials;

(14) Q fever (*Coxiella burnetii*). Submit clinical materials;

(15) rabies (animal and human cases and suspected cases);

(16) rubella and congenital rubella syndrome. Submit clinical materials;

(17) severe acute respiratory syndrome (SARS). Submit clinical materials;

(18) smallpox (variola). Submit clinical materials;

(19) tularemia *(Francisella tularensis*). Submit clinical materials; and

(20) viral hemorrhagic fever (including but not limited to Ebola virus disease and Lassa fever). Submit clinical materials.

B. Diseases reportable within one working day:

(1) amebiasis (*Entamoeba histolytica/dispar*);

(2) anaplasmosis (*Anaplasma phagocytophilum*);

(3) arboviral disease, including, but not limited to, La Crosse encephalitis, eastern equine encephalitis, western equine encephalitis, St. Louis encephalitis, West Nile virus disease, Powassan virus disease, and Jamestown Canyon virus disease;

(4) babesiosis (*Babesia* spp.);

(5) blastomycosis (*Blastomyces dermatitidis*);

(6) campylobacteriosis (*Campylobacter* spp.). Submit clinical materials;

(7) carbapenem-resistant Enterobacteriaceae (CRE). Submit clinical materials;

(8) cat scratch disease (infection caused by *Bartonella* species);

(9) chancroid (*Haemophilus ducreyi*);

(10) Chikungunya virus disease;

(11) *Chlamydia trachomatis* infections;

(12) coccidioidomycosis;

(13) *Cronobacter sakazakii* in infants under one year of age. Submit clinical materials;

(14) cryptosporidiosis (*Cryptosporidium* spp.). Submit clinical materials;

(15) cyclosporiasis (*Cyclospora* spp.). Submit clinical materials;

(16) dengue virus infection;

(17) *Diphyllobothrium latum* infection;

(18) ehrlichiosis (*Ehrlichia* spp.);

(19) encephalitis (caused by viral agents);

(20) enteric *Escherichia coli* infection (*E. coli* O157:H7, other Shiga toxin-producing (enterohemorrhagic) *E. coli*, enteropathogenic *E. coli*, enteroinvasive *E. coli*, enteroaggregative *E. coli*, enterotoxigenic *E. coli*, or other pathogenic *E. coli*). Submit clinical materials;

(21) giardiasis (*Giardia intestinalis*);

(22) gonorrhea (*Neisseria gonorrhoeae* infections);

(23) *Haemophilus influenzae* disease (all invasive disease). Submit clinical materials;

(24) hantavirus infection;

(25) hepatitis (all primary viral types including A, B, C, D, and E);

(26) histoplasmosis (*Histoplasma capsulatum*);

(27) human immunodeficiency virus (HIV) infection, including acquired immunodeficiency syndrome (AIDS);

(28) influenza (unusual case incidence, critical illness, or laboratory confirmed cases). Submit clinical materials;

(29) Kawasaki disease;

(30) *Kingella* spp. (invasive only). Submit clinical materials;

(31) legionellosis (*Legionella* spp.). Submit clinical materials;

(32) leprosy (Hansen's disease) (*Mycobacterium leprae*);

(33) leptospirosis (*Leptospira interrogans*);

(34) listeriosis (*Listeria monocytogenes*). Submit clinical materials;

(35) Lyme disease (*Borrelia burgdorferi* and other *Borrelia* spp.);

(36) malaria (*Plasmodium* spp.);

(37) meningitis (caused by viral agents);

(38) mumps. Submit clinical materials;

(39) neonatal sepsis (bacteria isolated from a sterile site, excluding coagulase-negative *Staphylococcus*) less than seven days after birth. Submit clinical materials;

(40) pertussis (*Bordetella pertussis*). Submit clinical materials;

(41) psittacosis (*Chlamydophila psittaci*);

(42) retrovirus infections;

(43) salmonellosis, including typhoid (*Salmonella* spp.). Submit clinical materials;

(44) shigellosis (*Shigella* spp.). Submit clinical materials;

(45) Spotted fever rickettsiosis (*Rickettsia* spp. infections, including Rocky Mountain spotted fever);

(46) *Staphylococcus aureus* (only vancomycin-intermediate *Staphylococcus aureus* (VISA), vancomycin-resistant *Staphylococcus aureus* (VRSA), and death or critical illness due to community-associated *Staphylococcus aureus* in a previously healthy individual). Submit clinical materials;

(47) streptococcal disease (all invasive disease caused by Groups A and B streptococci and *S. pneumoniae* [including urine antigen laboratory-confirmed pneumonia]). Except for urine, submit clinical materials;

(48) syphilis (*Treponema pallidum*);

(49) tetanus (*Clostridium tetani*);

(50) toxic shock syndrome. Submit clinical materials;

(51) toxoplasmosis (*Toxoplasma gondii*);

(52) transmissible spongiform encephalopathy;

(53) trichinosis (*Trichinella spiralis*);

(54) tuberculosis (*Mycobacterium tuberculosis* complex) (pulmonary or extrapulmonary sites of disease, including clinically diagnosed disease). Latent tuberculosis infection is not reportable. Submit clinical materials;

(55) typhus (*Rickettsia* spp.);

(56) varicella (chickenpox). Submit clinical materials;

(57) *Vibrio* spp. Submit clinical materials;

(58) yellow fever;

(59) yersiniosis, enteric (*Yersinia* spp.). Submit clinical materials;

(60) zika virus disease; and

(61) zoster (shingles) (all cases <18 years old; other unusual case incidence or complications regardless of age). Submit clinical materials.

Statutory Authority: *MS s 144.05; 144.072; 144.0742; 144.12; 144.122*

History: *9 SR 2584; 20 SR 858; 30 SR 247; 41 SR 829*

Published Electronically: *January 18, 2017*

4605.7050 UNUSUAL CASE INCIDENCE.

Subpart 1. **Cases, suspected cases, or increased incidence.** Any pattern of cases, suspected cases, or increased incidence of any illness beyond the expected number of cases in a given period, which may indicate a newly recognized infectious agent, an outbreak, epidemic, emerging drug resistance, or public health hazard, including suspected or confirmed outbreaks of food or waterborne disease, epidemic viral gastroenteritis, and any disease known or presumed to be transmitted by transfusion of blood or blood products, shall be reported immediately by telephone, by the person having knowledge, to the commissioner.

Subp. 2. **Unexplained death or critical illness.** An unexplained death or unexplained critical illness in a previously healthy individual that may be caused by an infectious agent shall be reported by the attending health care practitioner, medical examiner or coroner, or by the person having knowledge about the death or illness to the commissioner within one day.

Subp. 3. **Submissions.** Upon request of the commissioner, medical laboratories shall submit test results and clinical materials for cases and suspected cases reported under subparts 1 and 2 to the Minnesota Department of Health, Public Health Laboratory.

Statutory Authority: *MS s 144.05; 144.072; 144.0742; 144.12; 144.122*

History: *9 SR 2584; 20 SR 858; 30 SR 247; 41 SR 829*

Published Electronically: *January 18, 2017*

State Community Health Services Advisory Committee (SCHSAC)
Public Health Practice Section, Health Partnerships Division
Minnesota Department of Health
PO Box 64975
Saint Paul, MN 55164-0975
651-201-3880

Disease Prevention and Control Common Activities Framework

State Community Health Services Advisory Committee

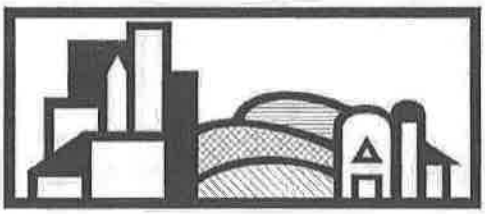
Reapproved July 2015

Disease Prevention and Control Common Activities Framework

State Community Health Services Advisory Committee

Reapproved July 2015

Developed Nov. 1999; Rev. Nov. 2001; Rev. Feb. 2003; Rev. Oct. 2012



For more information, contact:

Public Health Practice Section
Minnesota Department of Health
PO Box 64975
St. Paul, MN 55164-0975

Phone: 651-201-3880
Fax: 651-201-5099
TTY: 651-201-5797
Email: health.ophp@state.mn.us

Contents

Introduction and Preamble

DP&C Common Activities Framework

Preamble developed May 17, 2011, Revised October 3, 2012

Fundamental Public Health Responsibility

Controlling communicable diseases is perhaps the oldest and most fundamental public health responsibility. For decades, it was the primary responsibility of local Boards of Health and, in fact, the main reason for their creation.

In Minnesota, it is a statutory mandate of local boards of health to control communicable diseases in their jurisdiction. Minn. Stat. § 145A.04, subd. 6, outlines those required responsibilities for local Boards of Health by stating, "A board of health shall make investigations and reports and obey instructions on the control of communicable diseases as the commissioner may direct under section 144.12, 145A.06, subd. 2, or 145A.07. Boards of health must cooperate so far as practicable to act together to prevent and control epidemic diseases."

The Disease Prevention and Control Common Activities Framework, first approved by SCHSAC in 1998, is the foundation for local public health providing disease surveillance, prevention and control resources and services as mandated by Minn. Stat. § 145A, the Local Public Health Act.

Its intent is to provide structure for the infectious disease prevention and control (DP&C) activities of detecting acute and communicable diseases, for developing and implementing prevention of disease transmission, and for implementing control measures during outbreaks. It sets out the minimum roles and expectations for both local public health agencies and the Minnesota Department of Health to meet this mandate.

Minimum Set of DP&C Activities

While intended to allow for flexibility and varied capacity to address communicable disease problems, such broad direction from the statute requires some structure that better defines the respective roles of state and local public health.

Clearly, both the Minnesota Department of Health (MDH) and local Boards of Health have assumed a shared responsibility for conducting public health activities and the intent of the Framework is to provide this needed clarity. (See "History" for more information.)

This Framework lays out a minimum set of DP&C activities that are to be carried out by all local public health agencies and MDH. These activities are to be reflected in state and local community health service (CHS) planning efforts. Those agencies that are currently unable to carry out these activities are expected to strive to reach this minimum level of service.

Agreement of Responsibilities

The Framework specifies that:

- All local public health agencies will provide disease surveillance, prevention and control for tuberculosis (TB) with support from the Minnesota Department of Health as needed

- Responsibilities for all other infectious diseases follow-up will be determined jointly by the local public health agency and staff from the Infectious Disease Epidemiology, Prevention and Control (IDEPC) Division, Minnesota Department of Health, as necessary based on local capacity and other factors
- This Framework also lists disease prevention and control activities that are conducted jointly by MDH and local public health agencies
- The Framework provides suggested activities for clinics/health system partners.

Minnesota Department of Health activities listed in the Framework are to be implemented by MDH Infectious Disease Epidemiology Prevention and Control (IDEPC) Division staff in support of local public health agency DP&C activities.

Each local public health agency will assign a staff person(s) the responsibility for assuring that all disease surveillance, prevention and control activities as stated in the DP&C Common Activities Framework, and pursuant to Minn. Stat. § 145A, are being performed.

Regional DP&C teams, comprised of local public health staff and MDH field epidemiologists, support the work of the Disease Prevention and Control Common Activities Framework and will hold their members accountable for implementing and maintaining the Framework.

Alignment with National Standards

In the fall of 2011, the national voluntary public health accreditation program began. MDH as well as some CHBs are striving to become accredited in the next few years. As this is an important document used in planning disease prevention and control activities for both CHBs and MDH, it was determined that it should be examined and, if needed, aligned with the voluntary national accreditation standards.

In May 2012, SCHSAC created the DP&C Common Activities Framework Ad Hoc Review Group to complete this work. The group proposed a revised Framework and a set of recommendations that were adopted by SCHSAC on October 3, 2012. See *Appendix E: Recommendations* for more information.

The two recommendations most relevant to meeting the national standards:

- **Recommendation 2**: Amend the annual Assurances and Agreements, beginning in 2013, to formalize the agreement of responsibilities outlined in the DP&C Common Activities Framework, so the framework can be used by MDH and local public health agencies to meet accreditation requirements of the Public Health Accreditation Board.
- **Recommendation 7**: The State Community Health Services Advisory Committee (SCHSAC) will convene a workgroup to review the Disease Prevention and Control Common Activities Framework at least every five years to keep the Framework up-to-date and relevant for the work of MDH and local public health.

DESIGNATED STAFF ROLES FOR ALL DP&C ACTIVITIES

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
1.	DP&C Coordinator: Each local public health agency will assign a staff person(s) the responsibility of assuring that all infectious disease surveillance, prevention, and control activities as stated in the DP&C Common Activities Framework, and pursuant to Minn. Stat. § 145A, are being performed. The DP&C Coordinator role will assure: a) Surveillance activities, and b) Response to Infectious Disease, and c) Maintain their contact information in the Workspace.	Jointly assure training and current guidelines relating to infectious disease are available to staff who are assigned this role: a) Update the roles listed in Workspace to include all designated staff roles for DP&C included in the Framework b) Maintain a current list of contact staff for infectious diseases using Workspace. c) Notification of change in infectious disease contact staff to be provided to each other on a timely basis.	MDH will assure district epidemiologists and/or other MDH staff are available for consultation and training on Framework activities.	Identify and communicate to local LPH/CHS, a person in the clinic/system as liaison between clinic and LPH/CHS agency. Update the information in Workspace.

DESIGNATED STAFF ROLES FOR ALL DP&C ACTIVITIES

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
2.	Assure local staff is responsible for disease surveillance activities. Staff will: a) Enter contact information into Workspace b) Submit electronic reporting including MEDSS; c) Maintain current lists of all providers within jurisdiction; d) Assure reporting rules, report cards and MDH toll free reporting phone number (1-877-676-5414) are available to all medical clinics and laboratories, and hospitals; e) Respond to inquiries from reporting sources; and f) Forward any reports of cases or suspect cases to MDH.	Jointly review data to identify reporting needs and mechanisms.	MDH will assure district epidemiologists and/or other MDH staff are available for consultation and training on Framework activities.	Assure staff is responsible for disease surveillance activities, including but not limited to reporting.

DESIGNATED STAFF ROLES FOR ALL DP&C ACTIVITIES

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
3.	Designate staff within the LPH/CHS agency to assure infectious disease responsibilities for a) TB b) STD/HIV c) Vaccine-preventable disease surveillance d) Refugee health e) Flu f) IPI visits g) Foodborne/vector borne diseases h) Perinatal Hep B i) Other diseases as deemed necessary by MDH and LPH/CHS.	Jointly assure training and current guidelines relating to infectious disease are available to staff who are assigned these responsibilities: a) Update the roles listed in Workspace to include all designated staff roles for DP&C included in the Framework and any additional roles deemed necessary by MDH and LPH/CHS. b) Maintain a current list of contact staff for infectious diseases using Workspace. c) Notification of change in infectious disease contact staff to be provided to each other on a timely basis.	Provide LPH/CHS agencies with a list of minimum expectations for the designated LPH/CHS contact persons.	Identify and communicate to local LPH/CHS, a person in the clinic/system as liaison between clinic and LPH/CHS agency. Update the information when appropriate in Workspace.

DISEASE SURVEILLANCE / DATA COLLECTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
1.	Promote provider compliance of infectious disease reporting pursuant to Minnesota Reporting Rules Chapter 4605. a) Disseminate guidelines to local providers (e.g., vaccine schedules and recommendations; STD/HIV prevention, testing, and treatment including perinatal; TB prevention, diagnosis, and treatment; food-and waterborne illness).	Promote provider compliance of infectious disease reporting, pursuant to Minnesota Reporting Rules Chapter 4605. a) Jointly conduct training programs and provide consultation for reporting sources regarding issues related to reporting and surveillance systems.	Provide and maintain a centralized statewide infectious disease surveillance system that monitors incidence, demographics, and other appropriate characteristics. Maintain both active and passive surveillance: a) Develop and distribute reporting materials (i.e., rules, report cards, toll-free phone numbers); and b) Provide and maintain current information and resources on surveillance c) Provide leadership and resources for the design, development and implementation of electronic reporting capacity.	Assure infectious diseases are reported to MDH as identified in MN Reporting Rules Chapter 4605. a) Designate who within the provider facility will be responsible for reporting diseases.
2.	Share surveillance data with providers at least annually. a) Review surveillance data with staff. b) Identify any local barriers to the reporting process; and c) Assess LPH/CHS program effectiveness. d) May also share data with other interested parties (e.g., CHS board, health advisory board, local legislators),	Jointly review data to determine if additional strategies are needed to stimulate improved reporting. a) Involve the MIIC regional coordinator	Surveillance data are sent at least annually or as requested: a) where applicable, EFS staff will evaluate regional surveillance data and present to regional directors via local public health association (LPHA) or other regional meetings; and	Review surveillance data with LPH/CHS agency and with providers in system. a) identify gaps and barriers to reporting b) work with LPH/CHS agency and MDH to improve reporting c) monitor reporting compliance in provider system

DISEASE SURVEILLANCE / DATA COLLECTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
3.	Assess immunization coverage levels: a) assess immunization levels in public health clinics, if appropriate, and encourage and support private clinic assessment using MIIC; and b) Share state and local immunization reports with schools, policy makers, providers, regional coordinators, and others such as daycare providers. c) assess gaps and barriers to age-appropriate immunizations as warranted by local immunization coverage data	Work together with the MIIC Regional Coordinators to interpret and disseminate immunization data for providers using MIIC registry data.	Maintain a statewide system to determine immunization rates that can identify pockets of need. a) Disseminate data to the LPH/CHS agency and providers; and also b) provide consultation and training on interpretation and use of data to meet statewide immunization goals.	Review statewide and local immunization rates a) assess client immunization status with each clinic encounter b) review and act on local and clinic specific immunization coverage reports.
4.	Assess adherence to immunization practice standards (i.e., Advisory Committee on Immunization Practices recommended schedules) and provide consultation, as needed.	Jointly develop standards and protocols to evaluate and improve immunization practices in private and public clinics. Use data to assess common practice and address barriers to age-appropriate immunizations.	Develop, maintain, and promote standards and protocols for clinic immunization assessment. a) Also provide appropriate information to guide providers to assess adherence to immunization practice standards and provide consultation as needed.	Annually assess adherence to immunization practice standards within the community and provider system. a) Collaborate with LPH/CHS to assess practice or parental barriers in community and provider systems

DISEASE SURVEILLANCE / DATA COLLECTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
5.	Assess health needs of the population living in the LPH/CHS jurisdiction related to infectious diseases.	Work together to identify health issues and health care access barriers of the population. Provide information and tools to private providers for infectious disease screening.	Assess health needs and access to health care of the population; disseminate information to LPH/CHS agencies.	Collect and provide data to local public health and MDH relating to the population a) work with LPH/CHS agencies to assess specific health issues and barriers of the population utilizing providers in community
6.	Review current DP&C literature related to incidence of disease, barriers to health care and other needs of the public and disenfranchised from the health care delivery system.	*Intentionally left blank*	Review current DP&C literature related to incidence of disease, barriers to health care and other needs of the public and disenfranchised from the health care delivery system.	Review current DP&C literature related to incidence of disease, barriers to health care and other needs of the public and disenfranchised from the health care delivery system.

DISEASE SURVEILLANCE / DATA COLLECTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
8.	Collaborate on special studies, as warranted, to better understand epidemiology of infectious diseases. a) Identify and/or recruit surveillance sites upon request.	Assess effectiveness of prevention programs and provide results to others, as needed.	Conduct special studies to better understand epidemiology of infectious diseases, effectiveness of prevention programs, and provide results to others, as needed. a) Provide information about these studies to LPH/CHS agencies and provide technical assistance to enhance their ability to interpret the data. These studies could relate to barriers, needs, and outcomes of local populations, such as: b) studies to ascertain behavior of populations at-risk for HIV/STDs, service needs for HIV-infected people, availability of community resources, and prevention programs; c) studies that help define needs of specific populations related to health improvement (e.g., immunization barrier studies); and any additional studies, as supported by community assessment.	Collaborate on special studies, as warranted, to better understand epidemiology of infectious diseases. a) Identify and/or recruit surveillance sites upon request.

DISEASE SURVEILLANCE / DATA COLLECTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
9.	Review the environmental health program activities related to food- and waterborne diseases and other infectious diseases with environmental etiology. Communicate surveillance data to the MDH.	Share information about infectious diseases with environmental etiology with appropriate environmental health program	Provide epidemiology support when needed. Communicate surveillance data to appropriate MDH sections. Provide training to environmental health program, as needed.	Assure providers are aware of disease etiology of water and foodborne disease a) report food or waterborne related disease identified in practice to MDH.

DISEASE PREVENTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
1.	Maintain current MDH and CDC infectious disease recommendations and protocols. a) develop policies and plans (e.g. All-Hazards, Pandemic) to assure capacity to respond to cases of infectious disease (MN Rule 4605). b) disseminate guidelines to local providers	Jointly develop statewide guidelines and assure training is available to LPH/CHS agencies and providers.	Assure statewide guidelines are developed based on epidemiologic data for the prevention of specific diseases (e.g., Lyme disease, TB, HIV/STDs, and vaccine-preventable diseases) and disseminate such guidelines to CHS agencies, private providers, MDH-funded grant programs, and others: a) review national guidelines on specific diseases and disseminate; b) maintain toll-free telephone numbers for reporting and consultation (immunization, foodborne disease, and acute disease epidemiology hotlines); and c) maintain current, shareable culturally appropriate resources and strategies on web site (www.health.state.mn.us) for the public	Adopt appropriate prevention guidelines received from LPH/CHS and/or MDH relating to infectious diseases.
2.	Develop and implement screening and referral strategies for high-risk groups when indicated and clinically appropriate.	Jointly assure that the population receive appropriate screening, diagnosis, and therapy for diseases (e.g., TB), as needed.	Maintain statewide prevention programs that identify priorities and objectives for short- and long-term control of infectious diseases in Minnesota.	Screen high-risk patients for infectious diseases when indicated and clinically appropriate; a) follow CDC recommended treatment guidelines (e.g. antibiotic stewardship and treatment of latent TB infection)

DISEASE PREVENTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
3.	Assure vaccines for immunizations are available, viable and properly administered. Establish and manage public immunization clinics, as needed, based on population-based assessment data. Follow best practice vaccine management standards. a) Participate in annual IPI Advisor training. b) Perform MnVFC site visits with MnVFC providers.	Jointly assure that MnVFC providers receive MnVFC site visits to assure immunizations are available, viable, properly administered and providers adhere to best practice standards. Assure professional and consumer education materials are used by providers and meet the information needs of patients.	Maintain a statewide vaccine distribution system for MnVFC providers. Develop and distribute vaccine management standards (MnVFC Policy and Procedure Manual), VISs in all relevant languages, and no-cost professional and consumer materials. State will conduct MnVFC site for local public health and others as needed. Provide training and resources to IPI Advisors to assure IPI standards are met via the MnVFC.	Assure vaccines are available, viable and properly administered by meeting the requirements of the MnVFC program and best practice standards. Participate in MnVFC program.
4.	Maintain and provide consumer education information based on community needs to the public and: a) develop local community education programs; b) maintain current lists of local providers and resources for people infected with STD/HIV; and c) develop a communication plan for infectious disease issues d) maintain ability receive and forward health alert information to local health care providers and others, as needed.	Jointly identify local consumer education needs, and develop culturally and linguistically appropriate resources and strategies for the public and media.	Develop and/or identify resources and strategies that can be used by LPH/CHS agencies in community education programs related to the prevention and control of disease.	Implement patient education programs, such as hand washing instructions, and prevention programs, such as flu vaccinations. a) Use culturally and linguistically appropriate resources for the public and media b) participate in local consumer disease education programs with LPH/CHS and the community c) Participate in local immunization information system activities

DISEASE PREVENTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
5.	Collaborate regionally on infectious disease prevention efforts: a) identify staff that need training; b) LPH/CHS agencies in a region will exchange information on infectious disease prevention and control activities on a regular basis; and c) maintain contact with regional and state MIIC registry contacts. d) Assure immunization responsibilities are maintained	Support regional planning activities and participate in regional DP&C team meetings. The regional DP&C teams will meet at least twice a year to support the work of the Disease Prevention and Control Common Activities Framework. • MDH field epidemiologists together with local public health staff in each region should decide how to meet (by phone or in person) and how often meetings occur. • Participating in these regional meetings is necessary and expected for local public health staff and MDH regional field epidemiologists.	Provide regional training and consultation on infectious disease prevention issues. Assure regional DP&C meetings are held with LPH to share information and to review and revise the CAF at least every 5 years and to recommend training, distribution and technical assistance on CAF	Collaborate with regional public health DP&C planning efforts and activities. Participate in public health training opportunities in DP&C issues as appropriate. Participate in MIIC registry.

DISEASE PREVENTION

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
6.	Follow the Health Alert Network (HAN) operational guidelines from MDH, including to: a) Receive and promptly acknowledge any Health Alert Network message sent by MDH. b) Review MDH HAN messages in a timely way, adding additional information of local relevance as appropriate, and forwarding the message to local HAN recipients. c) Serve as an information resource to local HAN recipients in response to HAN messages. d) Assure the capacity to initiate a HAN	Continually evaluate and improve the effectiveness of the Health Alert Network (HAN). a) Maintain and coordinate distribution lists of appropriate local recipients of HAN messages. b) Continuously monitor the accuracy of the distribution list, response rate and time.	Maintain an effective Health Alert Network (HAN) that meets federal requirements and local needs. a) Update and disseminate HAN operational guidelines for local agencies. b) Route all urgent and time sensitive messages to LPH through the Health Alert Network. c) Maintain HAN database. d) Maintain public and secure Web site of current health threat information. e) Review CDC health alerts and when appropriate add Minnesota specific information and forward on to local HAN contacts.	Develop internal communication systems to distribute information received via the Health Alert Network Maintain database (Workspace).

DISEASE CONTROL

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
1.	Assist and/or conduct investigations on infectious diseases in collaboration with the MDH and/or refer information related to cases and suspect cases to the MDH.	Jointly identify the lead agency and conduct epidemiological investigations of cases and suspect case of infectious diseases including when there is a potential for an outbreak. This will be done in order to better understand the epidemiology of specific diseases and may include: a) public education and outreach programs; b) informing the public and providers about disease control recommendations; c) special clinics for immunizing, treating, or screening people at-risk of disease; d) procedures that limit access to sources of disease (e.g., closing restaurants and/or day care facilities, recommending quarantine); and e) manage the response including outreach, media, etc. f) co-coordinating investigations with environmental health staff. g) clarify roles of those involved in the investigation of an outbreak; and h) For infectious diseases with environmental etiology, coordinate the investigation with the appropriate environmental health agency and assure communication throughout the investigation.	Provide technical assistance in conducting disease case and outbreak investigations and special studies (e.g., specify epidemiologic methods) or conduct investigations based on joint determination of needs and LPH capacity. Make recommendations for the control of infectious diseases that may include: a) notifying LPH/CHS agencies, environmental health, and providers of outbreaks and potential outbreaks; b) assuring providers understand and implement control procedures (such as screening for enteric pathogens/treating people at-risk); c) providing training on outbreak investigations to environmental health programs, as needed; and d) investigating and doing appropriate follow-up on cases of infectious disease	Support local disease investigations by: a) collecting specimens b) providing medical diagnostic evaluation, as needed c) providing treatment and immunization of client populations at risk of or with disease d) assisting with education or control activities

DISEASE CONTROL

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
2.	In outbreak situations conduct mass or targeted immunization clinics, arranging for staffing, training, emergency supplies, and other logistical needs.	Jointly assure staffing, supplies, training, etc. are in place for a targeted or mass immunization clinic.	Assure overall coordination exists for outbreak management and control in vaccine-preventable disease outbreak situations, including mass or targeted immunization clinics. Provide adequate vaccines, antibiotics, and prophylaxis if available. Advocate for state funding, if needed	Work closely with local and state public health in understanding and managing an outbreak. Assist with public information efforts
3.	Proactively implement local disease control programs, as indicated, from local surveillance data and trends. These programs should then be part of the Framework and included as part of the LPH/CHS Plan.	Work together to provide accurate and timely public communications so that community members understand the risks and preventive actions to be taken. Local providers will be involved.	Develop statewide guidelines based on statewide epidemiologic data for the control of disease and disseminate such guidelines to LPH/CHS agencies, private providers, MDH-funded grant programs, and others.	Collaborate with MDH and LPH/CHS in implementation of disease control programs a) screen clients according to appropriate guidelines
4.	LPH/CHS agencies will work with the local emergency management agency and others to develop and maintain a local Emergency Management Plan.	As identified through surveillance, with input from local providers, jointly develop programs to control disease and other health conditions at the local level. Develop and implement policies and protocols for public health outbreak response activities, including media responses.	Implement statewide public health outbreak response protocols (such as pandemic flu and foodborne disease) as a part of the statewide Emergency Management Plan and train county agencies in coordination with the Department of Emergency Management.	Participate with LPH/CHS and MDH in developing and implementing of public health emergency response plans a) Identify internal emergency plan for responding to public health emergencies

DISEASE CONTROL

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
5.	Maintain provisions for 24/7 emergency access to epidemiological and environmental public health resources capable of providing rapid detection, investigation, and containment/mitigation of public health problems and environmental public health hazards	*Intentionally left blank*	Maintain provisions for 24/7 emergency access to epidemiological and environmental public health resources capable of providing rapid detection, investigation, and containment/mitigation of public health problems and environmental public health hazards	Maintain a contact person and provisions for 24/7 emergency access to epidemiological and environmental public health resources capable of providing rapid detection, investigation, and containment/mitigation of public health problems and environmental public health hazards

TUBERCULOSIS (SUBSECTION OF DISEASE CONTROL)

All LPH/CHS responsible for assuring follow-up for all active and latent TB cases in their jurisdiction.

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
1.	Designate staff within the LPH/CHS agency to perform TB control responsibilities.	Jointly assure training and current guidelines relating to TB are available to staff with TB responsibilities Provide each other with current lists of contact staff for TB.	Provide LPH/CHS agencies with a list of minimum expectations for a TB nurse case manager (e.g., contact investigation, TB nurse case management, DOT or other supervision of therapy.	Identify and communicate to local LPH/CHS, a person in the clinic/system as liaison between clinic and LPH/CHS agency. Update the information when appropriate.

TUBERCULOSIS (SUBSECTION OF DISEASE CONTROL)

All LPH/CHS responsible for assuring follow-up for all active and latent TB cases in their jurisdiction.

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
2.	Assess health needs of populations living in the LPH/CHS jurisdiction: Assure that immigrants and refugees with overseas chest x-ray findings consistent with possible active TB (i.e., TB Class B1 conditions) receive medical evaluation and follow-up, as needed, after arrival in the LPH/CHS jurisdiction. Report results of evaluations to MDH.	Work together to identify health issues and health care access barriers of population. Provide information and tools to private providers for TB screening.	Assess health needs and access to health care of persons with TB and disseminate information to LPH/CHS agencies. Notify LPH/CHS agencies of all immigrants and refugees with TB Class B1 conditions who designate the LPH/CHS jurisdiction as their destination. Provide technical assistance to LPH/CHS agencies and providers regarding medical evaluation protocols for individuals with TB class B1 conditions. Maintain a database with information on the evaluation and treatment of Class B1 immigrants and refugees; provide summary data to LPH/CHS agencies and providers, as needed.	Collect and provide data to local public health and MDH relating to individuals and populations with TB a) work with LPH/CHS agencies to assess specific health issues and barriers to utilizing providers in community

TUBERCULOSIS (SUBSECTION OF DISEASE CONTROL)

All LPH/CHS responsible for assuring follow-up for all active and latent TB cases in their jurisdiction.

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
3.	Assure 100% of persons with TB disease in LPH/CHS jurisdiction complete TB treatment by providing nurse case management and directly observed therapy (DOT) or other treatment supervision according to CDC/MDH standards. Assure that infectious TB patients residing in the LPH/CHS jurisdiction adhere to appropriate infection control precautions. Notify MDH of individuals who will not adhere to precautions. Notify MDH or LPH/CHS agency of patients who are non-adherent to TB treatment. Notify MDH and refer treatment supervision and case management to another state or county if patient leaves jurisdiction before treatment is completed;	Jointly assure that 100% of active TB cases receive TB nurse case management services and complete therapy.	Notify LPH/CHS agencies of all newly-reported TB cases in their jurisdiction. Provide technical assistance to assure TB case management and treatment: a) collect data on treatment and clinical status of all patients with TB disease from CHS agencies and private providers, and maintain a database containing this current information; b) monitor location and treatment status of persons with TB disease statewide and notify CHS agencies of patients in their jurisdiction; c) assure medication is available, without cost, to all persons with active TB statewide; and d) pursue and implement actions pursuant to the TB Health Threat Act, as needed, in order to ensure completion of adequate treatment for potentially infectious TB patients who do not adhere to prescribed therapy and do not respond to less restrictive means. e) Make recommendations to LPH/CHS agencies and providers for improvement of TB case management, as needed, based on analysis of case data.	Report TB disease per MN statute. a) cooperate with local public health and MDH to assure appropriate treatment is initiated and completed for all TB cases and suspected cases , and that patients receive ongoing medical evaluation throughout their course of treatment following current CDC guidelines b) notify MDH or LPH/CHS agency of patients with TB disease who are non-adherent to TB treatment

TUBERCULOSIS (SUBSECTION OF DISEASE CONTROL)

All LPH/CHS responsible for assuring follow-up for all active and latent TB cases in their jurisdiction.

	LPH/CHS Agency Activities	MDH and LPH/CHS Agency Collaborative Activities	MDH Activities	Clinic/Health System Activities
4.	Conduct contact investigations on infectious TB patients in the LPH/CHS jurisdiction and report results to MDH. Notify other jurisdictions of contacts residing in those jurisdictions (i.e., MN counties). Evaluate and follow-up on contacts to cases that occur in other jurisdictions and who reside in the LPH/CHS jurisdiction and report results to those jurisdictions.	Develop and implement policies and protocols to respond to TB outbreaks.	Provide technical assistance to LPH/CHS agencies to assure a thorough contact investigation is conducted for each infectious TB case. a) Collect data on contact follow-up investigations from LPH/CHS agencies and maintain a database on these investigations; make recommendations for improvement of contact follow-up, as needed, based on data generated. Make interstate referrals, as needed, for contacts residing outside of Minnesota. b) Provide technical assistance to local providers on evaluation and treatment protocols for contacts to infectious TB. c) Assure medication is available statewide, without cost, to contacts with latent TB infection. d) Act as lead agency to coordinate response to multi-county or multi-state outbreaks of TB.	Cooperate with local public health to assure contacts of infectious TB cases are identified, located and evaluated. Assist to assure contacts with latent tuberculosis infections are treated with an adequate course of therapy.

Appendix A: Glossary of Key Terms

Disease Prevention and Control Common Activities Framework

For additional information, visit the Minnesota Department of Health website at www.health.state.mn.us

Advisory Committee on Immunization Practices (ACIP) is a group of medical and public health experts that develops recommendations on how to use vaccines to control diseases in the United States. The recommendations stand as public health advice that will lead to a reduction in the incidence of vaccine preventable diseases and an increase in the safe use of vaccines and related biological products. ACIP was established by the CDC under Section 222 of the Public Health Service Act (42 U.S.C. § 217a) and is governed by its charter.

District Epidemiologists, aka Field Services Epidemiologists: Minnesota Department of Health epidemiologists who work closely with local public health to provide advice, guidance, and perform disease investigations as necessary. See the MDH website for a map of districts.

Directly Observed Therapy (DOT) is a treatment method for tuberculosis. A health care worker brings medicine to a patient, watches the patient take it and assesses for side effects.

Health Alert Network (HAN): When an event threatens the health of Minnesotans, fast, efficient, and reliable communication to those responding to the event can prevent illness and save lives. Minnesota's Health Alert Network enables public health staff, tribal governments, health care providers, emergency workers, and others working to protect the public to exchange information during a disease outbreak, environmental threat, natural disaster, or act of terrorism.

Immunization Practices Improvement (IPI) Program is a component of the Immunization Program at the Minnesota Department of Health. IPI merges key aspects of the overall immunization program at the provider level: vaccine management, vaccine accountability, and clinical immunization practices. The IPI Program Advisor, participates in the IPI Program and conducts site visits to the clinics in their area.

Infectious Disease: refers to diseases that spread from person to person, also referred to as "communicable" diseases. As used in the DP&C Common Activities Framework, it also includes reportable diseases, which may or may not be infectious. By law, a number of infectious diseases must be reported to the Minnesota Department of Health pursuant to Minnesota Reporting Rules Chapter 4605.

Latent TB Infection (LTBI) is the latent or inactive phase of infection with tuberculosis (TB) bacteria. A person with LTBI has small amounts of TB bacteria present in the body, has no TB-related symptoms or chest x-ray findings, and is not able to transmit TB to others.

Local Epidemiology Network of Minnesota (LENM): The purpose of LENM is to enhance Disease Prevention & Control (DP&C) activities and services within Minnesota's local health departments, with a primary focus on infectious diseases. LENM membership is open to all Minnesota local health departments; MDH district epidemiologists are ad-hoc members. A record of agency membership is contained on the MDH Workspace.

LPH/CHS Agency: Local public health agency or community health services agencies are operated by Community Health Boards, but may be housed in a variety of organizational and governance structures. For example, the agency may be a stand-alone health department or be part of a larger health and human services structure.

Minnesota Electronic Disease Surveillance System (MEDSS): MEDSS is an electronic disease surveillance system that allows public health officials to receive, manage, process, and analyze disease-related data. MEDSS offers new tools for automatic disease reporting, case investigations, and case follow-up within the state of Minnesota. It is an integrative system allowing easy sharing and connecting among MDH, physicians and local public health. The system is not fully operational as of September 2012.

Minnesota Immunization Information Connection (MIIC): MIIC is a network of regional immunization services—health care providers, public health agencies, health plans, and schools working together to prevent disease and improve immunization levels. These services combine high quality immunization delivery with public health assessment and outreach to help ensure children and adults are protected against vaccine-preventable diseases. These regional services use a confidential, computerized information system that contains shared immunization records. This information system—also known as an immunization registry—provides clinics, schools, and parents with secure, accurate, and up-to-date immunization data, no matter where the shots were given.

Minnesota Vaccines for Children Program (MnVFC) is an enhanced version of the federally funded Vaccines for Children (VFC) program. Its goal is to ensure affordable vaccines for all children within their own clinics

Regional DP&C Teams: The Regional DP&C Teams will meet at least twice a year to support the work of the Disease Prevention and Control Common Activities Framework. MDH field epidemiologists together with local public health staff in each region should decide how to meet (by phone or in person) and how often meetings occur. Participating in these regional meetings is necessary and expected for local public health staff and MDH regional field epidemiologists. Currently, the Local Epidemiology Network of Minnesota (LENM) functions as the metro regional team, although its membership is not limited to the metro.

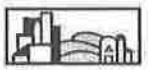
Tuberculosis (TB) is a serious disease caused by Mycobacterium tuberculosis. Active TB disease most often affects the lungs, but can involve any part of the body. TB is transmitted through the air; extended close contact with someone with infectious TB disease is typically required for TB to spread. The MDH TB Prevention and Control Program collaborates with clinicians and local health departments to ensure that persons with TB receive effective and timely treatment and that contact investigations are performed to minimize the spread of TB.

TB Health Threat Act: Minn. Stat § 144.4801 to 144.4813 (2011); This statute provides the authority to commit a person who has active tuberculosis or is clinically suspected of having active tuberculosis and is an endangerment to the public health because of refusal or inability to adhere to treatment and/or isolation precautions. The statute states that a licensed health professional must report to the commissioner or a disease prevention officer within 24 hours of obtaining knowledge of a reportable person as specified in subdivision 3, unless the licensed health professional is aware that the facts causing the person to be a reportable person have previously been reported.

Workspace: MDH Workspace is a password protected portal used by MDH staff, local health departments (LHDs), and other emergency preparedness and response partners for planning and response work. The MDH

Workspace is the repository for the Health Alert Network messaging tools, a public health directory of health responders to emergencies, and a document library.

Appendix B:
Using the Framework for Accreditation



Disease Prevention and Control Common Activities Framework

The Disease Prevention and Control Common Activities Framework may serve as one piece of documentation to demonstrate a local public health agency's fulfillment of some of the national public health accreditation standards and measures.

- The following table lists possible uses of the Framework.
- It is up to the agency applying for accreditation to determine if and when the Common Activities Framework should be submitted to PHAB as documentation.
- Contact the MDH Public Health Nurse Consultants with questions about accreditation. The Minnesota Department of Health supports local public health agencies in their efforts to meet the measures and is willing to provide additional documentation on disease prevention and control responsibilities if needed.

> *"The accountability for meeting the measures rests with the health department being reviewed for accreditation...Therefore, even when the state has the primary responsibility to perform a function that is specified in a measure, the local health must still provide documentation that it is being performed. The local health department cannot dismiss its accountability for meeting the measure, even if the state health department is performing the function."*
>
> Excerpt from PHAB National Public Health Department Accreditation Documentation Guidance, Version 1.0

Using the Common Activities Framework as PHAB documentation may require the submission of additional documents to fully meet the measure. These three documents are an example.

1. **Disease Prevention and Control Common Activities Framework**: Assigns responsibilities for specific services and activities related to Disease Prevention, Surveillance/Data Collection, and Control to local public health and the state health department. It assures access to services provided by others.

2. **Assurances and Agreements**: Formalizes the agreement of responsibility in the Common Activities Framework between Community Health Boards and the Minnesota Department of Health. This signed, annual agreement is supplemental to the five-year Master Grant Contracts. You may request copies from the Community and Family Health Division, MDH.

3. **Other**: Documentation that the function specified in the measure was performed.

Local Public Health: Meeting the PHAB Measures

Consider using the DP&C Common Activities Framework to demonstrate the **assignment of responsibilities** or **access to services provided by others** for these PHAB Measures (Version 1.0) related to disease prevention and control activities:

1.2.1 A	Maintain a surveillance system for receiving reports 24/7 in order to identify health problems, public health threats, and environmental public health hazards
2.1.1 A	Maintain protocols for investigation process
2.1.2 T/L	Demonstrate capacity to conduct an investigation of an infectious or communicable disease
2.1.4 A	Work collaboratively through established governmental and community partnerships on investigations of reportable/disease outbreaks and environmental public health issues Includes: Provision for laboratory testing for notifiable/reportable diseases
2.3.1 A	Maintain provisions for 24/7 emergency access to epidemiological and environmental public health resources capable of providing rapid detection, investigation, and containment/mitigation of public health problems and environmental public health hazards
2.4.1 A	Maintain written protocols for urgent 24/7 communications
6.2.3 A	Provide information or education to regulated entities regarding their responsibilities and methods to achieve full compliance with public health related laws
10.2.2 A	Maintain access to expertise to analyze current research and its public health implications
12.1.2 A	Maintain current operational definitions and/or statements of the public health governing entity's roles and responsibilities

Appendix C: History of the DP&C Common Activities Framework

Background

Infectious disease prevention and control (DP&C) includes activities of detecting acute and communicable diseases, developing and implementing prevention of disease transmission, and implementing control measures during outbreaks. Controlling communicable diseases is perhaps the oldest and most fundamental public health responsibility. For decades, it was the primary responsibility of local Boards of Health and, in fact, the main reason for their creation. Yet, the Local Public Health Act (§145A) and the Department of Health Act (§144) are ambiguous about respective state and local authorities for conducting disease prevention and control activities.

Subdivision 6 of the Local Public Health Act states, A board of health shall make investigations and reports and obey instructions on the control of communicable diseases as the commissioner may direct under section 144.12, 145A.06, subd. 2, or 145A.07. Boards of health must cooperate so far as practicable to act together to prevent and control epidemics.

Note that this is a requirement of local boards of health whether or not they form a Community Health Board and receive the CHS subsidy.

While intended to allow for flexibility and varied capacity to address communicable disease problems, such broad direction leaves ambiguity and uncertainty about the respective roles of state and local public health. Clearly, both the Minnesota Department of Health (MDH) and local Boards of Health have assumed a shared responsibility for conducting public health activities.

In 1989, the MDH DP&C Division and the State Community Health Services Advisory Committee (SCHSAC) formed a workgroup to review roles and responsibilities for conducting DP&C activities at the state and local levels. The outcome was a DP&C cooperative agreement that formalized some of MDH relationships with local public health.

Communicable DP&C Common Activities Framework

In 1996, another SCHSAC workgroup was formed, which abolished the old agreement and redefined expected roles and responsibilities for DP&C. The final report of the workgroup was released in 1998. This report, which was approved by SCHSAC, set standards for DP&C activities to be carried out at the state and local levels as contained in the initial version of the Communicable DP&C Framework of Common Activities. **This Framework lays out a minimum set of DP&C activities that are to be carried out by all local public health agencies and MDH**. These activities are to be reflected in state and local community health service (CHS) planning efforts. Those agencies that are currently unable to carry out these activities are expected to strive to reach this level. MDH activities listed in the Framework are to be implemented by MDH Infectious Disease Epidemiology Prevention and Control (IDEPC) Division staff in support of local public health agency DP&C activities.

The 1998 version of the Framework also listed suggested activities for private health care providers and health plans in support of DP&C public health efforts. The Framework as revised (May 2001) focuses on local public health agency and MDH DP&C activities.

The Framework may be used as the foundation for a DP&C work plan for both MDH and local public health agencies. Yet to be determined is how local public health and MDH can measure their progress in maintaining and improving DP&C activities as contained in the Framework.

DP&C Leadership Team

Another recommendation to enhance the partnership between state and local public health for disease prevention and control that was made by the SCHSAC workgroup in the 1998 report was to create a DP&C Leadership Team.

This Team was comprised of members representing regional and job specific categories from local public health agencies, a representative from each of the sections within the IDEPC Division, as well as a representative from the MDH Community Health Services Division. The DP&C Leadership Team meetings were intended to provide an ongoing forum for the review and discussion of how DP&C activities are implemented at the state and local level. The Team met about five times a year. One co-chair represented local public health; the other co-chair represented MDH.

The DP&C Leadership Team revised the Communicable DP&C Framework of Common Activities in February 2003, in preparation for the development of local public health 2004-2007 CHS Plans. The DP&C Leadership Team disbanded in 2006 per the Team's own recommendations.

Alignment with National Standards

In the fall of 2011, the national voluntary accreditation program began. MDH as well as some CHBs are striving to become accredited in the next few years. As this is an important document used in planning disease prevention and control activities for both CHBs and MDH, it was determined that it should be examined and if needed aligned with the voluntary national accreditation standards. In May 2012, SCHSAC created the DP&C Common Activities Framework Ad Hoc Review Group to complete this work. The group proposed a revised Framework and a set of recommendations that were adopted by SCHSAC on October 3, 2012.

Appendix D:
2012 SCHSAC Ad Hoc Group

Disease Prevention and Control Common Activities Framework

Charge

The SCHSAC DP&C Common Activities Ad Hoc Review Group will:

- Review the activities in the DP&C Common Activities framework.
- Examine the National Public Health Accreditation Standards.
- Align the Framework with the national accreditation standards.
- Make recommendations for distribution, training and technical assistance.

Background

Infectious disease prevention and control (DP&C) includes activities of detecting acute and communicable diseases, developing and implementing prevention of disease transmission, and implementing control measures during outbreaks. Controlling communicable diseases is perhaps the oldest and most fundamental public health responsibility. Yet, the Local Public Health Act (Chapter 145A) and the Department of Health Act (Chapter 144) are ambiguous about respective state and local authorities for conducting disease prevention and control activities.

In 1989, the MDH DP&C Division and SCHSAC formed a workgroup to review roles and responsibilities for conducting disease prevention and control activities at the state and local levels. The outcome was a disease prevention and control cooperative agreement that formalized some of MDH relationships with local public health.

In 1996, another SCHSAC workgroup was formed, which abolished the old agreement and redefined expected roles and responsibilities for disease prevention and control. The final report of the workgroup was approved and released in 1998. This report set standards for disease prevention and control activities to be carried out at the state and local levels in the Communicable DP&C Framework of Common Activities. It also listed suggested activities for private health care providers and health plans in support of public health efforts in the areas of disease prevention and control.

This framework lays out a minimum set of disease prevention and control activities that are to be carried out by all local public health agencies and MDH. These activities are to be reflected in state and local community health assessment and planning efforts. Those agencies that are currently unable to carry out these activities are expected to strive to increase their capacities to do so. MDH activities listed in the framework are to be implemented by MDH Infectious Disease Epidemiology Prevention and Control (IDEPC) Division staff in support of local public health agency disease prevention and control activities. This framework also lists disease prevention and control activities that are conducted jointly by MDH and local public health agencies.

In the fall of 2011, the national voluntary accreditation program began. MDH as well as some CHBs are striving to become accredited in the next few years. As this is an important document, used in planning disease prevention

and control activities for both CHBs and MDH, it should be examined and if needed aligned with the voluntary national accreditation standards.

Methods

A SCHSAC Ad Hoc review group will meet two or three times to review and revise the framework to bring it into alignment with the voluntary national accreditation standards.

Products

A revised and updated version of the framework.

Resources

MDH staff with expertise in disease prevention and control will serve as the primary resource for this work, with assistance from the MDH Office of Performance Improvement.

Membership

Local Public Health

Fred Anderson, Washington County Community Health Board
Renee Frauendienst, Stearns Community Health Board
Gloria Tobias, Countryside Community Health Board

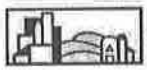
Minnesota Department of Health

Linda Bauck, Office of Performance Improvement
Kris Ehresmann, Infectious Disease Epidemiology, Prevention and Control
Amy Westbrook, Infectious Disease Epidemiology, Prevention and Control
Claudia Miller, Infectious Disease Epidemiology, Prevention and Control
Terry Ristinen, Infectious Disease Epidemiology, Prevention and Control

Minnesota Department of Health Staff to Workgroup

Becky Buhler, Office of Performance Improvement

Appendix E: 2012 Recommendations as Approved by SCHSAC



Disease Prevention and Control Common Activities Framework

Recommendations approved by SCHSAC on October 3, 2012.

Recommendation 1

SCHSAC should reaffirm that the Disease Prevention and Control Common Activities Framework is the foundation for local public health agency providing disease surveillance, prevention and control resources and services as mandated by Minn. Stat. § 145A, the Local Public Health Act.

> ***145A.04 POWERS AND DUTIES OF BOARD OF HEALTH.***
>
> *Subd. 6.* ***Investigation; reporting and control of communicable diseases.*** *A board of health shall make investigations and reports and obey instructions on the control of communicable diseases as the commissioner may direct under section 144.12, 145A.06, subdivision 2, or 145A.07. Boards of health must cooperate so far as practicable to act together to prevent and control epidemic diseases.*

This Framework lays out a minimum set of DP&C activities that are to be carried out by all local public health agencies and MDH. The Framework specifies that:

- All local public health agencies will provide disease surveillance, prevention and control for tuberculosis (TB) with support from MDH.
- Responsibilities for all other infectious diseases follow-up, other than TB, will be determined jointly by the local public health agency and staff from the Infectious Disease Epidemiology, Prevention and Control (IDEPC) Division, Minnesota Department of Health, as necessary based on local capacity and other factors.
- This Framework also lists disease prevention and control activities that are conducted jointly by MDH and local public health agencies

Recommendation 2

MDH should amend the annual Assurances and Agreements, beginning in 2013, to formalize the agreement of responsibilities outlined in the DP&C Common Activities Framework. This formal agreement between partners is a requirement of the Public Health Accreditation Board. It will enable MDH and local public health agencies to use the Framework as accreditation documentation if they choose.

Addition to Assurances and Agreements will state:

The Agency will use the Disease Prevention and Control Common Activities Framework, as adopted by the State Community Health Services Advisory Committee (SCHSAC), as the foundation for providing resources and services in keeping with its responsibilities as set forth in the framework.

Recommendation 3

The Minnesota Department of Health will continue to support and use regional DP&C teams to communicate information between local public health and the Minnesota Department of Health.

The regional DP&C teams will meet at least twice a year to support the work of the Disease Prevention and Control Common Activities Framework.

- MDH field epidemiologists together with local public health staff in each region should decide how to meet (by phone or in person) and how often meetings occur.
- Participating in these regional meetings is necessary and expected for local public health staff and MDH regional field epidemiologists.

Note: Currently, the Local Epidemiology Network of Minnesota (LENM) functions as the metro regional team, although its membership is not limited to the metro.

Recommendation 4

MDH (IDEPC Division) will involve the Local Epidemiologists of Minnesota Network (LEMN), MDH district epidemiologists, the Regional DP&C Teams and appropriate MDH program staff in the development and implementation of the following items related to responsibilities in the DP&C Common Activities Framework:

1. A protocol for active and latent tuberculosis (TB) case management for local public health, and
2. A communications protocol between local public health, the Minnesota Department of Health, and community partners
    - The guidance will include a general description of roles and how to share information through health alerts and with the media.
    - A template intake form for general infectious disease information will be developed.
    - The Workspace will be updated to include all designated staff roles in the DP&C Common Activities Framework.
3. Standard reports that can be produced using MEDSS, when the system is fully operational.

Recommendation 5

Local public health agencies will assure that the responsibilities for disease surveillance, prevention and control activities as stated in the DP&C Common Activities Framework, and pursuant to Minn. Stat. § 145A, are being performed.

The local public health agencies will:

- Assign a staff person(s) the responsibility for assuring that all disease surveillance, prevention and control activities as stated in the DP&C Common Activities Framework, and pursuant to Minn. Stat. § 145A, are being performed.
- Local public health will take responsibility to work with their local clinics and other providers about their suggested responsibilities in the Framework.

Recommendation 6

The Minnesota Department of Health will assure that the responsibilities for disease surveillance, prevention and control activities as stated in the DP&C Common Activities Framework, and pursuant to Minn. Stat. § 145A, are being performed

The Minnesota Department of Health will:

- Include the Framework in orientation for new employees in the Infectious Disease Epidemiology, Prevention and Control Division at MDH and review annually with division staff.
- Request MDH Regional epidemiologists review the Framework annually with local public health leadership and staff and include it in orientation for new leaders.
- Take responsibility to communicate with Health Plans about their suggested responsibilities in the Framework.

Recommendation 7

To keep the Framework up-to-date and relevant for the work of MDH and local public health, The State Community Health Services Advisory Committee (SCHSAC) will:

- Convene a workgroup to review the Disease Prevention and Control Common Activities Framework at least every 5 years due to emerging infectious diseases, changing pressures in the local public health system, and to meet accreditation documentation requirements.
- Ask the SCHSAC Public Health Emergency Preparedness Oversight Group and the MDH Office of Emergency Preparedness to:
    a. Consider using the Framework as a tool for coordination as emergency preparedness begins to align more with hospitals and other health system partners.
    b. Provide guidance to local public health on using the Framework to fulfill the Public Health Preparedness Capabilities as described in CDC's Public Health Preparedness Capabilities: National Standards for State and Local Planning when necessary.

Appendix F: Framework Reapproved by SCHSAC Executive Committee

Disease Prevention and Control Common Activities Framework

Framework reapproved by SCHSAC Executive Committee on July 15, 2015.

The SCHSAC Executive Committee consists of representatives from each SCHSAC region. Each region also has an alternate to the Executive Committee. The Executive Committee may act in the name of the State Community Health Services Advisory Committee under special circumstances.

On July 8, 2015, SCHSAC Chair Karen Ahmann requested that the SCHSAC Executive Committee consider re-approving the Disease Prevention and Control Common Activities Framework, October 2012. No changes would be made to the existing Framework except an addition to the appendix documenting the re-approval process.

The Disease Prevention and Control Common Activities Framework was last revised in 2012 with the purpose of aligning with the national voluntary public health accreditation standards. At that time, it was thought that a review every five years would meet PHAB documentation needs. According to PHAB, the document needs to be reviewed and approved more frequently, every 24 months. Immediate action by the SCHSAC Executive Committee was necessary to assist Minnesota Community Health Boards currently in the process of seeking voluntary national accreditation.

On July 15, 2015, the SCHSAC Executive Committee reapproved the Disease Prevention and Control Common Activities Framework.

2015 SCHSAC Executive Committee Members
Chair: Karen Ahmann (Polk-Norman-Mahnomen), Northwest Region
Chair-Elect: Doug Huebsch (Partnership4Health), West Central Region
Past Chair: Larry Kittelson (Horizon), West Central Region

Northeast Region
Loren Bergstedt (Carlton-Cook-Lake-St.Louis)
Alt: Betsy Johnson (Aitkin-Itasca-Koochiching)

Northwest Region
Betty Younggren (Quin)
Alt: Helene Kahlstorf (North Country)

West Central Region
Bev Bales (Horizon)
Alt: Don Skarie (Partnership4Health)

Central Region
Susan Morris (Isanti-Mille Lacs)
Alt: Warren Peschl (Benton)

Metro Region
Nancy Schouweiler (Dakota)
Alt: Cynthia Bemis Abrams (Bloomington)

Southeast Region
Marcia Ward (Winona)
Alt: Ted Seifert (Goodhue)

South Central Region
Bill Groskreutz (Faribault-Martin)
Alt: Amy Roggenbuck (LeSueur-Waseca)

Southwest Region
Rosemary Schultz (Des Moines Valley)
Alt: Jenna Wiese (Countryside)

Meeker-McLeod-Sibley Community Health Services

Local Health Disaster Plan Guidance

For The Health and Medical Annex

To The Local Emergency Operations Plan

Attachment J

- MDH Investigation Protocols: Measles, Mumps, Pertussis
- EH Hazards: Foodborne, water
- MMS TB Protocols

GUIDELINES FOR THE PREVENTION AND CONTROL OF MEASLES IN MINNESOTA

MINNESOTA DEPARTMENT OF HEALTH VERSION 1.3
SEPTEMBER 2014

This document has been prepared through a collaborative effort of the Local Epidemiology Network of Minnesota and the Minnesota Department of Health Field Services and Vaccine Preventable Disease Section

HOW TO USE THIS DOCUMENT: This document was prepared as a protocol to coordinate measles response efforts in Minnesota. The main objective of this protocol is to serve as a guide that provides easily accessible, useful information pertaining to each organization's role in the measles response effort. Throughout the document, agencies are referred to based on the breakdown below:

MINNESOTA DEPARTMENT OF HEALTH (MDH CENTRAL)

- ✓ MDH Public Health Laboratory
- ✓ IDEPC Division Director
- ✓ State & Assistant State Epidemiologists
- ✓ Measles Epidemiologist
- ✓ IDEPC Medical Director
- ✓ Healthcare Facility Exposure Consultants
- ✓ VPD Section & Unit Managers
- ✓ IDEPC Epidemiologists
- ✓ Immunization Consultants

METROPOLITAN DISTRICT (LHDS AND METROPOLITAN DISTRICT EPIDEMIOLOGIST)

- ✓ Hennepin
- ✓ Anoka
- ✓ Dakota
- ✓ Carver
- ✓ Ramsey
- ✓ Washington
- ✓ Scott

GREATER MINNESOTA (LHDS AND GREATER MINNESOTA DISTRICT EPIDEMIOLOGISTS)

- ✓ Northwest
- ✓ Northeast
- ✓ Central
- ✓ West Central
- ✓ Southwest
- ✓ South Central
- ✓ Southeast

HEALTHCARE COMMUNITY

- ✓ Licensed health care providers
- ✓ Health care facilities
- ✓ Medical laboratories
- ✓ Veterinarians & veterinary medical laboratories

A Measles Toolkit, including factsheets, template letters and other guidance is found after the main body of the document. All materials can be found on the Minnesota Department of Health's Workspace, located here: https://oep.health.state.mn.us/workspace/web

Hyperlinks in RED will take you to either a definition or a bookmarked location within the document.
Hyperlinks in BLUE will take you to an external website.
Words bolded in BLACK are for emphasis only.

Please refer to the Workspace for the most current version of this document. The guidelines and toolkit are living documents that will be updated over time and expanded upon as necessary. If you have questions or concerns about the document, its links or its attachments, please call Emily Banerjee (telephone: 651-201-5488) or Cynthia Kenyon (651-201-5569) at the Minnesota Department of Health.

TABLE OF CONTENTS

1. MEASLES DISEASE & EPIDEMIOLOGY

1.1 INFECTIOUS AGENT

- Measles (rubeola) is classified as a member of the genus Morbillivirus and the family Paramyxoviridae, and is a single-stranded, enveloped RNA virus.

1.2 DESCRIPTION OF ILLNESS (WILD-TYPE)

- Exposure to wild-type measles in an immunologically naïve individual will produce an acute illness characterized by generalized, maculopapular rash lasting ≥3 days; and temperature ≥101°F (39.3°C); and cough, coryza, or conjunctivitis
    - The prodrome lasts 2–4 days (range 1–7 days). It is characterized by fever, which increases in stepwise fashion, often peaking as high as 103°–105°F (39.4 – 40.5°C). This is followed by the onset of cough, coryza (runny nose), or conjunctivitis. There is typically no break between fever and rash onset.
    - Koplik spots, a rash present on mucous membranes, is considered to be unique to measles but does not always occur. If present, it shows up 1–2 days before rash onset to 1–2 days after rash onset, and appears as blue-white spots on the bright red background of the buccal mucosa.
    - The measles rash is a maculopapular rash that usually lasts 5–6 days. It begins at the hairline, then involves the face and upper neck. During the next 3 days, the rash gradually proceeds downward and outward, reaching the hands and feet. The lesions are generally discrete, but may become confluent, particularly on the upper body. The rash fades in the same order that it appears, from head to extremities. The rash is rarely itchy (pruritic) and is not 'sandpapery'.
    - Other symptoms of measles include anorexia, diarrhea, especially in infants, and generalized lymphadenopathy.

1.3 MODIFIED PRESENTATIONS OF ILLNESS

- Modified measles:
    - Occurs primarily in patients who received immune globulin (IG) as post-exposure prophylaxis and in young infants who have some residual maternal antibody
    - It is usually characterized by a prolonged incubation period, mild prodrome, and sparse, discrete rash of short duration.
    - Similar mild illness has been reported among previously vaccinated persons.

- Atypical measles:
    - Occurs only in persons who received inactivated ("killed") measles vaccine (KMV) and are then exposed to wild-type measles virus. An estimated 600,000 to 900,000 persons received KMV in the U.S. from 1963 to 1967. KMV sensitizes the recipient to measles virus antigens

without providing protection. Subsequent infection with measles virus leads to signs of hypersensitivity **polyserositis.**

- It is characterized by fever, pneumonia, pleural effusions, and edema. The rash is usually **maculopapular** or **petechial**, but may have **urticarial, purpuric,** or **vesicular** components. It appears first on the wrists or ankles. It may be prevented by revaccinating with live measles vaccine.
- Moderate to severe local reactions with or without fever may follow vaccination; these reactions are less severe than with infection with wild measles virus.

1.4 MODES OF TRANSMISSION & EXPOSURE

- Transmission occurs from person to person by:
  - Inhalation of aerosolized droplet nuclei, no face-to-face exposure required **(airborne)**
  - Inhalation/ingestion of droplets sprayed out when someone coughs or sneezes **(droplet)**
  - Touching your eyes, nose and/or mouth after touching surfaces/objects contaminated with infectious secretions/droplets **(fomites)**

- There is no commonly accepted, evidence-based definition of **exposure**. The definition of exposure to measles utilized in this document is as follows:
  - Having shared airspace at the same time with an infectious case of measles **or**
  - Having shared airspace (in a closed area or room) up to two hours after an infectious case of measles has occupied the area

- Exposure as it pertains to specific outbreaks may vary. Once transmission settings have been identified, the definition of 'exposure' for a specific outbreak will be delineated

1.5 COMMUNICABILITY & ENVIRONMENT

- Measles virus is highly contagious, with >90% secondary attack rates among susceptible persons.
- The virus is viable for less than 2 hours at ambient temperatures on surfaces and objects, while the aerosolized virus remains infective for 30 minutes or more.
- The virus is inactivated by UV, visible light and heat (after 30 minutes at 132.8°F (56°C)).
- It is also susceptible to many disinfectants, including 1% sodium hypochlorite (bleach), 70% alcohol and formalin (formaldehyde solution)

1.6 INCUBATION PERIOD

- The **incubation period** for measles is 10-12 days
  - Exposure to **prodrome** averages 10-12 days
  - Exposure to rash onset averages 14 days (range 7-21 days)

1.7 INFECTIOUS PERIOD

- From 4 days before rash onset to 4 days after rash onset

1.8 EXCLUSION / ISOLATION PERIOD

- Confirmed cases: Should stay at home (no visitors) through DAY 4 after rash onset, with rash onset being DAY ZERO (0). Case can resume activities on DAY 5.
- Susceptible & Exposed individuals*: Quarantine**
- Suspect/Probable cases: Isolation**

* Who were exposed to a confirmed case during 4 days before or 4 days after confirmed case's rash onset
** See **Isolation & Quarantine**

1.9 DIAGNOSIS

- Measles is typically diagnosed by assessing clinical compatibility of case patient along with:
  - Positive laboratory test results **or**
  - Compatible epidemiologic history linking suspect case to a probable or confirmed case
- See **Case Definition** for more details about clinical presentation and case classifications

1.10 DIFFERENTIAL DIAGNOSES

- Other infectious and non-infectious etiologies that may cause generalized rash include:
  - Rubella, Coxsackievirus, Echovirus, Epstein-Barr virus, Erythema infectiosum (Fifth Disease), HIV, Kawasaki disease, Roseola infantum, Scarlet fever, Pharyngoconjunctival fever
  - Dengue fever, Rocky Mountain spotted fever
  - Dermatologic manifestations of Viral hemorrhagic fevers (VHFs)
  - Cutaneous manifestations of syphillis
  - Toxic Shock Syndrome
  - Drug reactions (e.g. antibiotics)
  - 'Irritant' or 'allergic' dermatitis (aka 'contact' dermatitis)

1.11 TREATMENT

- Treatment is supportive

1.12 COMPLICATIONS

- Approximately 30% of reported measles cases have one or more complications, including:
  - **Pneumonia,** the complication that is most often the cause of death in young children.
  - Ear infections occur in ≈1 in 10 measles cases. Permanent loss of hearing can result.
  - Diarrhea is reported in about 8% of cases.

- The aforementioned complications of measles are more common among children younger than 5 years of age and adults 20 years of age and older.
- Even in previously healthy children, measles can be a serious illness requiring hospitalization. As many as 1 out of every 20 children with measles gets pneumonia, and about 1 child in every 1,000 who get measles will develop encephalitis, and can leave the child deaf or mentally retarded.

- For every 1,000 children who get measles, 1 or 2 will die from it.
- Measles in a susceptible, pregnant woman can result in a miscarriage, premature birth, or a low-birth-weight baby.
- In infected individuals where malnutrition and vitamin A deficiency are common, measles can be very serious.
- It is the leading cause of blindness among African children.
- Measles kills almost 1 million children in the world each year.
- Subacute sclerosing panencephalitis (SSPE) is a rare degenerative central nervous system disease believed to be due to persistent measles virus infection of the brain. Onset occurs an average of 7 years after measles (range 1 month–27 years), and occurs in 5-10 cases per million reported measles cases. The onset is insidious, with progressive deterioration of behavior and intellect, followed by ataxia, myoclonic seizures, and eventually death. SSPE has been extremely rare since the early 1980s.

1.13 PRESUMPTIVE EVIDENCE OF IMMUNITY

- To presume an exposed individual immune at least one of the following should be true:

- Documentation of age-appropriate vaccination with a live measles virus-containing vaccine§:
  - preschool-aged children: 1 dose
  - school-aged children (grades K-12): 2 doses
  - adults not at high risk¶¶: 1 dose, or
- Laboratory evidence of immunity,† or
- Laboratory confirmation of disease, or
- Born before 1957

§ The first dose of MMR vaccine should be administered at age ≥12 months; the second dose of measles- or mumps-containing vaccine should be administered no earlier than 28 days after the first dose.
¶¶ Adults at high risk for exposure and transmission include students in post-high school educational institutions, health-care personnel, and international travelers.
† Measles, rubella, or mumps immunoglobulin G (IgG) in serum; equivocal results should be considered negative.

- Presuming immunity in exposed adults at high risk for exposure and transmission:

Students at post-high school educational institutions	Health-care personnel†	International travelers
▪ Documentation of vaccination with 2 doses of live measles virus-containing vaccine,§ or ▪ Laboratory evidence of immunity,¶ or ▪ Laboratory confirmation of disease, or ▪ Born before 1957	▪ Documentation of vaccination with 2 doses of live measles virus-containing vaccine,§ or ▪ Laboratory evidence of immunity,¶ or ▪ Laboratory confirmation of disease	▪ Documentation of age-appropriate vaccination with a live measles virus-containing vaccine: –infants aged 6–11 months**: 1 dose –persons aged ≥12 months§: 2 doses, or ▪ Laboratory evidence of immunity,¶ or ▪ Laboratory confirmation of disease, or ▪ Born before 1957

[§] The first dose of MMR vaccine should be administered at age ≥12 months; the second dose of measles- or mumps-containing vaccine should be administered no earlier than 28 days after the first dose.
[¶] Adults at high risk for exposure and transmission include students in post-high school educational institutions, health-care personnel, and international travelers.
[†] Measles, rubella, or mumps immunoglobulin G (IgG) in serum; equivocal results should be considered negative.
[‡] For unvaccinated personnel born before 1957 who lack laboratory evidence of measles, rubella, or mumps immunity or laboratory confirmation of disease, health-care facilities should consider vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval (for measles and mumps) and 1 dose of MMR vaccine (for rubella), respectively.
** Children who receive a dose of MMR vaccine at age <12 months should be revaccinated with 2 doses of MMR vaccine, the first of which should be administered when the child is aged 12 through 15 months and the second at least 28 days later. If the child remains in an area where disease risk is high, the first dose should be administered at age 12 months.

1.14 PREVENTION

- One dose of measles-containing vaccine (MCV) is approximately 85% effective if administered at age 9 months and up to 95% effective if administered at age ≥1 year. More than 99% of people who receive 2 doses of MCV develop serologic evidence of measles immunity.
- Refer to the Centers for Disease Control's Advisory Committee on Immunization Practices (ACIP) for current immunization recommendations and schedules: ACIP.

1.15 POST-EXPOSURE PROPHYLAXIS

- MCV and immune globulin (IG) may be effective as post-exposure prophylaxis.
- MCV, if administered within 72 hours after initial exposure to measles virus, may provide some protection. If the exposure does not result in infection, the vaccine should induce protection against subsequent measles virus infection.
- IG can be used to prevent or mitigate measles in a susceptible person when administered within 6 days of exposure. However, any immunity conferred is temporary unless modified or typical measles occurs, and the person should receive MCV 5–6 months after IG administration.

1.16 OCCURRENCE & TEMPORAL PATTERN

- Measles occurs throughout the world. However, interruption of indigenous transmission of measles has been achieved in the United States and other parts of the Western Hemisphere.
- In temperate areas, measles disease occurs primarily in late winter and spring.

1.17 RESERVOIRS

- Humans are the natural hosts of the virus. An asymptomatic carrier state has not been documented.
- No animal reservoirs have been identified.

2. CASE DEFINITION

2.1 MEASLES CLINICAL CASE DEFINITION

Measles is an acute illness characterized by:

- Generalized, maculopapular rash lasting ≥3 days; and
- Temperature ≥101°F (39.3°C); and
- Cough, coryza (runny nose), or conjunctivitis (itchy, red eyes)

2.2 CASE CLASSIFICATION

Confirmed*

An acute febrile rash illness† with:

- Isolation of measles virus‡ from a clinical specimen; or
- Detection of measles-virus specific nucleic acid‡ from a clinical specimen using polymerase chain reaction; or
- IgG seroconversion‡ or a significant rise in measles immunoglobulin G antibody‡ using any evaluated and validated method; or
- A positive serologic test for measles immunoglobulin M antibody‡§; or
- Direct epidemiologic linkage to a case confirmed by one of the methods above.

Probable*

In the absence of a more likely diagnosis, an illness that meets the clinical case definition with:

- No measles laboratory testing and
- No confirmed exposure to a laboratory-confirmed measles case

Suspect

- Any febrile illness that is accompanied by rash and that does not yet meet the criteria for a confirmed, epi-linked or probable case of measles; or
- Any lab report indicating measles infection with no initial knowledge of symptoms

Ruled-out

- A suspect case that is investigated and does not meet the definition for a confirmed, epi-linked or probable case.

Lost to follow-up

- A suspect case for whom follow-up could not be completed, because:
  - After 5 attempts to reach the case, the case is deemed unreachable (attempts should occur at different times of the day to maximize likelihood of reaching individual) or
  - No valid locating information could be obtained for the case

*CSTE Position Statement 12-ID-07 (2013, January)

† Temperature does not need to reach ≥101°F (39.3°C) and rash does not need to last ≥3 days

‡ Not explained by MMR vaccination during the previous 6-45 days

§ Not otherwise ruled out by other confirmatory testing or more specific measles testing in a public health laboratory

3. LABORATORY TESTING & CONSIDERATIONS

3.1 GENERAL CONSIDERATIONS

- Since measles is uncommon in the United States, laboratory testing needs to be done to confirm a case.
- All specimens should be submitted to the Minnesota Department of Health's Public Health Laboratory (MDH-PHL) for testing. To expedite laboratory testing, call MDH at 651-201-5414 **before** submitting specimens.
- Laboratory testing should be restricted to those persons:
  - With fever and generalized maculopapular rash or
  - Exposed to measles, presenting with prodromal symptoms of measles with or without a rash.
- Testing persons with no rash, no fever, a vesicular rash, or a rash limited to the diaper area leads to false-positive results.
- In accordance with recommendations from the Centers for Disease Control and Prevention, the MDH lab routinely tests for both measles and rubella when specimens are submitted for either disease.

3.2 TESTING METHODS

- There are two methods used to test for measles:
  - Viral isolation (PCR or culture) and Serology
- Measles PCR is preferred however, as it is highly sensitive, timely, and is considered confirmatory.

3.3 PCR (PREFERRED METHOD) FOR MEASLES RNA

- A clinical specimen for PCR should be taken as soon as measles is suspected. Viral RNA is more likely to be detected when the specimen is collected as soon as possible after rash onset.
- Ideally, a specimen for measles PCR should be obtained within 0-3 days of rash onset (0-9 days at most). Consider the rash onset date as day '0.' Viral isolation requires the same specimens and may be done if PCR is negative.

What specimens to collect:

- Please send one (1) of the following specimens to the MDH-PHL, in order of preference:
  - Throat swab
  - Nasal, nasopharyngeal swab, or nasal wash
  - Urine specimen

Note: If date of specimen collection is on day 5-9 after rash onset (day 0), urine is preferred over other specimens. If date of specimen collection is already more than 9 days past rash onset, PCR is less likely to detect viral presence and may give false negative results.

Collection of PCR specimen(s):

- Throat swab*: Vigorously swab tonsillar areas and posterior nasopharynx with a viral culturette. Use tongue blade to depress tongue to prevent contamination of swab with saliva. Place swab into viral transport media (VTM).

- Nasal or nasopharyngeal swab*: Use sterile swabs to swab the nasal passage or the nasopharynx with either a viral culture swab or culturette. Place swab into VTM.
- Nasal wash (two techniques):
  - Use a syringe attached to a small plastic tube and 500 µl of VTM. After placing VTM in the nostril, aspirate as much of the material as possible and rinse the tube with the original (500 µl) of VTM.
    - or -
  - Use sterile swabs to swab the nasopharynx and throat with either a viral culture swab or culturette. Place both swabs in a tube containing 2-3 ml of transport medium. The virus is extremely cell-associated, so attempt to swab the throat and nasal passages to collect epithelial cells. After swabbing, place the swab back in the transport sheath.
- Urine specimen: Collect 10-40 ml of urine in a STERILE 50 ml centrifuge tube or a urine specimen container. First-morning voided specimens are ideal, but any urine collection is adequate. Have patient void directly into container, collecting from the first part of the urine stream if possible.

*Flocked swabs are preferred for specimen collection. Viral transport media (VTM) containing ~1% protein (e.g. bovine serum albumin or gelatin) best supports measles virus; however, sterile saline is acceptable

Where to send specimens:

- Minnesota Department of Health's Public Health Laboratory
  Attn: Biological Accessioning
  601 Robert St. N
  St. Paul, MN 55155-2531

Media and shipping conditions:

- Label tubes/containers with patient name, date of birth, and date collected
- Include an MDH Virology Specimen Submission Form for each specimen. Instruct facilities to fill out the form completely to delay testing delays
- Send to MDH Public Health Laboratory via overnight shipping.
- Specimens should be kept and transported at refrigeration temperature: 35.6°- 46.4°F (2-8° C).
- Before shipping, always consult with an MDH epidemiologist at 651-201-5414 or toll-free at 877-676-5414. The testing of your specimen(s) will be delayed if you do not consult with MDH prior to sending.

3.4 SEROLOGIC SPECIMEN COLLECTION

- IgM serology kits are no longer available at MDH-PHL.
- IgG serology is available on a limited basis for checking immunity during outbreaks or exposures. Clinics must check with MDH-PHL prior to sending in serum for IgG testing.
- Clinics may collect serum for serology and send to their own reference lab OR send to MDH to be forwarded to CDC for additional testing

What specimens to collect:

- Serum
  Acute IgM (Immunoglobulin M)
  - Positive result: Typically implies recent/current infection or recent vaccination*

- Draw blood for IgM antibody testing as soon as possible. Occasionally, false-negative measles IgM results occur when blood specimens are collected within 72 hours after rash onset. A second blood sample, collected 72 hours after rash onset, should be tested in this situation.
- Other diseases, such as parvovirus infection, infectious mononucleosis, or rheumatologic disease can cause false positive measles IgM antibody results.

Acute IgG (Immunoglobulin G)

- Positive result: Typically implies immunity due to either past infection or vaccination*
- Draw blood for acute IgG as early as possible when measles infection is suspected. For convenience, the blood drawn for measles IgM antibody testing may be used for acute IgG.
- Drawing acute and convalescent serum specimens for measles specific IgG antibody is rarely done.

Collection of serum specimen(s):

- For both IgM and IgG: Draw 1-2 ml blood in a red top tube; spin down serum if possible (50-100 µl of capillary blood (approximately 3 capillary tubes) may be collected in situations where venipuncture is not preferred, such as for young children

*Measles serology is complicated; there are a multitude of interpretations for IgG/IgM result combinations. Serology may give falsely positive or negative results, and is highly variable depending on specimen collection quality and timing. Call an MDH epidemiologist to discuss serology testing and interpretation.

Where to send specimens:

- Healthcare facility's normal reference laboratory**
- If submission to reference lab is not possible, call the MDH measles surveillance staff at 651-201-5414 or 1-877-676-5414 to discuss alternative options

**Many labs have the capacity to perform IgG and IgM serology for measles; however, in the event of a confirmed or highly suspect case, MDH may request specimens to forward to Centers for Disease Control and Prevention (CDC) for confirmatory testing.

Media and shipping conditions:

- Label tubes/containers with patient name, date of birth, and date collected
- Include an MDH Virology Specimen Submission Form for each specimen. Instruct facilities to fill out the form completely to delay testing delays
- Send to MDH Public Health Laboratory via overnight shipping.
- Specimens should be kept and transported at refrigeration temperature: 35.6°- 46.4°F (2-8° C).
- Before shipping, always consult with an MDH epidemiologist at 651-201-5414 or toll-free at 877-676-5414. The testing of your specimen(s) will be delayed if you do not consult with MDH prior to sending.

4. REPORTING MEASLES

4.1 KEY OBJECTIVES

- To identify measles cases and prevent disease transmission
- To comply with Minnesota's Communicable Disease Reporting Rule

4.2 COMMUNICABLE DISEASE REPORTING RULE

- Measles (rubeola) is a reportable disease in Minnesota. Suspect and confirmed cases and/or positive lab reports indicating measles infection must be reported to the Minnesota Department of Health **immediately** per the **Communicable Disease Reporting Rule.**
- Persons required to report measles to the Minnesota Department of Health:
  - Physicians & healthcare facilities
  - Medical laboratories
  - Veterinarians and veterinary medical laboratories
  - All licensed health care providers who provide care to any patient who has, is suspected of having, or has died from measles
  - Any person in charge of any institution, school, child care facility or camp
  - Local public health departments

4.3 HIPAA AND THE COMMUNICABLE DISEASE REPORTING RULE

- **Issue:** The following question has been raised by some providers, their medical records departments, and their staff: **Does HIPAA permit disclosure** of specific patient medical information related to a communicable disease to MDH or other local public health authorities without patient authorization?

- **Finding:** Yes. MDH has concluded that HIPAA permits a provider and/or the provider's medical records department or staff to release a patient's medical information pertaining to a communicable disease in accordance with the Minnesota Communicable Disease Reporting Rule and M.S. §144.05, subd. 1(a) without the patient's authorization. The medical information being released must be related to a communicable disease report. This may include, but is not limited to:
  - Personally identifiable information on the patient and their contacts
  - The tests conducted, and the results of those tests
  - Treatments related to the disease
  - Other pertinent information

4.4 FERPA AND THE COMMUNICABLE DISEASE REPORTING RULE

- **Issue:** (FERPA: Family Educational Rights and Privacy Act)
  Can a school share information on a student who has a communicable disease with public health authorities under FERPA without a parent's authorization?

- **Finding:** Yes. A school can share personally identifiable information on a student who has a communicable disease with public health authorities under FERPA without a parent's authorization because the information is connected to an emergency and it is necessary to protect the safety of the student and other individuals (according to FERPA rules 34 CFR Part 99.36).

4.5 HOW TO REPORT MEASLES IN MINNESOTA

- Notify the Minnesota Department of Health **immediately** upon suspicion of measles for any reason.
- Call our infectious disease reporting line at **651-201-5414** or **1-877-676-5414** (available 24 hours a day, 7days a week) and let the receptionist know you need to talk to someone about reporting measles

5. CASE INVESTIGATIONS

5.1 KEY OBJECTIVES

- To interview a probable or confirmed case of measles utilizing the Case Report Form (CRF)
- To identify the source and assess the potential for spread
- To facilitate specimen collection and submission for laboratory testing, if applicable
- To provide initial post-exposure prophylaxis to known susceptible, exposed contacts

5.2 SUSPECT CASE IS REPORTED

- The case investigation process begins at the time the suspect case is reported.

- A suspect case is typically identified via one of the following situations:
  - A positive lab result is faxed or mailed to MDH from a clinic or reported electronically through MEDSS
  - A healthcare provider clinically diagnoses a case at a clinic or hospital and calls MDH to report
  - An individual calls to inform a clinic, MDH, District Public Health or LHDs of their own symptoms and/or a known exposure to measles

- The organization receiving notice of a suspect case must immediately report it to MDH's infectious disease line (See Reporting Measles)

- MDH investigates each suspect case, gathering as much information necessary to rule-out or confirm (key demographic, clinical and laboratory details). Every ruled-out case is also entered into MEDSS.

5.3 CASE IS CONFIRMED

- Once a case has been classified as probable or confirmed (see Case Definition), MDH Central will enter the case details into MEDSS.

- In general, cases are investigated by an epidemiologist in the vaccine-preventable disease unit at MDH Central unless the case is a Hennepin County resident (then Hennepin County does the case investigation)

- If a case(s) is not investigated by MDH Central, then MDH Central will assign the case interview to District Public Health or LHDs initially *via telephone*. The event will also be tasked to that individual in MEDSS but the initial assignment of the case must be done as quickly as possible after confirming a case, since measles response is very time sensitive.

5.4 CASE INTERVIEW

- Decide who at your organization will be interviewing the case. Gather locating information either from an MDH representative or from MEDSS

- Utilize the the measles Case Report Form (CRF)(in the **Measles Toolkit**) to record case details

- Initiate communication with the case within one (1) working day (a voicemail counts)

- If you must leave a voicemail message, do not mention that you are calling about a suspect case of measles in (person's name). Instead, mention that you are calling about a serious, reportable disease and you need to speak to (person's name) as soon as possible

- If you cannot determine whether the telephone number is correct or not (e.g., the voicemail is generic, you're not sure if the number is correct), call MDH Central and notify someone immediately.

- Once you reach the case, continue working through the CRF:
  - Read Tennessen Warning (found within CRF)
  - Obtain all information on the CRF, including vaccination history/immune status, travel history and activity history (school, work, etc) through the twenty-one (21) days prior to rash onset
  - Though some clinical details may already be known about the case (if provider gave clinical details), make sure to thoroughly collect information from the 'clinical' section of the CRF
  - Obtain information on school, work, travel, and other activities during the infectious period
  - Ask permission of the case to use their name when communicating with the identified school, work and other activities. Since measles is reportable, public health officials are able to notify schools, activities, and workplaces of a case of measles without permission; however, permission is needed to identify the case by name when notifying the school/childcare, etc.
  - Identify household or other activity contacts and begin a Contact Line List to share with MDH (**Measles Toolkit**).
  - For each exposure setting, be sure to identify an **exposure setting representative**. This person should play a key role at the exposure site you are investigating (or that you will be delegating to LHD for contact investigation) and will be the primary representative you are communicating with for identification and communication with exposed contacts. In past measles outbreaks, these persons have served as exposure setting representatives:

    - Parent (household exposures)
    - Infection preventionist, clinic managers (hospital/clinic exposure)
    - School nurse (school exposure)
    - Shelter manager (homeless shelter exposure)

  - A good exposure setting representative will have access to personnel or client data and facilitate the rapid identification and dissemination of such data to MDH and LHDs when doing a measles contact investigation. These data may include (but are not limited to):

    - Vaccination records
    - Documentation of immunity status (IgG)
    - Documentation of disease history
    - Appointment dates and times
    - Telephone numbers, email & mailing addresses

- Other information pertinent to assessing immune status of contacts, such as military history, immigrant visa or green card information

- Scan CRF and attach it to the MEDSS record
- Because Incident Command will not have been set up at this stage (roles not yet defined), call the MDH representative that:
  - Delegated the case investigation to you **or**
  - You had called to report the case to initially **or**
  - Is otherwise responsible for handling this case

...to summarize details and discuss next steps (contact investigations, PEP, I&Q)

6. CONTACT INVESTIGATIONS

6.1 KEY OBJECTIVES

- To identify and notify all primary contacts of confirmed measles case(s)
- To collect information about exposure and assess immune status of contacts
- To create a line list of susceptible, primary contacts who need PEP

6.2 DEFINITION OF EXPOSURE

- The definition of 'exposure' to measles utilized in this document is as follows:
  - Having shared airspace at the same time with an infectious case of measles or
  - Having shared airspace (in a closed area or room) up to two hours after an infectious case of measles has occupied the area
- Exposure as it pertains to specific outbreaks may vary. Once transmission settings have been identified, the definition of 'exposure' for a specific outbreak will be delineated

6.3 CONTACT INVESTIGATIONS

- Contacts will be investigated based on the location of the exposure. For example, if the exposure happens at a clinic in County A, and the case lives in County B, either the District Epidemiologist or LHD responsible for County A will coordinate and carry out the contact investigations, working and communicating with MDH Central throughout the investigation
- The designated MDH IC staff will be responsible for delegating and assigning contact investigations to LHDs and District Epidemiologists following the Incident Command structure agreed upon at initial interagency conference call
- Steps for completing contact investigations are as follows:

1. Identification of contacts
   - MDH IC staff will provide contact investigators with available locating information gathered during the case investigation process.
   - Begin a Contact Line List, filling in whatever starting information you have about the identified contacts.
   - If no names are yet available, contact investigators will need to obtain the locating information (telephone number) to reach an exposure setting representative (explained in Case Investigations).
   - After reaching the exposure setting representative, it is the contact investigator's role to request lists of the people exposed during the specified exposure event

2. Triage & prioritization of contacts
   - Prior to making any assessment calls, it is important to retrieve as much information you can about the contacts by utilizing:

i. MIIC (for documentation of vaccine doses)
ii. Exposure setting representatives (e.g. parent of the case in a household exposure setting, infection preventionist in a clinic exposure setting, a school nurse in a school exposure setting, etc) can provide information (if available) regarding contact immunocompetency, pregnancy status, dates of birth, disease history, vaccination status.

- Initial prioritization of contacts is based on what information you already have or can easily retrieve about the contact (e.g., whether the individual's vaccination/disease history/ immunocompetency/pregnancy status is known or unknown)

- After compiling a Contact Line List of exposed individuals, utilize the presumptive evidence of immunity table to separate them into two categories, immune and susceptible. If an individual's immune status is 'unknown' then place that individual into the susceptible category.

- Make every attempt to collect the following for each contact:
  - ☒ Name
  - ☒ Date of Birth or Age
  - ☒ Address
  - ☒ Locating information (phone number, email address)
  - ☒ Symptoms
  - ☒ Vaccination status / history of disease
  - ☒ Exposure type (face to face, same room, same building)
  - ☒ Date of exposure
  - ☒ Duration of exposure
  - ☒ High risk category (<12 months, pregnant, immunocompromised, healthcare worker, household contact)

- Based on available information, prioritize the susceptible, high risk individuals. High risk individuals can be separated into two groups:
  - *iii.* HIGH RISK because of complications due to measles infection:
    - ☒ Babies <12 months
    - ☒ Susceptible pregnant women
    - ☒ Immunocompromised individuals
  - *iv.* HIGH RISK because they work in sensitive settings or are close contacts of the case:
    - ☒ Has had significant exposure to the case (e.g. household contact)
    - ☒ Healthcare personnel
    - ☒ Works in or attends a setting with known unvaccinated persons (e.g. school, childcare)

- After prioritization of contacts, your list(s) for PEP recommendations should become significantly shorter given that the *majority of contacts should be immune.*

3. Notification of contacts

- Begin making phone calls to each of the **susceptible contacts** you have prioritized, following the appropriate contact assessment script (see **Measles Toolkit**). The purpose of this script is to:
    i. Notify the individual of the exposure
    ii. Confirm or rule-out susceptibility in the individual
    iii. Prepare plans for administering PEP if susceptible and within PEP timeframe

- Attempt reaching known susceptible contacts immediately **by telephone**. If you cannot reach them within (2) days after initially receiving their locating information, please notify the MDH Operations Chief as soon as possible.

- The remaining **immune contacts** also need to be notified of their exposure. Though they have met the criteria for immunity, infection could still result based on the small percentage of individuals who do not respond to vaccine (1% in those who have received 2 doses of MMR, 5% in those who have only received 1 MMR). Depending on the size of the outbreak and your agency's resources, the notification process to the remaining 'immune' contacts may differ.

- Phone notification of exposure is preferred, but mailing a letter or sending an email (depending on what locating information is available for each contact) may be more practical. Follow the appropriate contact assessment script (see **Measles Toolkit**).

4. PEP of contacts

- Following recommendations for PEP found in **Post-exposure Prophylaxis**, the healthcare community, working with both LHDs and MDH will coordinate administration of PEP for exposed, susceptible contacts.

5. I&Q recommendations

- Following recommendations for I&Q found in **Isolation & Quarantine**, LHDs and MDH will coordinate recommendations:
    ☒ Isolation for exposed, susceptible SYMPTOMATIC contacts of the case
    ☒ Quarantine for exposed, susceptible ASYMPTOMATIC contacts of the case, who did not receive PEP (refusal, outside of recommended timeframe)
    ☒ Symptom watch for exposed, susceptible ASYMPTOMATIC contacts who received PEP within the recommended timeframe (3 days for MMR, 6 days for IG)

6.4 PRESUMPTIVE EVIDENCE OF IMMUNITY

- To presume an exposed individual immune at least one of the following should be true:

- Documentation of age-appropriate vaccination with a live measles virus-containing vaccine§:
  - preschool-aged children: 1 dose
  - school-aged children (grades K-12): 2 doses
  - adults not at high risk¶¶: 1 dose, or
- Laboratory evidence of immunity,[¶] or
- Laboratory confirmation of disease, or
- Born before 1957

§ The first dose of MMR vaccine should be administered at age ≥12 months; the second dose of measles- or mumps-containing vaccine should be administered no earlier than 28 days after the first dose.
¶¶ Adults at high risk for exposure and transmission include students in post-high school educational institutions, health-care personnel, and international travelers.
¶ Measles, rubella, or mumps immunoglobulin G (IgG) in serum; equivocal results should be considered negative.

- Presuming immunity in exposed adults at high risk for exposure and transmission:

Students at post-high school educational institutions	Health-care personnel[†]	International travelers
▪ Documentation of vaccination with 2 doses of live measles virus-containing vaccine,[§] or ▪ Laboratory evidence of immunity,[¶] or ▪ Laboratory confirmation of disease, or ▪ Born before 1957	▪ Documentation of vaccination with 2 doses of live measles virus-containing vaccine,§ or ▪ Laboratory evidence of immunity,¶ or ▪ Laboratory confirmation of disease	▪ Documentation of age-appropriate vaccination with a live measles virus-containing vaccine: –infants aged 6–11 months**: 1 dose –persons aged ≥12 months§: 2 doses, or ▪ Laboratory evidence of immunity,¶ or ▪ Laboratory confirmation of disease, or ▪ Born before 1957

§ The first dose of MMR vaccine should be administered at age ≥12 months; the second dose of measles- or mumps-containing vaccine should be administered no earlier than 28 days after the first dose.
¶¶ Adults at high risk for exposure and transmission include students in post-high school educational institutions, health-care personnel, and international travelers.
¶ Measles, rubella, or mumps immunoglobulin G (IgG) in serum; equivocal results should be considered negative.
† For unvaccinated personnel born before 1957 who lack laboratory evidence of measles, rubella, or mumps immunity or laboratory confirmation of disease, health-care facilities should consider vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval (for measles and mumps) and 1 dose of MMR vaccine (for rubella), respectively.
** Children who receive a dose of MMR vaccine at age <12 months should be revaccinated with 2 doses of MMR vaccine, the first of which should be administered when the child is aged 12 through 15 months and the second at least 28 days later. If the child remains in an area where disease risk is high, the first dose should be administered at age 12 months.

6.5 PROXIES FOR IMMUNITY

- During a large measles outbreak, or when there is a large number of exposures and contacts to follow-up on, public health staff and resources may be scarce. Utilizing the following proxies for presuming immunity may be warranted to expedite the rapid triage and prioritization of contacts:

  - Verbal declaration of MMR history (1 or 2 doses)
  - Verbal declaration of measles disease history
  - History of military service in the United States
  - Enrollment in a University program that required vaccination in the United States (verify attendance and immunization policy with the University if possible)
  - Workplace that required MMR or titer upon hire
  - Born outside of U.S. and obtained a Green Card to work in U.S.
  - Born on or after 1967 and attended MN Public Schools?
  - Born on or after 1970 and attended US Public Schools?

- NOTE: An estimated 600,000 to 900,000 persons received KMV in the United States from 1963 to 1967. KMV sensitizes the recipient to measles virus antigens without providing protection. KMV was withdrawn in 1967. The first live-attenuated vaccine was licensed for use in the United States in 1963 (Edmonston B strain), much better than KMV, but not as good as the live-attenuated vaccine licensed in 1968. The first 'effective' live attenuated vaccine came out in 1968 (Edmonston-Enders strain). **Therefore, between 1963 and 1967, individuals may have received 1 dose of KMV OR 1 dose of the (live-attenuated) Edmonston B strain.**

  - Consider individuals born from 1958-1969 to be part of the birth cohort who may have received the ineffective KMV vaccine OR the less effective Edmonston B strain.
  - For individuals in this cohort: if adequate proxies for immunity are met (for example, they tell you they believe they were vaccinated, OR their parent has confirmed they were vaccinated for measles, then the following action steps are recommended:

    - ☒ Advise 1 dose of MMR **OR**
    - ☒ Advise IgG titer if they refuse MMR

7. POST-EXPOSURE PROPHYLAXIS

7.1 KEY OBJECTIVES

- For the purposes of post-exposure prophylaxis, a *susceptible* individual to measles is defined as one who has:
  - Never had a single dose of MMR vaccine AND not had a doctor-diagnosed case of measles disease
    OR
  - Unknown MMR vaccination status AND is pregnant or has a significant immunocompromised state AND not had a doctor-diagnosed case of measles disease

7.2 GENERAL CONSIDERATIONS

- MMR vaccine, if administered within **72 hours (3 days)** of initial measles exposure, might provide some protection or modify the clinical course of measles
  - If exposure results in infection, no evidence indicates that administration of MMR vaccine during the presymptomatic or prodromal stage of illness increases the risk for vaccine-associated adverse events
  - If exposure does not cause infection, postexposure vaccination should induce protection against subsequent exposures

- IGIM (IG given intramuscularly) has been demonstrated to reduce the risk for measles or modify disease if administered **within 6 days** of exposure.
  - The recommended dose of IGIM is 0.5mL/kg
  - The maximum dose by volume is 15 mL. Persons who weigh >30 kg (66 lbs) will receive less than the recommended dose and will have lower titers than recommended.
  - IG is **not** indicated for persons who have received 1 dose of measles-containing vaccine at age ≥ 12 months, unless they are **severely immunocompromised**
  - Any nonimmune person exposed to measles who received IG should subsequently receive MMR vaccine, administered no earlier than 6 months after IGIM administration (or 8 months after IGIV administration) provided the person is then ≥ 12 months and the vaccine is not otherwise contraindicated.

7.3 PEP FOR VACCINE-ELIGIBLE INDIVIDUALS AGED ≥ 12 MONTHS

- For vaccine-eligible persons aged ≥12 months exposed to measles, administration of MMR vaccine is recommended and preferable to using IG, if administered within 72 hours of exposure
- IGIM can be administered to other persons ≥12 who do not have evidence of measles immunity, but priority should be given to persons exposed in settings with intense, prolonged exposures (e.g. household, daycare, and classroom).

- Adult household contacts or other high risk contacts greater than 30 kg (66 lbs) may still receive IGIM; however, persons who weigh >30 kg (66 lbs) will receive less than the recommended dose and will have lower titers than recommended.

7.4 PEP FOR INFANTS AGED < 12 MONTHS

- IGIM should be administered to all infants aged < 12 months who have been exposed to measles
- For infants aged 6 through 11 months, MMR vaccine can be administered in place of IG if administered within 72 hours (3 days) of exposure.

7.5 PEP FOR SUSCEPTIBLE PREGNANT WOMEN

- IGIV (IG given intravenously) should be administered to pregnant women without evidence of measles immunity who have been exposed to measles.
- IGIV (instead of IGIM) is recommended to administer doses high enough to achieve estimated protective levels of measles antibody titers (dose: 400 mg/kg body weight)

7.6 PEP FOR IMMUNOCOMPROMISED PATIENTS

- Severely immunocompromised patients who are exposed to measles should receive IGIV prophylaxis regardless of immunologic or vaccination status because they might not be protected by the vaccine.
- For persons already receiving IGIV therapy, administration of at least 400 mg/kg body weight within 3 weeks before measles exposure should be sufficient to prevent measles infection
- For patients receiving subcutaneous immune globulin (IGSC) therapy, administration of at least 200 mg/kg body weight for 2 consecutive weeks before measles exposure should be sufficient

8. ISOLATION & QUARANTINE (I&Q)

8.1 KEY OBJECTIVES

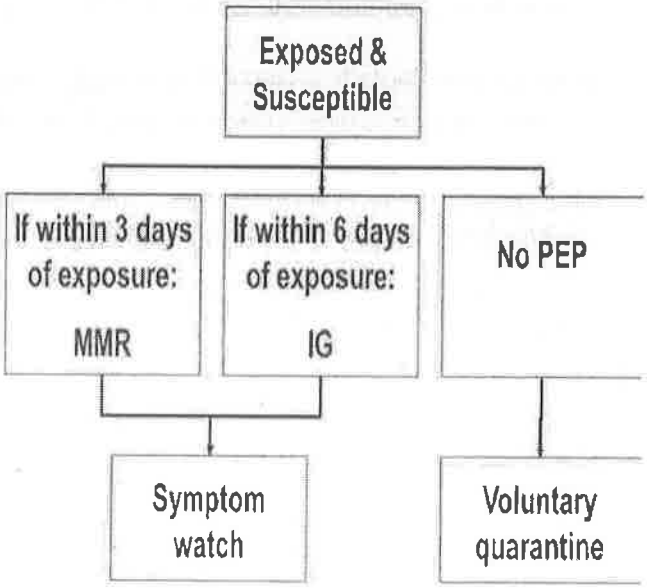
- To utilize **isolation** (the separation and restriction of movement and activities of ill persons who have a contagious disease), and **quarantine** (the separation and restriction of movement and activities of persons who are not ill but who have likely been exposed to a contagious disease), for the purpose of preventing transmission of measles

- To comply with Minnesota law as it pertains to I & Q:
  - Under Minnesota IQ statute, Commissioner of Health has authority to go to court to seek a legal order
  - Essential services must be provided, including food, shelter, 24/7 means to communicate with health authorities and access to emergency medical care, medication, and transportation to medical care
  - Most I&Q expected to be voluntary, and most voluntary I&Q is expected to be at a person's home
  - People will be treated the same in voluntary or court-ordered I&Q (essential services and monitoring)

8.2 ESSENTIALS OF I&Q

- Monitoring
  - Day Zero calls & monitoring calls
  - In past MN outbreaks requiring I&Q (H1N1, measles), MDH has worked together with LHDs to monitor for I&Q
  - Depending on the scope and severity of a future measles outbreak, LHDs may need to take on a larger role in I&Q monitoring

- Essential services
  - Assure essential service needs in IQ if unable to provide for themselves
  - Home check after 3 failed IQ calls
  - Identify LHD Essential Services Representative (24/7 availability)
  - Providing essential services is a LHD role



8.3 PROTOCOL FOR VOLUNTARY I&Q IN A HOUSEHOLD SETTING

- If a Local Health Department or District Epidemiologist, in consultation with MDH, recommends that a person stay at home because of measles disease or an exposure, the following protocol should apply.

- If the person says they are not going to comply with voluntary isolation or quarantine or if the person has concerns about their employer allowing them to stay home please contact 651-201-5414 immediately and ask to speak with a member of the Isolation & Quarantine Unit.
- Recommendation: The Local Health Department or District Epidemiologist should inform the person or their parent/guardian:
    - That MDH strongly recommends that they stay at home and length of time.
    - We are asking for their cooperation in staying at home because measles can be a very serious disease and we need their help in preventing spread.
    - During the time that they are home they should not have visitors in the home unless the visitors are known to be immune to measles.
    - The length of time for staying at home for those in quarantine relates to the date of the exposure and the measles incubation period. The length of time for staying home for isolation should be determined by rash onset.
    - The symptoms of measles and what do if symptoms develop (for those in quarantine).
    - When to seek medical attention.
    - That they can and should leave home to seek medical attention when needed. They should call the clinic or emergency department ahead of arrival to let them know they have or have been exposed to measles and are coming to seek care. The clinic or emergency department may give them special instructions.
    - That they need to inform their Local Health Department or District Epidemiologist when/if symptoms develop (for those in quarantine).
- Symptoms of Measles Disease and Seeking Medical Attention: their Local Health Department or District Epidemiologist or MDH should contact the person every 3-4 days to check-in on symptoms including of the person and other household members who are not immune to measles.
- Essential Services: The Local Health Department or District Epidemiologist should:
    - Ask if they have someone in the household (immune to measles) or family, friends who can buy groceries, get medicine etc. during the time they are staying at home. If they do not, the Local Health Department or District Epidemiologist will work with person to determine how to get these needs met.
    - Have a plan for transportation to medical care. They should not take public transportation.
- 24/7 Phone Number for Contacting Local Public Health
- Hennepin County Public Health office hours are 8am-5pm.
    - If there is a medical emergency, they should call their medical provider or 911.
    - If there is a psychological emergency, they should call the crisis hotline [county crisis hotline, if available]
    - If they have information or an essential service request, they can leave a message at [# in which LHD or District Epidemiologist can be reached]
    - If there is a need, other than those listed above, outside of regular office hours that cannot be left on a message then they should call MDH on call 651-201-5414 and ask for the I/Q cell phone.

9. EXPOSURE SETTING RECOMMENDATIONS

9.1 KEY OBJECTIVES

- To identify susceptible contacts within specific community settings
- To provide recommendations for exclusion, PEP and notification to community members and organizations affected by a measles outbreak

9.2 HOUSEHOLD SETTING*

ACTIONS	STEPS TO TAKE
1. Identification of contacts	▫ Identify household members ▫ Document activity history of household contacts during case's infectious period ▫ Determine if anyone else in the household is currently having symptoms
2. Triage & prioritization of contacts	▫ All household contacts of a confirmed case are considered **'high risk'** contacts in terms of needing PEP (if not immune) ▫ Assess immunity of each household contact by using the **presumptive evidence of immunity table** ▫ Determine susceptibility. Document 2 MMRs (or 1 MMR) based on age or laboratory proof of immunity for **all household members**. In certain instances, proxies for immunity may be accepted (see **Proxies for immunity**)
3. Notification of contacts	▫ Notification of all household members (immune or not immune) should be done **immediately** by telephone by the case investigator
4. PEP of contacts	▫ If contact is determined to be susceptible, recommend appropriate PEP (see **Post-exposure prophylaxis**): Vaccine if within 3 days of exposure and IG if within 6 days of exposure for those not immune ▫ Recommend a 2nd dose of MMR for those who are eligible regardless of timing
5. Isolation Quarantine & Symptom Watch recommendations	▫ For symptomatic **case(s)**: Exclusion from school/all outside activities for 4 days after rash onset. NO visitors who are not immune to measles. Case needs to be isolated **at home.** ▫ **Isolation** for those exposed and having symptoms (for 4 days after rash onset) ▫ **Quarantine** for those exposed & susceptible, with no symptoms, and no PEP

	✓ Must stay home for up to 21 days after the last exposure ✓ Monitoring (frequency can be determined) depending on whether the person is a case or exposed ✓ Provide essential services if needed ▫ **Symptom watch** for those exposed & susceptible and have received PEP ✓ Monitoring (frequency can be determined) for development of symptoms

*Contact investigations for household contacts occur as part of the initial case investigation. LHDs are typically not involved at this stage.

9.3 SCHOOLS

ACTIONS	STEPS TO TAKE
1. Identification of contacts	▫ Contact investigator will request the **exposure setting representative** to identify exposure dates at school, look up vaccination records, activities, attendance records and relate back to MDH or LHD ▫ MDH or LHD will provide a contact line list for school exposure setting representative (i.e. school nurse or administrator) to fill out and return ▫ Determine if anyone else at the school (students and staff) has had similar symptoms or is currently having symptoms
2. Triage & prioritization of contacts	▫ Assess immunity of each exposed contact by using the **presumptive evidence of immunity table** ▫ After compiling a Control Line List, LHD or District Public Health will prioritize **'high risk'** contacts for the initial assessment calls using the instructions in **Contact Investigations**
3. Notification of contacts	▫ Notification to school representative of a confirmed case(s) (at that school) will be done by LHDs ▫ Notification to families/students regarding the exposure will be done by the school
4. PEP of contacts	▫ If contact is determined to be susceptible, recommend appropriate PEP (see **Post-exposure prophylaxis**): Vaccine if within 3 days of exposure and IG if within 6 days of exposure for those not immune
5. Isolation Quarantine &	▫ For symptomatic **case(s)**: Exclusion from school/all outside activities for 4 days after rash onset. NO visitors who are not immune to measles.

Symptom Watch recommendations	Case needs to be isolated **at home.** ▫ For all other staff/students: Exclusion of exposed staff/students identified who do not have documentation of at least 1 MMR, history of disease, or documented proof of immunity (serology) ▫ **Isolation** for those exposed and having symptoms (for 4 days after rash onset) ▫ **Quarantine** for those exposed & susceptible, with no symptoms, and no PEP ✓ Must stay home for up to 21 days after the last exposure ✓ Monitoring (frequency can be determined) depending on whether the person is a case or exposed ✓ Provide essential services if needed ▫ **Symptom watch** for those exposed & susceptible and have received PEP ✓ Monitoring (frequency can be determined) for development of symptoms

9.4 CHILDCARE SETTINGS

ACTIONS	STEPS TO TAKE
1. Identification of contacts	▫ Contact investigator will request the **exposure setting representative** to identify exposure dates at the daycare center or home, attendance records and activities ▫ LHD will provide a contact line list for the daycare exposure setting representative to fill out and return ▫ Determine if anyone else has had similar symptoms or is currently having symptoms
2. Triage & prioritization of contacts	▫ Assess immunity of each exposed contact by using the presumptive evidence of immunity table ▫ After compiling a Control Line List, LHD or District Public Health will prioritize **'high risk'** contacts for the initial assessment calls using the instructions in Contact Investigations
3. Notification of contacts	▫Notification to daycare representative of a confirmed case(s) (at that daycare) will be done by LHDs ▫Notification to families/students regarding the exposure will be done by the daycare
4. PEP of contacts	

	▫ If contact is determined to be susceptible, recommend appropriate PEP (see Post-exposure prophylaxis): Vaccine if within 3 days of exposure and IG if within 6 days of exposure for those not immune
5. Isolation Quarantine & Symptom Watch recommendations	▫ For symptomatic **case(s)**: Exclusion from daycare/all outside activities for 4 days after rash onset. NO visitors who are not immune to measles. Case needs to be isolated at **home.** ▫ For all other staff/babies/children: **Exclusion** (from daycare) and **Quarantine** (at their home) of exposed staff/babies/children identified who do not have documentation of at least 1 MMR, history of disease, or documented proof of immunity (serology) ▫ **Isolation** for those exposed and having symptoms (for 4 days after rash onset) ▫ **Quarantine** for those exposed & susceptible, with no symptoms, and no PEP ✓ Must stay home for up to 21 days after the last exposure ✓ Monitoring (frequency can be determined) depending on whether the person is a case or exposed ✓ Provide essential services if needed ▫ **Symptom watch** for those exposed & susceptible and have received PEP ✓ Monitoring (frequency can be determined) for development of symptoms

9.5 CONGREGATE LIVING FACILITIES

ACTIONS	STEPS TO TAKE
1. Identification of contacts	▫ Contact investigator will request the **exposure setting representative** to produce a list of individuals exposed at congregate living facility during the case's infectious period. This includes anyone in the same room as the case (for any length of time), or anyone occupying an area in which the infectious case had occupied in the previous two hours. ▫ At a congregate living facility (especially if there are common eating and socializing areas), this will likely be everyone at the facility who was living there during the case's infectious period. ▫ LHD will provide Contact Line List to congregate living facility exposure setting representative ▫ Determine if anyone else has had similar symptoms or is currently having symptoms
2. Triage & prioritization of contacts	▫ Assess immunity of each exposed contact by using the presumptive evidence of immunity table. In certain instances, proxies for immunity may be accepted (see Proxies for immunity) ▫ After compiling a Control Line List, LHD or District Public Health will prioritize

	'high risk' contacts for the initial assessment calls using the instructions in Contact Investigations
3. Notification of contacts	▫Notification to congregate living facility staff of a confirmed case of measles at thei facility done by LHDs ▫Notification to residents of their exposure to measles done by congregate living facility staff
4. PEP of contacts	▫ If contact is determined to be susceptible, recommend appropriate PEP (see Post-exposure prophylaxis): Vaccine if within 3 days of exposure and IG if within 6 days of exposure for those not immune
5. Isolation Quarantine & Symptom Watch recommendations	▫ Exclusion at a congregate living facility is difficult, given that many times, there is no other place for residents to go as the congregate living facility is their home, and it is difficult to separate themselves off from the rest of the residents ▫ For symptomatic case(s): Exclusion from all outside activities for 4 days after rash onset. NO visitors who are not immune to measles. Case needs to be isolated in room, if they have their own room. ▫ Exclusion of all others identified who do not have documentation of at least 1 MMR, history of disease, or documented proof of immunity (serology ▫ Isolation for those exposed and having symptoms (for 4 days after rash onset) ▫ Quarantine for those exposed & susceptible, with no symptoms, and no PEP ✓ Must stay home for up to 21 days after the last exposure ✓ Monitoring (frequency can be determined) depending on whether the person is a case or exposed ✓ Provide essential services if needed ▫ Symptom watch for those exposed & susceptible and have received PEP ✓ Monitoring (frequency can be determined) for development of symptoms

9.6 HEALTHCARE SETTINGS

ACTIONS	STEPS TO TAKE
1. Identification of contacts	▫ Contact investigator will ask the healthcare facility exposure setting representative to generate list of possible exposed individuals (persons who shared airspace with the case at the same time and/or 2 hours afterwards) in: any room the case was in, specific face to face exposures, waiting room, bathroom, café, etc., along with their basic demographics and locating information. This list includes both healthcare facility staff AND patients/guests. ▫ Determine if anyone else has had similar symptoms or is currently having

	symptoms
2. Triage & prioritization of contacts	▫ Assess immunity of each exposed contact by using the **presumptive evidence of immunity table.** ▫ Rapidly prioritize contacts for notification & PEP (susceptible pregnant women, immunocompromised and <12 months a priority) and record it on Contact Line List. Note: Healthcare workers need TWO doses of MMR or documentation of immunity to be considered immune.
3. Notification of contacts	▫Notification to healthcare staff or IP of a confirmed case of measles at their facility done by MDH ▫Notification to patients/guests of their exposure to measles done by LHDs
4. PEP of contacts	▫ If contact is determined to be susceptible, recommend appropriate PEP (see **Post-exposure prophylaxis**): Vaccine if within 3 days of exposure and IG if within 6 days of exposure for those not immune
5. Isolation Quarantine & Symptom Watch recommendations	Note: All healthcare staff who are exposed to a confirmed case of measles, even if immune, should self-monitor for measles symptoms and immediately stop work, get tested and isolate themselves until lab results are available ▫ **Isolation** for those exposed and having symptoms (for 4 days after rash onset) ▫ **Quarantine** (to their home) and **Exclude** (from healthcare facility) for those exposed & susceptible, with no symptoms, and no PEP ✓ Must stay home for up to 21 days after the last exposure ✓ Monitoring (frequency can be determined) depending on whether the person is a case or exposed ✓ Provide essential services if needed ▫ **Symptom watch** for those exposed & susceptible and have received PEP ✓ Monitoring (frequency can be determined) for development of symptoms

9.7 AIRLINE EXPOSURE

ACTIONS	STEPS TO TAKE
1. Identification of contacts	▫ If case(s) is a **MN resident** and has flown: ✓ Obtain as much information from case(s) about the flight details (airline name(s), flight number(s), and seat assignment

	✓ Get seat assignments for any traveling companions ✓ Notify CDC Division of Global Migration and Quarantine (DGMQ) ✓ DGMQ is responsible for distributing flight manifest locating information to health departments in other states (typically, they will include everyone in the two rows directly in front and behind a confirmed case, along with any high risk (<12 months, pregnant, or immunocompromised) individuals on the entire plane). Health departments are then responsible for completing contact investigations for their state's residents who may have been exposed ▫ If **MN residents** have been **exposed** to a case(s) from **another state**: ✓ DGMQ will notify MDH if MN residents have been exposed to a confirmed case MDH is responsible for completing the contact investigations (MN residents exposed may be residents of counties all across the state)
2. Triage & prioritization of contacts	▫ Assess immunity of each exposed contact by using the **presumptive evidence of immunity table.** In certain instances, proxies for immunity may be accepted (see **Proxies for immunity**) ▫ After compiling a Control Line List, MDH will prioritize **'high risk'** contacts for the initial assessment calls using the instructions in **Contact Investigations**
3. Notification of contacts	▫Notification to exposed MN residents is done by MDH via the locating information available from the flight manifest. A phone call is best to notify them of their exposure, assess immune status, and give recommendations
4. PEP of contacts	▫ If contact (MN resident(s)) is determined to be susceptible, recommend appropriate PEP (see **Post-exposure prophylaxis**): Vaccine if within 3 days of exposure and IG if within 6 days of exposure for those not immune ▫ Airline should determine immune status of their staff members exposed. Standard PEP would apply for susceptible, exposed staff members
5. Isolation Quarantine & Symptom Watch recommendations	▫ For susceptible exposed airline staff: ▫ Provide PEP and monitor for symptoms for 21 days OR ▫ Exclude for 21 days ▪ Note: All airline staff who are exposed to a confirmed case of measles, even if immune, should self-monitor for measles symptoms and immediately stop work, get tested and isolate themselves until lab results are available

10. INCIDENT COMMAND

10.1 KEY OBJECTIVES

- Stop the spread of disease utilizing the Incident Command System (ICS) as a scalable interagency process
- Manage both internal and external agency:
  - ✓ Communication ✓ Procedures ✓ Protocol ✓ Resources

10.2 DEFINITION OF INCIDENT COMMAND SYSTEM (ICS)

- ICS is a "management system designed to enable efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure"[1]
- If your agency personnel have not already been trained to use ICS, the Federal Emergency Management Agency (FEMA) website provides training materials **here**.

10.3 WHEN TO "STAND UP" ICS DURING MEASLES RESPONSE

- One case of measles dictates an urgent public health response
- "Stand Up" or implementation of ICS at your municipal, local, or state health department is based upon your agency capacity *at the time of the incident*
- Capacity implies sufficient staffing to *maintain essential agency functions* while addressing all response needs of the unfolding incident

10.4 KEY ICS ROLES & STRUCTURES IN A MEASLES INVESTIGATION

- The **MDH Incident Commander** is has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations.
- Minimally, all participating agencies will use a Modified Incident Command System, with a designated Incident Commander and Deputy Incident Commander available to represent their agency through the MDH General Staff during situational updates
- The **Full Incident Command Structure**, utilizing command and general staff, may not always be appropriate, and all participating agencies in a measles investigation may not use full ICS simultaneously
- The **MDH Operations Chief** will communicate to Command/General staff input from all participating partner representatives, situational awareness from reporting Operations Branches (Measles Investigation, Isolation & Quarantine, Post Exposure Prophylaxis, Education, etc.)
- The **MDH Planning Chief** will communicate to Command/General staff input from all participating partner representatives, situational awareness from reporting Planning Branches

- The **MDH Logistics Chief** will communicate to Command/General staff input from all participating partner representatives, situational awareness from reporting Logistics Branches.
- The **MDH Finance Chief** will communicate to Command/General staff input from all participating partner representatives, situational awareness from reporting Finance Branches

10.5 INITIAL INTERAGENCY SITUATIONAL UPDATE CONFERENCE CALL

- This call is the first scheduled interagency measles investigation situational update
- The State Incident Commander (MDH) is responsible for setting up this call (ie., creating interagency listserve, notifying appropriate agencies involved, etc)
- Once the date and time of the call are established, the State Incident Commander will notify ***by email*** all responding agency Incident Commanders of: **Day – Date – Time – and call-in information.**
- Before ending the call, the MDH Incident Commander will define and confirm:
    - All responding agency's Incident Command structure, key communication representatives (ie., modified incident command with Incident and Deputy Commanders or full incident command with Incident Commander, PIO, General staff etc.) and locating info. (primary phone, alternate phone, email, fax)
    - Interagency operational period
    - Interagency operational period objectives
    - Date and time of next interagency situational update call

- After the initial Interagency Situational Update Conference Call the MDH Incident Commander will:
    - Notify ***by email*** all current responding agency Incident Commanders of next call, including an updated listserve attachment of current participating agencies, their ICS structure, & meeting minutes (ICS-202) summarizing update call

10.6 SITUATIONAL UPDATES

- Situational update conference calls will be ongoing throughout a measles investigation, and depending on the severity of the outbreak, may occur as often as needed during an operational period.
- Details of situational updates will be communicated to all parties involved by the MDH Incident Commander using ICS-202 form.
- Details for the first situational update will be provided during the initial interagency situational update conference call
- Details for subsequent situational updates will be confirmed at the end of each call
- Typically, interagency situational updates occur at the beginning and end of each interagency operational period
- Call participation by agency Incident Commanders and Deputy Incident Commanders is required
- Section Chiefs may also participate if agencies have expanded from a modified ICS structure

APPENDICES

APPENDIX 1. DEFINITIONS

Acute	Describing a disease or condition with a rapid onset and/or a short course
Anorexia	Loss of appetite especially when prolonged
Ataxia	Inability to coordinate muscle activity during voluntary movement
Buccal	Of or relating to the cheeks or the mouth cavity
Centrifugal	Lesions are more heavily concentrated on arms and legs
Centripetal	Lesions are more heavily concentrated on the trunk
Confluent	Merging or running together so as to form a mass, as sores in a rash
Conjunctivitis	Inflammation of the conjunctiva (the outermost layer of the eye and the inner surface of the eyelids)
Coryza	A word describing the symptoms of a "cold".It describes the inflammation of the mucous membranes lining the nasal cavity which usually gives rise to the symptoms of nasal congestion and loss of smell, among other symptoms
Crops	Lesions are different stages of development in one area of the body
Deep seated	Deeply embedded in the skin
Discrete	Individually separate and distinct
Enanthem	Enanthem or enanthema are medical terms for a rash (small spots) on the mucous membranes. These are characteristic of patients with smallpox, measles, and chicken pox.
Encephalitis	An inflammation of the brain that can lead to convulsions, and can leave the child deaf or mentally retarded.
Epidemiologically-linked	An individual who meets the clinical case definition who is exposed to a probable or confirmed case of measles during the case's infectious period. Epi-linked cases occur within 7-21 days of each other.
Erythematous	Redness of the skin caused by dilatation and congestion of the capillaries, often a sign of inflammation or infection.
Exanthem	An exanthem (from Greek "exanthema", a breaking out) is a widespread rash usually occurring in children.
Exposure setting representative	The individual responsible for obtaining and disemmenating information at a single measles

	exposure setting/site. This individual is the public health agency's key point of communication at an exposure site, and should have access and authority to pull vaccination records and make exclusion recommendations, etc. Some example of good exposure setting reps. Include: a clinic manager or infection preventionist at a clinic, a sprots coach, a supervisor at a business, a school principal or school nurse manager, or a parent.
Fomite	An inanimate object that may be contaminated with infectious organisms and may aid in their transmission
Generalized	Widespread rash on the body (rather than local)
High-Risk	This refers to individuals at high-risk for complications from measles, and includes: Infants and children <5 years, pregnant women and individuals with compromised immune systems, such as from leukemia and HIV infection
IG (Immune globulin)	A blood product used to provide antibodies for short-term prevention of infectious diseases, including measles.
Incubation period	The time elapsed between exposure to a pathogenic organism, a chemical or radiation, and when symptoms and signs are first apparent
Koplik spots	A prodromic viral enanthem of measles manifesting two days before the measles rash itself. They are characterized as clustered, white lesions on the buccal mucosa and are pathognomonic for measles
Lymphadenopathy	A term meaning "disease of the lymph nodes." It is, however, almost synonymously used with "swollen/enlarged lymph nodes".
Macules	Small, flat discolored spots/lesions on the surface of the skin, usually a different color from surrounding tissue
Maculopapular rash	A type of rash characterized by a flat, red area on the skin that is covered with small confluent raised bumps.
MMR	Measles, mumps & rubella-containing vaccine utilized for prevention and post-exposure prophylaxis of measles, mumps and rubella disease
Otitis	Inflammation of the ear
Papular	Adjective used to describe papules
Papules	Small, solid raised bumps/lesions
Pathognomonic	A term, often used in medicine, that means *characteristic for a particular disease*. A pathognomonic sign is a particular sign whose presence means that a particular disease is present

	beyond any doubt
PCR	Polymerase Chain Reaction is a biochemical technology in molecular biology to amplify a single or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence.
Petechial	Describes 'Petechiae' or small purplish spots on a body surface, such as the skin or a mucous membrane, caused by a minute hemorrhage
Pleural	Of or relating to the pleura or the walls of the lungs/thorax
Pleural effusions	A buildup of fluid between the layers of tissue that line the lungs and chest cavity
Pneumonia	Pneumonia is an inflammatory condition of the lung—affecting primarily the microscopic air sacs known as alveoli. It is usually caused by infection with viruses or bacteria and less commonly other microorganisms, certain drugs and other conditions such as autoimmune diseases. Typical symptoms include a cough, chest pain, fever, and difficulty breathing.
Polyserositis	Inflammation of several serous membranes (as the pleura, pericardium, and peritoneum) at the same time
Postexposure prophylaxis PEP	Any preventive medical treatment started immediately after exposure to a pathogen order to prevent infection by the pathogen and the development of disease.
Prodrome	A prodrome is an early symptom (or set of symptoms) that might indicate the start of a disease before specific symptoms occur. It is derived from the Greek word prodromos or precursor.
Purpuric	An adjective describing purpura, or the appearance of purple discolorations on the skin
Pustules	Raised lesions filled with pus (yellow, thick exudates)
Seroconversion	The development of detectable specific antibodies to microorganisms in the blood serum as a result of infection or immunization.
Severely Immunocompromised	Severely immunocompromised patients include patients with severe primary immunodeficiency; patients who have received a bone marrow transplant until at least 12 months after finishing all immunosuppressive treatment, or longer in patients who have developed graft-versus-host disease; patients on treatment for ALL within and until at least 6 months after completion of immunosuppressive chemotherapy; and patients with a diagnosis of AIDS

	or HIV-infected persons with severe immuno-suppression defined as CD4 percent <15% (all ages) or CD4 count <200 lymphocytes/mm^3 (aged >5 years) and those who have not received MMR vaccine since receiving effective ART. Some experts include HIV-infected persons who lack recent confirmation of immunologic status or measles immunity.
Subacute sclerosing panencephalitis (SSPE).....	A rare degenerative central nervous system disease believed to be due to persistent measles virus infection of the brain. Onset occurs an average of 7 years after measles (range 1 month–27 years), and occurs in 5-10 cases per million reported measles cases. The onset is insidious, with progressive deterioration of behavior and intellect, followed by ataxia, myoclonic seizures, and eventually death. SSPE has been extremely rare since the early 1980s.
Thrombocytopenia.....	Low number of platelets in the blood
Uniform.....	Lesions are in same stage of development in one area of the body
Urticarial.....	A transient condition of the skin, usually caused by an allergic reaction, characterized by pale or reddened irregular, elevated patches and severe itching; hives.
Vesicular.....	Describes vesicules, which are raised clear fluid-filled lesions
Vesicules.....	Raised, clear fluid-filled lesions
Wild-type.....	A phenotype, genotype, or gene that predominates in a natural population of organisms or strain of organisms in contrast to that of laboratory mutant forms (e.g., vaccine strain)

APPENDIX 2. EPIDEMIOLOGIC CASE CLASSIFICATION

- **Internationally imported case**: An internationally imported case is defined as a case in which measles results from exposure to measles virus outside the United States as evidenced by at least some of the exposure period (7–21 days before rash onset) occurring outside the United States and rash onset occurring within 21 days of entering the United States and there is no known exposure to measles in the U.S. during that time. All other cases are considered U.S.-acquired.

- **U.S.-acquired case:** A U.S.-acquired case is defined as a case in which the patient had not been outside the United States during the 21 days before rash onset or was known to have been exposed to measles within the United States. U.S.-acquired cases are subclassified into four mutually exclusive groups:

  - ✓ *Import-linked case:* Any case in a chain of transmission that is epidemiologically linked to an internationally imported case.

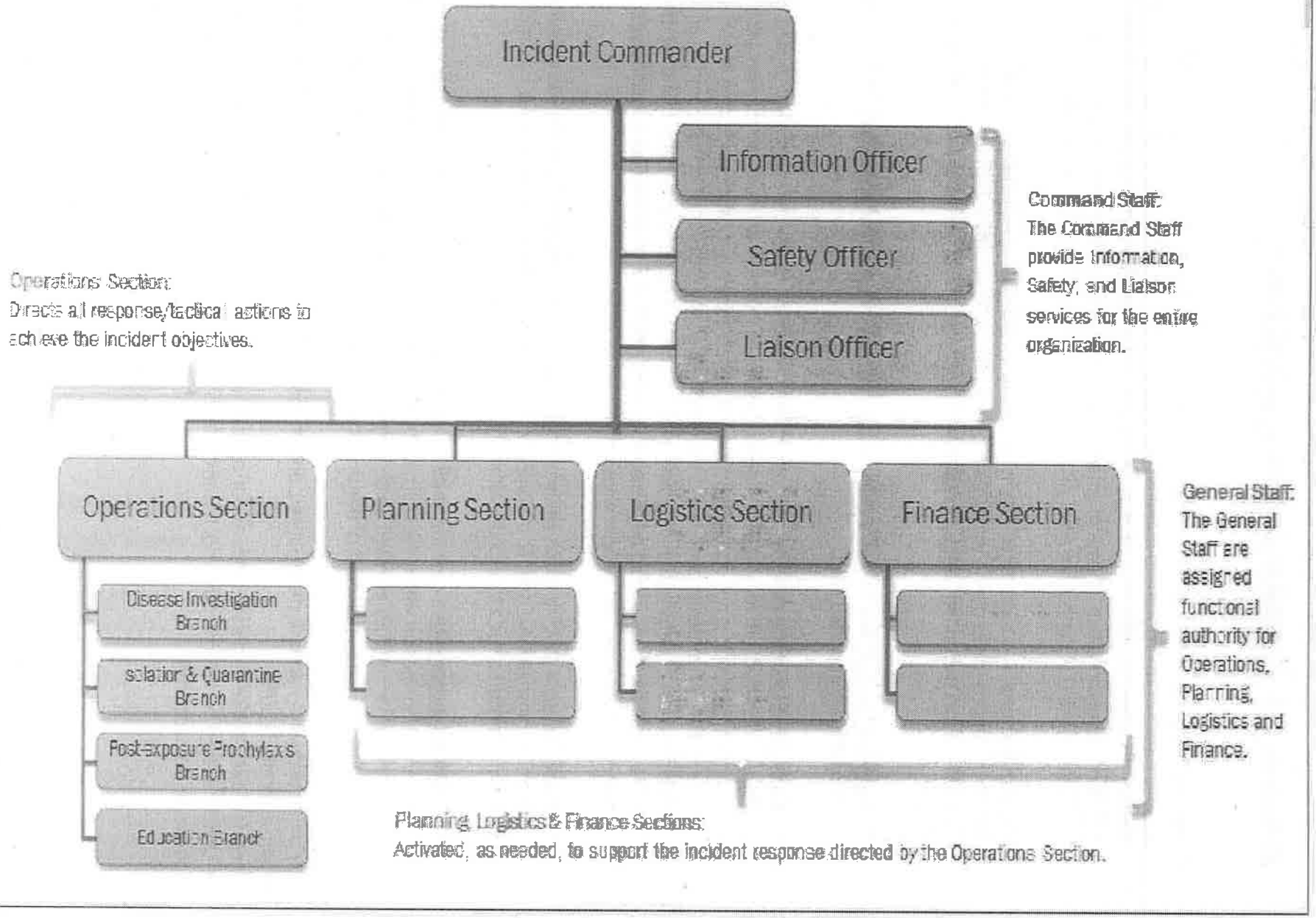
  - ✓ *Imported-virus case*: a case for which an epidemiologic link to an internationally imported case was not identified, but for which viral genetic evidence indicates an imported measles genotype, i.e., a genotype that is not occurring within the United States in a pattern indicative of endemic transmission. An endemic genotype is the genotype of any measles virus that occurs in an endemic chain of transmission (i.e., lasting ≥12 months). Any genotype that is found repeatedly in U.S.-acquired cases should be thoroughly investigated as a potential endemic genotype, especially if the cases are closely related in time or location.

  - ✓ *Endemic case*: a case for which epidemiological or virological evidence indicates an endemic chain of transmission. Endemic transmission is defined as a chain of measles virus transmission that is continuous for ≥12 months within the United States.

  - ✓ *Unknown source case*: a case for which an epidemiological or virological link to importation or to endemic transmission within the U.S. cannot be established after a thorough investigation. These cases must be carefully assessed epidemiologically to assure that they do not represent a sustained U.S.-acquired chain of transmission or an endemic chain of transmission within the U.S.

Note: Internationally imported, import-linked, and imported-virus cases are considered collectively to be import-associated cases.
States may also choose to classify cases as out-of-state-imported when imported from another state in the United States. For national reporting, however, cases will be classified as either internationally imported or U.S.-acquired.

Full Incident Command Structure



MEASLES TOOLKIT

T1. FACTSHEETS

T1.1 Measles (Rubeola) (English)
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/measles/measlesfacts.pdf

T1.2 Jadeecada (Rubeola) (Somali)
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/measles/measlesfactsom.pdf

T1.3 Sarampion (Spanish)
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/measles/measlesfactspa.pdf

T1.4 Measles Clinical Information (Healthcare Professionals)
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/measles/hcp/clinical.pdf

T2. LABORATORY TESTING

T2.1 Lab Testing for Measles at the MDH Public Health Laboratory
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/measles/hcp/labtesting.pdf

T2.2 Clinical Testing and Submission Form (print and fill out manually)
MDH WEBSITE: http://www.health.state.mn.us/divs/phl/clin/print_mdh.pdf

T2.3 Clinical Testing and Submission Form (fill out and save on your computer)
MDH WEBSITE: http://www.health.state.mn.us/divs/phl/clin/fillable_mdh.pdf

T2.4 Clinical Testing and Submission Form Instructions
MDH WEBSITE: http://www.health.state.mn.us/divs/phl/clin/mdhinstructions.pdf

T3. CASE & CONTACT INVESTIGATIONS

T3.1 Case Report Form (CRF)
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T3.2 Contact Line List (electronic, Excel document)
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T3.3 Measles Vaccination and Disease History Assumptions by Age
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/measles/hcp/assump.pdf

T3.4 Healthcare personnel measles immune status and exposures in healthcare settings
MDH WEBSITE http://www.health.state.mn.us/divs/idepc/diseases/measles/hcp/control.pdf

T4. INCIDENT COMMAND MATERIALS

T4.1 Measles Conference Call Agenda Template
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T4.2 Incident Command Forms on Workspace
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T5. INFECTION CONTROL & EXPOSURE PRECAUTIONS

T5.1 Minimize Measles Transmission in Healthcare Settings
MDH WEBSITE http://www.health.state.mn.us/dlvs/idepc/diseases/measles/hcp/minimize.html

T6. POST-EXPOSURE PROPHYLAXIS

T7.1 Summary Guide to Measles PEP
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T7. NOTIFICATION LETTERS & SCRIPTS

T8.1 Contact Assessment Script
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T8.2 Notification Letter: Minimal exposure
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

GUIDELINES FOR THE PREVENTION AND CONTROL OF MUMPS IN MINNESOTA

MINNESOTA DEPARTMENT OF HEALTH VERSION 1.2
JUNE 2014

This document has been prepared through a collaborative effort of the Local Epidemiology Network of Minnesota and the Minnesota Department of Health Field Services and Vaccine Preventable Disease Section

HOW TO USE THIS DOCUMENT: This document was prepared as a protocol to coordinate mumps response efforts in Minnesota. The main objective of this protocol is to serve as a guide that provides easily accessible, useful information pertaining to each organization's role in the mumps response effort.

Sections 1-7 describe the fundamental details and rationale behind mumps investigations and are relevant to all parties involved in response. Throughout the document, agencies are referred to based on the breakdown below:

MINNESOTA DEPARTMENT OF HEALTH (MDH CENTRAL)

- ✓ MDH Public Health Laboratory
- ✓ IDEPC Epidemiologists
- ✓ State & Assistant State Epidemiologists
- ✓ Mumps Epidemiologist
- ✓ VPD Section & Unit Managers
- ✓ IDEPC Division Manager
- ✓ IDEPC Medical Director
- ✓ Immunization Consultants
- ✓ Healthcare Facility Exposure Consultants

METROPOLITAN DISTRICT (LHDS AND METROPOLITAN DISTRICT EPIDEMIOLOGIST)

- ✓ Hennepin
- ✓ Anoka
- ✓ Dakota
- ✓ Carver
- ✓ Ramsey
- ✓ Washington
- ✓ Scott

GREATER MINNESOTA (LHDS AND GREATER MINNESOTA DISTRICT EPIDEMIOLOGISTS)

- ✓ Northwest
- ✓ Northeast
- ✓ Central
- ✓ West Central
- ✓ Southwest
- ✓ South Central
- ✓ Southeast

HEALTHCARE COMMUNITY

- ✓ Licensed health care providers
- ✓ Health care facilities
- ✓ Medical laboratories
- ✓ Veterinarians & veterinary medical laboratories

A Mumps Toolkit, including factsheets, template letters and other guidance is found after the main body of the document. All materials can be found on the Minnesota Department of Health's Workspace, located here:

https://oep.health.state.mn.us/workspace/web

Please refer to the workspace for the most current version of this document. Be advised, however that the guidelines and toolkit are living documents that will be updated over time and expanded upon as necessary. If you have questions or concerns about the document, its links or its attachments, please contact Emily Banerjee (telephone: 651-201-5488) or Cynthia Kenyon (651-201-5569) at the Minnesota Department of Health.

TABLE OF CONTENTS

1. MUMPS DISEASE & EPIDEMIOLOGY

1.1 INFECTIOUS AGENT

- Mumps virus is classified as a member of the genus Rubulavirus and the family Paramyxoviridae, and is a single-stranded, enveloped RNA virus

1.2 OCCURRENCE & TEMPORAL PATTERN

- Mumps occurs throughout the world.
- The temporal incidence peaks which occurred in the pre- and early-vaccine era (with incidence peaks occurring in late winter and early spring) are now less evident
- The disease is reported throughout the year, with cases and outbreaks occurring sporadically

1.3 MODES OF TRANSMISSION

- Droplet transmission occurs when droplets containing mumps virus are generated from an infected person
  - ✓This happens primarily when droplets released during coughing, sneezing, talking, and during certain procedures (such as suctionining and bronchoscopy) are propelled a short distance (3 feet) and deposited on another person's conjunctivae, nasal mucosa, or mouth.
  - ✓Because these relatively large droplets do not remain suspended in the air, special air handling and ventiliation are not required
- Droplet transmission should not be confused with airborne transmission via droplet nuclei, which are much smaller and remain in circulation for a longer duration
- Droplet precautions in health care settings require a private room or cohorting individuals with the same infection and have staff use a standard surgical mask if within 3 feet of the patient

1.4 COMMUNICABILITY & ENVIRONMENT

- Contagiousness is similar to that of influenza and rubella, but is less than that for measles and varicella.
- It is rapidly inactivated by formalin, ether, chloroform, heat and ultraviolet light

1.5 RESERVOIRS

- Humans are the natural hosts of the virus. Although persons with asymptomatic or nonclassical infection can transmit the virus, no carrier state is known to exist.
- No animal reservoirs have been identified.

1.6 INCUBATION PERIOD

- The incubation period of mumps is 14 to 18 days (range 14-25 days)

1.7 INFECTIOUS PERIOD

- From 3 days prior to onset of symptoms to 4 days after; however, virus has been isolated as long as 7 days prior to 9 days after symptom onset.

1.8 DEFINITION OF EXPOSURE

- No commonly accepted, evidence-based definition of 'exposure'
- The definition of 'exposure' to mumps utilized in this document is as follows:
  - ✓ Living with a person diagnosed with mumps.
  - ✓ Having had close contact with a person diagnosed with mumps.
    - ➢ Close contact means being within 3 feet (1 meter) or touching distance. Close contact includes kissing or hugging, sharing eating or drinking utensils, and close conversations. Health care providers may have been exposed when performing a physical exam. Exposure also includes contact with respiratory secretions or saliva of an infected person.
- Exposure as it pertains to specific outbreaks may vary. Once transmission settings have been identified, the definition of 'exposure' for a specific outbreak will be delineated

1.9 EXCLUSION/ISOLATION PERIOD

- Until 5 days after swelling begins, or through the first 5 days of symptoms if no swelling occurs.

1.10 DESCRIPTION OF ILLNESS

- Clinical case description: An acute onset of unilateral or bilateral tender swelling of the parotid or salivary gland lasting ≥ 2 days without other apparent cause.
  - ✓ The prodrome is nonspecific, including myalgia, anorexia, malaise, headache, and low-grade fever.
  - ✓ Parotitis is the most common manifestation and occurs in 30-40% of infected persons. Parotitis may be unilateral or bilateral and any combination of single or multiple salivary glands may be affected. Parotitis tends to occur within the first 2 days of illness and may first be noted as earache and tenderness on palpation of the angle of the jaw. Symptoms tend to decrease after 1 week and usually resolve after 10 days.
  - ✓ Up to 20% of mumps infections are asymptomatic. An additional 40-50% may have only nonspecific or primarily respiratory symptoms.

1.11 COMPLICATIONS

Symptom	Frequency	Description
Parotitis (Syn. Parotiditis)	30-40% of cases	Inflammation of the parotid gland(s) usually occurs within the first few days of infection
Orchitis (Syn. Orchiditis)	20-50% of post-pubertal male cases	Inflammation of the testes; orchitis parotidea; sterility is rare
Asymptomatic Aseptic Meningitis	50-60% of all cases	Asymptomatic, but inflammatory cells are found in the cerebrospinal fluid
Symptomatic Meningitis	Up to 15% of all cases	Symptomatic, usually headache and stiff neck; adults are at higher risk than children; boys are at a higher risk than girls (3:1) Clinical meningitis occurs in 1 to 10% of persons with mumps parotitis; only 40 to 50% of the patients with mumps meningitis, confirmed by serology or viral isolation, have parotitis
Oophoritis (Syn. Ovaritis)	5% of post-pubertal female cases	Inflammation of an ovary

Deafness	1 per 20,000 reported cases	Loss of the ability to hear; hearing loss is unilateral in ~80% of cases; onset is usually sudden and results in permanent hearing impairment; this is the leading cause of sensorineural deafness in children.
Mastitis (Syn. Mammitis, Mastadenitis)	Up to 31% of women older than 15 years	Inflammation of the breast
Cerebral Spinal Fluid Pleocytosis	>50% of cases, but <10% have symptoms of CNS infection	Presence of more cells than normal, often denoting leukocytosis and especially lymphocytosis or round cell infiltration; originally applied to the lymphocytosis of the cerebrospinal fluid present in syphilis of the central nervous system
Spontaneous Abortion	Unknown	Can occur during the first trimester of pregnancy; no evidence that mumps infection during pregnancy causes congenital malformations
Death	1-3 per 10,000 cases; In U.S., an average of 1 death per year reported in 1980-1999	>50% of deaths occur in adults older than 19 years of age
Other Salivary Glands	10% of cases	Involvement of the other salivary glands may occur in conjunction with parotitis in up to 10% of the cases, but is rare as the sole manifestation of mumps infection.

1.12 DIAGNOSIS

- Mumps is typically diagnosed by assessing clinical compatibility of case patient along with:
  - ✓ Positive laboratory test results

    OR
  - ✓ Compatible epidemiologic history linking suspect case to a probable or confirmed case
- See section 2, **Case Definition** for more details about clinical presentation and case classifications

1.13 DIFFERENTIAL DIAGNOSES (PAROTITIS)

- Infection with:
  - ✓ Ebstein-Barr virus
  - ✓ Cytomegalovirus
  - ✓ Parainfluenza virus types 1 and 3
  - ✓ Influenza A virus
  - ✓ Coxsackieviruses
  - ✓ Lymphocytic choriomeningitis virus
  - ✓ Enteroviruses
  - ✓ Human immunodeficiency virus (HIV)
  - ✓ *Staphylococcus aureus*
  - ✓ Nontuberculous mycobacterium
- Acute bacterial suppurative parotitis (Staphylococcus aureus and Streptococcus spp.)
- Recurrent parotitis
- Drug reactions
- Tumors
- Metabolic disorders
- Immunologic diseases
- Allergic reactions

1.14 TREATMENT

- Treatment is supportive

1.15 PREVENTION

- Mumps is best prevented by administering MMR vaccine.
- Two doses are recommended, with the first given at 12-15 months and the second at 4-6 years of age. If an individual has not completed a full series after the age of 6, the individual should be caught up as soon as possible. (The first two doses should be separated by a minimum interval of 4 weeks).
- The effectiveness of 1 dose of mumps vaccine has been approximately 80% (range, 62%-91%), and on the basis of fewer studies globally, 2 dose vaccine effectiveness has been somewhat higher (range, 79%-95%)
- Some studies and investigations conducted during the mumps outbreaks in the late 1980s and in 2006 indicate that vaccine-induced immunity might wane, possibly explaining the recent occurrence of mumps in the 15- through 24-year age group
- Please see the VIS statement for a comprehensive overview of the current MMR vaccine
- **In Minnesota:**
  - ✓ The first dose was recommended in 1977; however, anyone over 7 years of age was exempt from having to get the vaccine. In 1988 the exemption was removed and starting in 1988 the first dose was required for school entry.
  - ✓ The second dose was required for school entry for 7th graders in 1992 and then was switched to be required for Kindergartners in 2004.
- A third dose of MMR may be recommended in certain situations, and will be discussed in the event of an outbreak
- Good Hygiene: Encourage handwashing and covering mouth and nose when coughing or sneezing

1.14 POST-EXPOSURE PROPHYLAXIS

- There is no effective post-exposure recommendation to prevent secondary transmission.
- Mumps IG is not effective and is no longer manufactured or licensed in the United States.
- Post-exposure vaccine is also not effective as a post-exposure prophylaxis.

2. CASE DEFINITION

2.1 MUMPS CLINICAL CASE DEFINITION

Mumps is an acute illness characterized by:

- An acute onset of unilateral or bilateral tender swelling of the parotid or other salivary gland lasting ≥ 2 days without other apparent cause

2.2 CASE CLASSIFICATION

Confirmed*

A positive mumps laboratory confirmation for mumps virus with reverse transcription polymerase chain reactions (RT-PCR) or culture in a patient with an acute illness characterized by any of the following:

- Acute parotitis or other salivary gland swelling, lasting at least 2 days
- Aseptic meningitis
- Encephalitis
- Hearing loss
- Orchitis
- Oophoritis
- Mastitis
- Pancreatitis

Epi-Linked

In the absence of a more likely diagnosis, an illness that meets the clinical case definition with:

- No mumps laboratory testing **and**
- A confirmed exposure to a confirmed mumps case

Probable*

Acute parotitis or other salivary gland swelling lasting at least 2 days, or orchitis or oophoritis unexplained by another more likely diagnosis, in:

- A person with a positive test for serum anti-mumps immunoglobulin M (IgM) antibody, **OR**
- A person with epidemiologic linkage to another probable or confirmed case or linkage to a group/community defined by public health during an outbreak of mumps.

Suspect*

- Parotitis, acute salivary gland swelling, orchitis, or oophoritis unexplained by another more likely diagnosis, **OR**
- A positive lab result with no mumps clinical symptoms (with or without epidemiological-linkage to a confirmed or probable case).

Ruled-out

- A case that is investigated and does not meet the definition for a confirmed, epi-linked, probable, or suspect case.

Lost to follow-up

- A suspect case for whom follow-up could not be completed, because:
  - ✓ After 8 attempts to make contact, the case is deemed unreachable. Attempts should occur twice in each of the following time windows: week morning, week afternoon, week evening, and weekend, **OR**
  - ✓ No valid contact information could be obtained for the case

*CSTE Position Statement 11-ID-18 (2012, January)

3. LABORATORY TESTING & CONSIDERATIONS

3.1 GENERAL CONSIDERATIONS

- Patients with clinically compatible signs and symptoms for mumps should be tested as soon as possible after symptoms begin in order to confirm a diagnosis of mumps
- To expedite laboratory testing and report a suspect case of mumps, contact MDH and speak with an epidemiologist in the vaccine preventable disease unit (651-201-5414) **before** submitting specimens.

3.2 TESTING METHODS

- A suspect case of mumps should be tested utilizing two of the following methods (in order of preference):
  - ✓ **PCR** for mumps
  - ✓ Viral culture for mumps
  - ✓ **Serology** (IgM mumps specific assay)
- Because false positive IgM results occur, collecting specimens for viral isolation (PCR and culture) is recommended.

*NOTE: Because of the inherent problems associated with the **acute/convalescent** fourfould IgG rise (long waiting period to obtain diagnostic confirmation, specimen collection timing issues, inability to detect significant increases in IgG in highly vaccinated populations), this **method is rarely used**.*

3.3 PCR (PREFERRED METHOD) SPECIMEN COLLECTION (SEND TO MDH-PHL)

What test(s): ✓ PCR and culture
Where to send specimens: ✓ Minnesota Department of Health's Public Health Laboratory
What specimens to collect*: ✓ Buccal swab (preferred), throat, urine, cerebral spinal fluid

- Viral RNA is more likely to be detected when the specimens are collected as soon as possible after parotitis onset. Ideally, specimens for mumps PCR should be obtained within **3** days and not more than **9** days after parotitis onset.
- A clinical specimen for PCR should be taken as soon as mumps is suspected.
- Viral RNA are more likely to be detected when the specimen is collected as soon as possible after parotitis (or other symptom) onset. Please send (1) of the following specimens to the MDH-PHL, in order of preference:
  - ✓ Buccal swab
  - ✓ Throat swab
  - ✓ Urine specimen

Collection of PCR specimen(s):

Buccal (ideal) or **throat** swab: Massage the buccal cavity (the space near the upper rear molars between the cheek and the teeth) for 30 seconds and swab the area; obtain a generous amount of saliva. Place swab in a sterile tube containing 2-3 ml of viral transport medium (VTM) or cell culture medium (e.g., MEM or Hanks Balanced Salt Solution) or other sterile isotonic solution (e.g., phosphate buffered saline).

Note: Synthetic swabs are preferred.

Urine specimen: Collect 10-40 ml of urine in a sterile 50 ml centrifuge tube or a urine specimen container. First-morning voided specimens are ideal, but any urine collection is adequate. Have patient void directly into container, collecting from the first part of the urine stream if possible.

- Label tubes/containers with patient name, date of birth, and date collected
- Include an MDH Virology Specimen Submission Form for each specimen. Instruct facilities to fill out the form completely to delay testing delays
- Send to MDH Public Health Laboratory via your facility's usual courier. Specimens should be delivered to the MDH laboratory as soon as possible and no later than 4 days after collection.
- Specimens should be kept and transported at refrigeration temperature: 35.6°- 46.4°F (2-8° C).
- Before shipping, always consult with an MDH epidemiologist at 651-201-5414 or toll-free at 877-676-5414. The testing of your specimen(s) will be delayed if you do not consult with MDH prior to sending.

- **Send PCR specimens to:**
  - ✓ MDH Public Health Laboratory
    Attn: Biological Accessioning
    601 Robert St. N.
    St. Paul, MN 55155-2531

3.4 SEROLOGIC SPECIMEN COLLECTION (SEND TO NORMAL REFERENCE LAB)

What test(s):	✓ Acute IgM & IgG
Where to send specimens:	✓ Healthcare facility's normal reference laboratory
What specimens to collect:	✓ Serum

IgM (Immunoglobulin M)

*Positive result: Typically implies recent/current infection or recent vaccination***

- Draw blood for IgM antibody testing on day 4 of swelling.
- Occasionally, false-negative mumps IgM results occur when blood specimens are collected within 4 days of swelling onset.
- IgM antibodies are typically detectable on day 4 of symptoms or after and peak one week after onset.

IgG (Immunoglobulin G)

*Positive result: Typically implies immunity due to either past infection or vaccination***

- For convenience, the blood drawn for mumps IgM antibody testing may be used for the acute IgG.
- Drawing acute and convalescent serum specimens for mumps specific IgG antibody is rarely done.

Collection of serum specimen:

For both IgM and IgG: Collect 7-10 mls of blood in a red top tube or serum separator tube (SST).

**Mumps serology is complicated; there are a multitude of interpretations for IgG/IgM result combinations. Serology may give falsely positive or negative results, and is highly variable depending on specimen collection quality and timing. Contact an MDH epidemiologist to discuss serology testing and interpretation.

- Send serum specimens to:
  - ✓ Normal reference laboratory.
  - ✓ If submission to reference lab is not possible, contact the MDH mumps surveillance staff at 651-201-5414 or 1-877-676-5414 to discuss alternative options

4. REPORTING MUMPS

4.1 KEY OBJECTIVES

- To identify mumps cases and prevent disease transmission
- To comply with Minnesota's Communicable Disease Reporting Rule

4.2 COMMUNICABLE DISEASE REPORTING RULE

- Mumps is a reportable disease in Minnesota. Suspect and confirmed cases and/or positive lab reports indicating mumps infection must be reported to the Minnesota Department of Health **within one working day** per the **Communicable Disease Reporting Rule.**

- Persons required to report mumps to the Minnesota Department of Health:

  - ✓ Physicians & healthcare facilities
  - ✓ Medical laboratories
  - ✓ Veterinarians and veterinary medical laboratories
  - ✓ All licensed health care providers who provide care to any patient who has, is suspected of having, or has died from mumps
  - ✓ Any person in charge of any institution, school, child care facility or camp
  - ✓ Local public health departments

4.3 HIPAA AND THE COMMUNICABLE DISEASE REPORTING RULE

- **Issue:** The following question has been raised by some providers, their medical records departments, and their staff: **Does HIPAA permit disclosure** of specific patient medical information related to a communicable disease to MDH or other local public health authorities without patient authorization?

- **Finding:** MDH has concluded that HIPAA permits a provider and/or the provider's medical records department or staff to release a patient's medical information pertaining to a communicable disease in accordance with the Minnesota Communicable Disease Reporting Rule and M.S. §144.05, subd. 1(a) without the patient's authorization. The medical information being released must be related to a communicable disease report. This may include, but is not limited to:

  - ✓ Personally identifiable information on the patient and their contacts
  - ✓ The tests conducted, and the results of those tests
  - ✓ Treatments related to the disease
  - ✓ Other pertinent information

4.4 HOW TO REPORT MUMPS IN MINNESOTA

- Notify the Minnesota Department of Health within one working day upon suspicion of mumps
- Call our infectious disease reporting line at **651-201-5414** or **1-877-676-5414** (available 24 hours a day, 7days a week) and let the receptionist know you need to talk to someone about reporting mumps

5. CASE INVESTIGATIONS

5.1 KEY OBJECTIVES

- To interview a suspect, probable or confirmed case of mumps utilizing the Case Report Form (CRF)
- To identify the source and assess the potential for spread
- To facilitate specimen collection and submission for laboratory testing, if applicable

5.2 SUSPECT CASE IS REPORTED

✓The case investigation process begins at the time the suspect case is reported
✓A suspect case is typically identified via one of the following situations:

✓A positive lab result is faxed or mailed to MDH from a clinic or reported electronically through MEDSS
✓A healthcare provider fills out a mumps report online and faxes or mails it to MDH
✓A healthcare provider clinically diagnoses a case at a clinic or hospital and calls MDH to report
✓An individual calls to inform a clinic, MDH, District Public Health or LHDs of their own symptoms and/or a known exposure to mumps

- If the case is initially reported to a local public health department, the LHD will report the case to MDH **within one working day** via MDH's infectious disease line
- MDH will enter suspect, probable or confirmed case details into MEDSS
- Upon report of a suspect case of mumps, MDH will refer the suspect case to the designated epidemiologist or PHN for follow-up (healthcare provider and case interviews)

5.3 INTERVIEW SUSPECT CASE'S HEALTHCARE PROVIDER

Case Investigators, choose the option (Option 1 or 2) below that is relevant to the case you are working on:

OPTION 1: Start here if mumps PCR specimens:

□ have not yet been collected (**AND** patient is present to give specimens or come back into the office)

Then go through checklist:

✓Confirm that the provider has diagnosed mumps (or is highly suspicious of mumps)
✓If it has been less than 9 days since the case's parotitis onset, inform the provider that the Minnesota Department of Health would like to do PCR testing, as that is the only way to confirm a case of mumps (if more than 9 days have passed since parotitis onset, go to OPTION 2).
✓Tell them to collect the appropriate specimen for PCR (depending on time elapsed after swelling onset), see section 3, Laboratory Testing & Considerations.
✓Offer to fax or email them a copy of the mumps lab factsheet along with a copy of the submission form:

- Lab factsheet for mumps: http://www.health.state.mn.us/divs/idepc/diseases/mumps/hcp/labtesting.pdf
- Lab submission form (must be included with specimens): http://www.health.state.mn.us/divs/phl/clin/print_mdh.pdf
- Otherwise, refer them to the MDH mumps lab testing website (where they can find both forms): http://www.health.state.mn.us/divs/idepc/diseases/mumps/hcp/labtesting.html

✓Obtain as much information as possible from the healthcare facility/provider who made the mumps diagnosis (this is important because you might not ever be able to reach the suspect case).
✓Request any and all chart notes and lab work pertinent to the patient's mumps diagnosis (this may include records from more than 1 clinic visit)
✓Request any labs indicating differential diagnoses (refer to section1.13)
✓Request demographic and contact information for the suspect case
✓Interview healthcare provider (or nurse or assistant if healthcare provider is not available) utilizing the mumps CRF. Sections to go over with the provider are as follows:

- Mumps Specific Information (get as much clinical information from provider as possible, take notes on separate sheet and fill into the CRF later if necessary)
- Hospitalization Information
- Laboratory
- Vaccine History (MMR)
- Epidemiologic Information
  - Ask if provider knows anything about the suspect case's exposure to mumps
  - It is likely that the provider will not know much about the case's exposure

✓ *Suggestion: If talking to a medical practitioner (who is busy and will not have time to find all of the chart notes, lab records, vax history, etc) clarify specimen details FIRST and move immediately to the interview portion (that's relevant to the CRF). After you're finished speaking with the provider, ask to speak with a nurse or secretary who can provide details about faxing you over all of the records you are requesting.*

✓ *Note: Inform the provider that MDH will call the provider back immediately once PCR results are available. Test results are typically available the business day after they are received at MDH-PHL. Providers can call MDH and ask to speak with someone about mumps specimens if they have any questions:* 651-201-5414 or 1-877-676-5414

OPTION 2: Start here if mumps PCR specimens:

□ have already been collected **OR**
□ are en route to MDH **OR**
□ test results are already known **OR**
□ are not valid (longer than 9 days since parotitis onset) **OR**
□ are not available (it is not possible for patient to come back into the office to give specimens

Then go through checklist:

✓ Confirm that the provider has diagnosed mumps (or is highly suspicious of mumps if not yet confirmed)
✓ Obtain as much information as possible from the healthcare facility/provider who made the mumps diagnosis (this is important, as you might not be able to reach the patient).
✓ Request any and all chart notes and lab work pertinent to the patient's mumps diagnosis (this may include records from more than 1 clinic visit)
✓ Request any labs indicating differential diagnoses (refer to section1.13)
✓ Request demographic and contact information for the suspect case

- ✓ Interview healthcare provider (or nurse or assistant if healthcare provider is not available) utilizing the mumps CRF. Sections to go over with the provider are as follows:
  - Mumps Specific Information (get as much clinical information from provider as possible, take notes on separate sheet and fill into the CRF later if necessary)
  - Hospitalization Information
  - Laboratory
  - Vaccine History (for MMR only)
  - Epidemiologic Information
    - ➢ Ask if provider knows anything about the suspect case's exposure to mumps
    - ➢ It is likely that the provider will not know much about the case's exposure
- ✓ Discuss Control Measures with provider or infection control practitioner

Note: If specimens are en route (to MDH) inform the provider that MDH will call the provider back immediately once PCR results are available. Test results are typically available the business day after they are received at MDH-PHL. Providers can call MDH and ask to speak with someone about mumps specimens if they have any questions: 651-201-5414 or 1-877-676-5414

5.4 INTERVIEW SUSPECT CASE/SUSPECT CASE'S GUARDIAN

After having interviewed the healthcare provider (yourself or someone else), contact the suspect case for an interview:

- Utilize the mumps CRF to interview the suspect case
- Initiate contact with the case within one (1) working day of receiving the assignment (a voicemail counts)
- If you must leave a voicemail message, DO NOT directly mention that you are calling about a suspect case of mumps in (person's name). Instead, your message can mention that you are calling about a reportable disease and that you need to speak to (person's name).
- Once you reach the case, continue working through the CRF:
  - ✓ Read Tennessen Warning (found within CRF)
    - Note: Contact the patient/guardian only after speaking with the clinic (or make sure that someone has spoken with the clinic). This rule should only be ignored in extenuating circumstances)
    - Speaking with minors is not allowable unless the parent specifically and verbally notifies the investigator that it is OK.
  - ✓ Obtain information from all sections on the CRF, making sure to fill out the activity history section (school, work, etc) through the twenty-five (25) days prior to symptom/parotitis onset.
  - ✓ Though some clinical details may already be known about the case, make sure to thoroughly go through the 'clinical' section of the CRF with the case or case's parent/guardian (repeating questions regarding all symptoms even if the provider has already answered many of them is a good idea; cross-referencing onset dates is a good way to accurately determine infectious periods)
  - ✓ Obtain information on school, work, travel, and other activities during the infectious period
  - ✓ Ask permission of the case to use their name when contacting identified school, work and other activities. Since mumps is reportable, public health officials are able to notify schools, activities, and workplaces of a case of mumps without permission; however, permission is needed to identify the case ***by name*** when notifying the school/childcare, etc.

- Discuss Control Measures **Control Measures** with parent/guardian
- A case is deemed "Lost fo Follow-up" when:
    - ✓ After 8 attempts to make contact, the case is deemed unreachable. Attempts should occur twice in each of the following time windows: week morning, week afternoon, week evening, and weekend, **OR**
    - ✓ No valid contact information could be obtained for the case

- Send or fax completed CRF form to MDH upon case completion, **OR**
- Scan and attach the CRF to the case's MEDSS record

6. INCIDENT COMMAND

6.1 KEY OBJECTIVES

- Stop the spread of disease utilizing the Incident Command System (ICS) as a scalable interagency process
- Manage both internal and external agency:
  - ✓ Communication ✓ Procedures ✓ Protocol ✓ Resources

6.2 DEFINITION OF INCIDENT COMMAND SYSTEM (ICS)

- ICS is a "management system designed to enable efficient domestic incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure"[1]

- If your agency personnel have not already been trained to use ICS, the Federal Emergency Management Agency (FEMA) website provides training materials here.

6.3 WHEN TO "STAND UP" ICS WHEN YOUR AGENCY IS INVOLVED IN MUMPS RESPONSE

- In the event of a large mumps outbreak, implementation of ICS may be necessary.

- "Stand Up" or implementation of ICS at your municipal, local, or state health department is based upon your agency capacity *at the time of the incident*

- Capacity implies sufficient staffing to *maintain essential agency functions* while addressing all response needs of the unfolding incident

6.4 KEY ICS ROLES & STRUCTURES IN A MUMPS INVESTIGATION

- The **MDH Incident Commander** is has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations.

- Minimally, all participating agencies will use a Modified Incident Command System, with a designated Incident Commander and Deputy Incident Commander available to represent their agency through the MDH General Staff during situational updates

- The Full Incident Command Structure, utilizing command and general staff, may not always be appropriate, and all participating agencies in a mumps investigation may not use full ICS simultaneously

- The **MDH Operations Chief** will communicate to Command/General staff input from all participating partner representatives, situational awareness from reporting Operations Branches (Isolation & Quarantine, Post Exposure Prophylaxis, Education, etc.)

- The **MDH Planning Chief** will communicate to Command/General staff input from all participating partner representatives, situational awareness from reporting Planning Branches

- The **MDH Logistics Chief** will communicate to Command/General staff input from all participating partner representatives, situational awareness from reporting Logistics Branches.

- The **MDH Finance Chief** will communicate to Command/General staff input from all participating partner representatives, situational awareness from reporting Finance Branches

6.5 INITIAL INTERAGENCY SITUATIONAL UPDATE CONFERENCE CALL

- This call is the first scheduled interagency mumps investigation situational update
- The State Incident Commander (MDH) is responsible for setting up this call (ie., creating interagency listserve, notifying appropriate agencies involved, etc)
- Once the date and time of the call are established, the State Incident Commander will notify by email all responding agency Incident Commanders of: Day – Date – Time – and call-in information.

- Before ending the call, the MDH Incident Commander will define and confirm:
  - ✓ All responding agency's Incident Command structure, points of contact (ie., modified incident command with Incident and Deputy Commanders or full incident command with Incident Commander, PIO, General staff etc.) and contact info. (primary phone, alternate phone, email, fax)
  - ✓ Interagency operational period
  - ✓ Interagency operational period objectives
  - ✓ Date and time of next interagency situational update call

- After the initial Interagency Situational Update Conference Call the MDH Incident Commander will:
  - ✓ Notify by email all current responding agency Incident Commanders of next call, including an updated listserve attachment of current participating agencies, their ICS structure, & meeting minutes (ICS-202) summarizing update call

6.6 SITUATIONAL UPDATES

- Situational update conference calls will be ongoing throughout a mumps outbreak, and depending on the severity of the outbreak, may occur as often as needed during an operational period.
- Details of situational updates will be communicated to all parties involved by the MDH Incident Commander using ICS-202 form.
- Details for the first situational update will be provided during the initial interagency situational update conference call described in section 6.5.
- Details for subsequent situational updates will be confirmed at the end of each call
- Typically, interagency situational updates occur at the beginning and end of each interagency operational period
- Call participation by agency Incident Commanders and Deputy Incident Commanders is required
- Section Chiefs may also participate if agencies have expanded from a modified ICS structure

7. CONTROL MEASURES

7.1 KEY OBJECTIVES

- To notify contacts of their exposure to mumps and provide exclusion and vaccination recommendations based on presumptive evidence of immunity

7.2 PRESUMPTIVE EVIDENCE OF IMMUNITY

- To presume an individual immune at least one of the following should be true:

✓ Documentation of age-appropriate vaccination with a live mumps virus-containing vaccine§:
  -preschool-aged children: 1 dose
  -school-aged children (grades K-12): 2 doses
  -adults not at high risk¶¶: 1 dose, or
✓ Laboratory evidence of immunity,¶ or
✓ Laboratory confirmation of disease, or
✓ Born before 1957

§ The first dose of MMR vaccine should be administered at age ≥12 months; the second dose of measles- or mumps-containing vaccine should be administered no earlier than 28 days after the first dose.
¶¶ Adults at high risk include students in post-high school educational institutions, health-care personnel, and international travelers.
¶ Measles, rubella, or mumps immunoglobulin G (IgG) in serum; equivocal results should be considered negative.

- Presuming immunity in high risk adults:

Students at post-high school educational institutions	Health-care personnel†	International travelers
✓Documentation of vaccination with 2 doses of live mumps virus-containing vaccine,§ or ✓Laboratory evidence of immunity,¶ or ✓Laboratory confirmation of disease, or ✓Born before 1957	✓Documentation of vaccination with 2 doses of live mumps virus-containing vaccine,§ or ✓Laboratory evidence of immunity,¶ or ✓Laboratory confirmation of disease ✓Born before 1957†	✓Documentation of age-appropriate vaccination with a live mumps virus-containing vaccine: -infants aged 6-11 months**: 1 dose -persons aged ≥12 months§: 2 doses, or ✓Laboratory evidence of immunity,¶ or ✓Laboratory confirmation of disease, or ✓Born before 1957

§ The first dose of MMR vaccine should be administered at age ≥12 months; the second dose of measles- or mumps-containing vaccine should be administered no earlier than 28 days after the first dose.
¶¶ Adults at high risk include students in post-high school educational institutions, health-care personnel, and international travelers.
¶ Measles, rubella, or mumps immunoglobulin G (IgG) in serum; equivocal results should be considered negative.
† For unvaccinated personnel born before 1957 who lack laboratory evidence of measles, rubella, or mumps immunity or laboratory confirmation of disease, health-care facilities should consider vaccinating personnel with 2 doses of MMR vaccine at the appropriate interval (for measles and mumps) and 1 dose of MMR vaccine (for rubella), respectively.
** Children who receive a dose of MMR vaccine at age <12 months should be revaccinated with 2 doses of MMR vaccine, the first of which should be administered when the child is aged 12 through 15 months and the second at least 28 days later. If the child remains in an area where disease risk is high, the first dose should be administered at age 12 months.

7.3 HOME SETTING

- Obtain vaccination history of household contacts.
- Explain the reason behind the isolation period to the home.

7.4 SCHOOLS / CHILDCARE SETTING

- **Discuss (and collect where applicable) the following information with the childcare provider:**
  - ✓ Dates the case attended school/childcare during the infectious period
  - ✓ School/childcare contacts (defined as all children and all staff who were present with the case during the infectious period)
  - ✓ Vaccination status of school/childcare contacts
    - Encourage vaccine for those who are not up to date
    - Assess need to encourage vaccine in those who were previously contraindicated for the vaccine
  - ✓ Information regarding mumps
  - ✓ Heighten surveillance for symptoms compatible with mumps among school/childcare contacts for 25 days from last exposure
  - ✓ Review proper hand hygiene procedures
- **Notification:**
  - ✓ DO NOT send notification until a case has been classified as probable or confirmed
  - ✓ Provide parent notification materials to the school nurse/childcare provider for distribution to parents / guardians
    - School (Kindergarten – 12th Grade)
      - ✓ Provide a letter to all parents of students who are in the same class(es) as the confirmed or probable case
    - Childcare Center/Home Childcare
      - ✓ Provide a letter to all parents of children who are in the same class or have contact with the confirmed or probable case
  - ✓ School wide notification may occur if public health and the school officials deem it appropriate.
  - ✓ If a case remains a suspect (but not probable or confirmed) case, do not send a letter out to parents/guardians. Instead, maintain close communication with the school nurse/childcare provider and maintain surveillance to monitor for symptoms compatible with mumps among other students and staff for 25 days from last exposure
- **Exclusion:**
  - ✓ Confirmed or probable case: Until 5 days after onset of parotitis*
  - ✓ Suspect case: Until 5 days after onset of parotitis*, unless negative test results become available before the end of the 5 day exclusion period
- **Additional Cases:**
  - ✓ If two or more confirmed/probable cases occur with in the school setting, exclude unvaccinated children and staff from the school/childcare setting

7.5 GROUP OR RESIDENTIAL HOME

- **Discuss (and collect) the following with the case or parent/guardian and group or residential home director based on assessment:**
  - ✓ Dates the case was residing in the home during the infectious period.
  - ✓ Vaccination status and disease history of group or residential home residents/staff that came in contact with the confirmed/suspect case (Those born prior to 1957 are considered immune)
  - ✓ Heighten surveillance of symptoms compatible with mumps among group or residential home residents / staff for 25 days from last exposure
  - ✓ Immunization status of residents
    - Encourage vaccine for those who are not up to date
    - Assess need to encourage vaccine in those who were previously contraindicated for the vaccine
  - ✓ Information regarding mumps
  - ✓ Review proper infection control guidelines

- **Notification:**
  - ✓ DO NOT send notification until a case has been classified as probable or confirmed
  - ✓ When a case is classified as probable or confirmed, provide notification and fact sheet to those at risk for mumps to the facility contact and have them disseminate the information to:
    - Residents
    - Parents/guardians
    - Family members of residents
    - Staff (including floating staff)
  - ✓ When a case remains a clinical case, do not disseminate the information. Instead, maintain close communication with the facility contact and maintain surveillance of symptoms compatible with mumps among other residents/staff

- **Isolation/Exclusion from Activities:**
  - ✓ In addition to standard precautions, droplet precautions are recommended until 9 days after onset of parotid swelling. Nine days is appropriate in this setting due to different guidelines governing health care facilities

- **Additional Cases:**
  - ✓ Cohort unvaccinated from vaccinated susceptibles

7.6 CLINIC / HOSPITAL SETTING

- **Discuss (and collect) the following with the facility contact:**
  - ✓ Dates the case was in the clinic/hospital while infectious
  - ✓ Vaccination status and disease history of staff and patients who were contacts of the case

(Those born prior to 1957 are considered immune)

- ✓ Heighten surveillance of staff and patients for symptoms compatible with mumps
- ✓ Droplet precautions and room restrictions - note they should also consult their internal infection control practitioner

- **Notification:**
  - ✓ DO NOT send notification until a case has been classified as probable or confirmed
  - ✓ When a case is classified as probable or confirmed, provide information about who is at risk for mumps to the facility contact and have them disseminate the information to the staff (including floating staff) and any exposed patients
  - ✓ When a case remains a suspect case, do not encourage dissemination of mumps information to the staff. Instead, maintain close communication with the facility contact and encourage surveillance of symptoms compatible with mumps among the staff and patients

- **Isolation/Exclusion from Activities:**
  - ✓ In the hospital setting, in addition to standard precautions, droplet precautions are **recommended until 9 days after onset of parotid swelling.** Extending precautions to 9 days is appropriate in this setting due to different guidelines governing health care facilities

- **Additional Cases:**
  - ✓ Cohort unvaccinated susceptibles

7.7 ALL OTHER WORKSITES

- Advise case to notify place of employment
- Obtain case's permission to follow-up with their supervisor. If they refuse contact the supervisor and provide information without revealing the employee.
- DO NOT send notification until a case has been classified as probable or confirmed
- When a case is classified as probable or confirmed, provide information about who is at risk for mumps to the facility contact and have them disseminate the information to the staff
- Heighten surveillance of staff and patients for symptoms compatible with mumps
- **Exclusion:**
  - ✓ Confirmed or probable case: Until 5 days after onset of parotitis*
  - ✓ Suspect case: Until 5 days after onset of parotitis*, unless negative test results become available before the end of the 5 day exclusion period

7.8 OUTBREAK CONTROL

- The main strategy for controlling a mumps outbreak is to define the at-risk population and the transmission setting, and to rapidly identify and vaccinate susceptible persons or, if a contraindication exists, to exclude susceptible persons from the setting to prevent exposure and transmission.

- Mumps vaccine, preferably as MMR, should be administered to susceptible persons. Although mumps vaccination has not been shown to be effective in preventing mumps in persons already infected, it will prevent infection in those persons who are not infected. If susceptible persons can be vaccinated early in the course of an outbreak, they can be protected. However, cases are expected to continue to occur among newly-vaccinated persons who are already infected.

- As with all vaccines, there are some individuals who will not gain immunity after receipt of mumps vaccine. Because vaccine effectiveness is not 100%, a second dose of mumps containing vaccine is recommended during outbreak situations for individuals who have received only one dose previously. Furthermore, birth before 1957 does not guarantee mumps immunity, and in outbreak settings vaccination with a mumps containing vaccine should be considered for those born before 1957 who may be exposed to mumps and who may be susceptible.

APPENDICES

APPENDIX 1. DEFINITIONS

Anorexia	Loss of appetite especially when prolonged
Ataxia	Inability to coordinate muscle activity during voluntary movement
Buccal	Of or relating to the cheeks or the mouth cavity
Centrifugal	Lesions are more heavily concentrated on arms and legs
Centripetal	Lesions are more heavily concentrated on the trunk
Confluent	Merging or running together so as to form a mass, as sores in a rash
Conjunctivitis	Inflammation of the conjunctiva (the outermost layer of the eye and the inner surface of the eyelids)
Coryza	A word describing the symptoms of a "cold".It describes the inflammation of the mucous membranes lining the nasal cavity which usually gives rise to the symptoms of nasal congestion and loss of smell, among other symptoms
Crops	Lesions are different stages of development in one area of the body
Deep seated	Deeply embedded in the skin
Discrete	Individually separate and distinct
Enanthem	Enanthem or enanthema are medical terms for a rash (small spots) on the mucous membranes. These are characteristic of patients with smallpox, measles, and chicken pox.
Encephalitis	An inflammation of the brain that can lead to convulsions, and can leave the child deaf or mentally retarded.
Erythematous	Redness of the skin caused by dilatation and congestion of the capillaries, often a sign of inflammation or infection.
Exanthem	An exanthem (from Greek "exanthema", a breaking out) is a widespread rash usually occurring in children.
Generalized	Widespread rash on the body (rather than local)
IG (Immune globulin)	A blood product used to provide antibodies for short-term prevention of infectious diseases, including measles.
Koplik spots	A prodromic viral enanthem of measles manifesting two days before the measles rash itself. They are characterized as clustered, white lesions on the buccal mucosa and are pathognomonic for measles
Lymphadenopathy	A term meaning "disease of the lymph nodes." It is, however, almost synonymously used with "swollen/enlarged lymph nodes".

Macular	Adjective used to describe macules
Macules	Small, flat discolored spots/lesions on the surface of the skin, usually a different color from surrounding tissue
Maculopapular rash	A type of rash characterized by a flat, red area on the skin that is covered with small confluent raised bumps.
Mild	<50 lesions (varicella specific)
MMR	Measles, mumps & rubella-containing vaccine utilized for prevention and post-exposure prophylaxis of measles, mumps and rubella disease
Moderate	>50 - 499 lesions (varicella specific)
Otitis	Inflammation of the ear
Papular	Adjective used to describe papules
Papules	Small, solid raised bumps/lesions
Pathognomonic	A term, often used in medicine, that means *characteristic for a particular disease*. A pathognomonic sign is a particular sign whose presence means that a particular disease is present beyond any doubt
PCR	Polymerase Chain Reaction is a biochemical technology in molecular biology to amplify a single or a few copies of a piece of DNA across several orders of magnitude, generating thousands to millions of copies of a particular DNA sequence.
Petechial	Describes 'Petechiae' or small purplish spots on a body surface, such as the skin or a mucous membrane, caused by a minute hemorrhage
Pleural	Of or relating to the pleura or the walls of the lungs/thorax
Pleural effusions	A buildup of fluid between the layers of tissue that line the lungs and chest cavity
Pneumonia	Pneumonia is an inflammatory condition of the lung—affecting primarily the microscopic air sacs known as alveoli. It is usually caused by infection with viruses or bacteria and less commonly other microorganisms, certain drugs and other conditions such as autoimmune diseases. Typical symptoms include a cough, chest pain, fever, and difficulty breathing.
Polyserositis	Inflammation of several serous membranes (as the pleura, pericardium, and peritoneum) at the same time
Postexposure prophylaxis (PEP)	Any preventive medical treatment started immediately after exposure to a pathogen order to prevent infection by the pathogen and the development of disease.

Prodrome	A prodrome is an early symptom (or set of symptoms) that might indicate the start of a disease before specific symptoms occur. It is derived from the Greek word prodromos or precursor.
Purpuric	An adjective describing purpura, or the appearance of purple discolorations on the skin
Pustules	Raised lesions filled with pus (yellow, thick exudates)
Seroconversion	The development of detectable specific antibodies to microorganisms in the blood serum as a result of infection or immunization.
Severe	>500 lesions (varicella specific)
Severely Immunocompromised	Severely immunocompromised patients include patients with severe primary immunodeficiency; patients who have received a bone marrow transplant until at least 12 months after finishing all immunosuppressive treatment, or longer in patients who have developed graft-versus-host disease; patients on treatment for ALL within and until at least 6 months after completion of immunosuppressive chemotherapy; and patients with a diagnosis of AIDS or HIV-infected persons with severe immuno-suppression defined as CD4 percent <15% (all ages) or CD4 count <200 lymphocytes/mm^3 (aged >5 years) and those who have not received MMR vaccine since receiving effective ART. Some experts include HIV-infected persons who lack recent confirmation of immunologic status or measles immunity.
Thrombocytopenia	Low number of platelets in the blood
Uniform	Lesions are in same stage of development in one area of the body
Urticarial	A transient condition of the skin, usually caused by an allergic reaction, characterized by pale or reddened irregular, elevated patches and severe itching; hives.
Vesicular	Describes vesicles, which are raised clear fluid-filled lesions
Vesicules	Raised, clear fluid-filled lesions

MUMPS TOOLKIT

T1. FACTSHEETS

T1.1 Mumps (English)
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/mumps/mumpsfacts.pdf

T1.2 Mumps Clinical Information (Healthcare Professionals)
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/mumps/hcp/clinical.pdf

T1.3 Mumps Vaccination and Disease History Assumptions by Age
MDH WEBSITE: : http://www.health.state.mn.us/divs/idepc/diseases/mumps/hcp/assump.pdf

T2. LABORATORY TESTING

T2.1 Lab Testing for Mumps at the MDH Public Health Laboratory
MDH WEBSITE: http://www.health.state.mn.us/divs/idepc/diseases/mumps/hcp/labtesting.pdf

T2.2 Clinical Testing and Submission Form (print and fill out manually)
MDH WEBSITE: http://www.health.state.mn.us/divs/phl/clin/print_mdh.pdf

T2.3 Clinical Testing and Submission Form (fill out and save on your computer)
MDH WEBSITE: http://www.health.state.mn.us/divs/phl/clin/fillable_mdh.pdf

T2.4 Clinical Testing and Submission Form Instructions
MDH WEBSITE: http://www.health.state.mn.us/divs/phl/clin/mdhinstructions.pdf

T3. CASE INVESTIGATIONS

T3.1 Case Report Form (CRF)
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T4. INCIDENT COMMAND MATERIALS

T4.1 Incident Command Forms on Workspace
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T5. INFECTION CONTROL & EXPOSURE PRECAUTIONS

T5.1 Droplet Precautions
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

T6. NOTIFICATION LETTERS & SCRIPTS

T6.1 Notification Letter: Parents
MDH WORKSPACE: https://oep.health.state.mn.us/workspace/web/ Note: Must have valid login information

MINNESOTA MDH DEPARTMENT OF HEALTH

Guidelines for the Prevention and Control of Pertussis

FINAL 2012 DOCUMENT

9/28/2012
Updated For:
Pertussis Prophylaxis Recommendations
Notification Recommendations
Follow-up protocol clarification
Vaccine immunity updates (waning immunity information)
Links for Workspace and other documents

MEDSS
District Epidemiologist and Local Public Health Jurisdictions
Update on use of suspect cases in investigations (p.5)

10/15/2012
Updated for Clarification:
Local Public Health Definition
Serology and DFA positive suspect cases
Probable vs Confirmed prophylaxis recommendations

02/15/2013
Updated for Clarification:
Lost To Follow–Up Procedure

03/18/2014
Updated for Clarification
Control measures and use of 3-day letter
Exclusion recommendations of symptomatic contacts

This document has been prepared through a collaborative effort of the Local Epidemiology Network of Minnesota and the Minnesota Department of Health Field Services, and Immunization, Tuberculosis and International Health Section

(3/18/2014)

TABLE OF CONTENTS

On the following pages you will find tools to help you navigate through a case investigation, including:

- A brief overview of pertussis and associated definitions
- An overview of MDH's activities involving pertussis investigations, and instructions on how to perform an investigation
- Links to materials including letter templates and fact sheets
- Case classification definitions
- Outbreak setting and case classifications
- Control Measure Outline
- Laboratory confirmation options
- Vaccine immunity information

PERTUSSIS BASICS

Infectious Agent	*Bordetella pertussis*
Transmission	Contact with respiratory secretions of infected persons via inhalation of droplets[i]
Incubation Period	4 to 21 days, usually 7 to 10 days[ii]
Infectious Period	From catarrhal stage to two weeks after paroxysmal cough onset (in general, for the first three weeks of cough, starting with the catarrhal phase cough). If treated with appropriate antibiotics, the period of infectiousness lasts until 5 full days after initiation of treatment (www.health.state.mn.us/divs/idepc/diseases/pertussis/hcp/treatment.html)

Definitions

Acute encephalopathy: Acute disease of the brain manifested by a decreased level of consciousness (excluding transient drowsiness after a seizure) occurring with or without seizures. Patients are almost always hospitalized and most undergo extensive diagnostic evaluations.

Apnea: Transient cessation of respiration which might occur spontaneously or after a coughing spasm. Apnea is generally associated with cyanosis or syncope (passing out) and might be accompanied by slowing of the heartbeat (bradycardia). Apnea is a common pertussis symptom in infants and might be the only presenting sign of pertussis in young infants with no cough; apnea is rarely associated with pertussis in older children and adults. [iii]

Coryza: Acute inflammation of the mucous membrane of the nasal cavities; runny nose.

Cyanosis: Paleness or blueness of the skin, most noticeable on the lips and tongue, occurring after coughing paroxysms and apnea.

Paroxysmal cough: Sudden uncontrollable spasms or bursts of coughing where one cough follows the next without a break for breath.

Positive chest X-ray for pneumonia: Evidence of acute pneumonia on chest x-ray.

Posttussive vomiting: Vomiting that follows a paroxysm of coughing.

Whoop: High-pitched noise heard when breathing in after a coughing spasm.

Clinical Course

Pertussis is characterized by three stages.

Stage	Description	Duration
Catarrhal	An insidious onset of coryza, sneezing, low-grade fever, and a mild, occasional cough, similar to the common cold.	1 – 2 weeks
Paroxysmal	Paroxysmal, spasmodic cough with or without posttussive vomiting or inspiratory whoop. Person can appear well between attacks.	1 – 6 weeks (usually 3-4 weeks, but can be as long as 10 weeks)
Convalescent	Symptoms gradually resolve	2 – 4 weeks

Note: In adults, adolescents, and vaccinated children, pertussis can be atypical and may present like chronic bronchitis, asthma, and other upper respiratory infections. In very young infants, whoop is often absent and sometimes even the cough is absent; apnea is common in this age group.

Overview of Pertussis Investigations:

Pertussis (whooping cough) is a reportable disease. There are a number of Minnesota Statutes and Minnesota Rules that require and/or authorize public health disease reporting by covered entities (i.e. health care providers, hospitals, clinics, HMOs, and health insurers). Two pertinent provisions are the following:

- **Minnesota Rule, chapter 4605**
  This sets out requirements for covered entities to report communicable diseases (such as Pertussis).
- **Health Insurance Portability and Accountability Act (HIPAA) of 1996**
  - HIPAA is designed to help ensure the privacy of the public; however, to maintain the success of public health, there are certain exceptions to the requirement of patient authorization to release data.
  - Specifically, 45 CFR 164.512(a)&(b) allows covered entities to continue to report communicable disease information without patient authorization as required by Minnesota Rules, chapter 4605.

A case investigation is initiated upon report of a positive laboratory result, a clinically diagnosed case, or any suspect case that is brought to the attention of state/local public health.

- Most cases of pertussis are reported to the state through labs processing pertussis specimens.
- Upon receipt of a positive lab report (usually PCR and occasionally culture) MDH central office staff obtains address and contact information on the case.
- Based on that information, the case is assigned to local or district public health. Simultaneously, a MDH representative enters the case into MEDSS (Minnesota Electronic Disease Surveillance System) and an EVENT ID is assigned.

The MDH representative sends an electronic task through the MEDSS system to the local/district public health agency. The task indicates the associated MEDSS number. Local public health is currently defined as county/municipal workers trained to perform case-based pertussis investigations. District epidemiologists are epidemiologists employed by MDH who are located in 7 different district areas, and are responsible for pertussis and other diseases in that area, rather than the county. Occasionally, in outbreak situations, counties currently covered by district epidemiologists will temporarily help with outbreak response, including, but not limited to, coordination of community notification and case investigations. Current local public health and districts epidemiologists doing case base pertussis investigations are:

- Local Public Health (county and city level)
  - Anoka
  - Carver
  - Dakota
  - Hennepin
  - Bloomington, Edina, Richfield
  - Olmstead
  - Ramsey
  - Scott
  - Washington
  - Wright
- MDH District Epidemiologist (responsible for cases in the associated counties):
  - **North Eastern District Epidemiologist:** Aitkin, Carlton, Cook, Itasca, Koochiching, Lake, St. Louis
  - **North Western District Epidemiologist:** Beltrami, Clear Water, Hubbard, Kittson Lake of the Woods, Marshall, Pennington, Polk, Red Lake, Roseau
  - **West Central District:** Becker, Clay, Douglas, Grant, Mahnomen, Norman, Ottertail, Pope, Stevens, Traverse, Wilkin
  - **Central District Epidemiologist:** Benton, Cass, Crow Wing, Isanti, Kanabec, Mille Lacs, Morrison Pine, Stearns, Todd, Wadena
  - **Metro District Epidemiologist:** Chisago, Sherburne
  - **South Western District Epidemiologist:** Big Stone, Chippewa, Cottonwood, Jackson, Kandiyohi, Lac Qui Parle, Lincoln, Lyon, Murray, Nobles, Pipestone, Redwood, Renville, Rock, Swift, Yellow Medicine
  - **South Central District Epidemiologist:** Brown, Blue Earth, Faribault, Le Sueur, Martin, Meeker, McLeod, Nicollet, Sibley, Waseca, Watonwan
  - **South Eastern District Epidemiologist:** Dodge, Goodhue, Houston, Fillmore, Freeborn, Mower, Steele, Rice, Wabasha, Winona

Local/District Public Health Investigation Activities:

MATERIALS FOR INVESTIGATIONS

All documents needed for case investigation, notification and data entry in to MEDSS can be found on the Minnesota Department of Health Workspace: https://oep.health.state.mn.us/workspace/

- Go to the workspace website to create an account if an account is needed
- The Workspace is a password-protected site designed for public health entities to share information on various public health events.
- Documents related to pertussis can be found under:
  - Preparedness & Response Tools >>
  - Infectious Diseases >>
  - VPD Surveillance

Public Access documents such as provider and public specific fact sheets can be found at: www.health.state.mn.us/divs/idepc/diseases/pertussis/index.html

CASE INVESTIGATION PROTOCOL

Within 2 business days of receipt of the case report

- Call the diagnosing clinic and obtain information on clinical presentation and treatment.
  - This step is encouraged but not mandatory. This is an ideal time to educate providers and connect with them regarding the current recommendations of and trends for pertussis.
- Attempt to contact the case/parent/guardian (leaving a voicemail counts).

Continue attempts for a week

- If not able to reach case/parent/guardian use a letter in a self-addressed envelope to request times and phone numbers for the call.
- If case/parent/guardian doesn't respond within 2 weeks, consider Lost To Follow-Up (LTF) and mark on the report form/pertussis wizard.

Upon reaching the Case

- Give Tennessen Warning (see template on workspace)
- Obtain all information on the pertussis report form/MEDSS pertussis wizard
- Obtain information on school, work, and other activities during the infectious period
- Ask permission of the case to use name when contacting school, work, and other activities. Since pertussis is reportable, public health officials are able to notify schools, activities, and workplaces of a case of pertussis without permission; however, permission is needed to identify the individual by name when notifying any of the above entities
- Provide notification, prophylaxis, and exclusion recommendations for household members and other contacts
- **Within one week of interview completion, enter data in the MEDSS pertussis event, using the wizard, or complete the pertussis case report form and fax to the MDH metro office for MDH staff to enter in to MEDSS**
- Follow up with all cases who were coughing less than 14 days at time of initial interview to ascertain if clinical case definition is met
- Follow up with all cases who had not completed antibiotic therapy at time of initial interview to ascertain if antibiotic regimen was completed
- Household or activity contacts who are coughing should be considered as suspect cases, and a case report/MEDSS event should be initiated.
- Obtain names of clinics where any tetanus, diphtheria and pertussis containing vaccines were given
  - MDH will follow-up with clinics to obtain dates, lot number and manufacturer when possible. Sources of this information include case themselves, current provider, provider that administered the vaccine, and MIIC.

Extenuating Circumstances

- Please call the Vaccine Preventable Disease Unit at the Minnesota Department of Health if the local health department is not able to sustain workloads in the context of an outbreak. Partnership with MDH may be available in these situations.

CLINICAL CASE DEFINITION

A cough illness lasting at least 2 weeks with one of the following: paroxysms of coughing, inspiratory "whoop," or posttussive vomiting; without other apparent cause (as reported by public health and/or a health care professional).

OUTBREAK CASE DEFINITION: In the context of an *Institutional or Community* outbreak, a clinical case is defined as a cough illness lasting 14 days or longer regardless of other symptoms.

CASE CLASSIFICATIONS:

SUSPECT CASE (MDH Definition)

An individual reported to the state or local health department with symptoms consistent with pertussis, including:

- cough of 7 or more days if not epidemiologically-linked (see below);
- cough of any duration if epidemiologically-linked (see below); or
- evaluation by a health care provider for a cough illness, which includes pertussis in the differential diagnosis.

Suspect cases will be classified for CDC reporting as "confirmed," "probable," "ruled out," or "lost to follow-up," as defined below.

NOTE ON SUSPECT CASES: Often there is more than one cougher in a setting where pertussis has been diagnosed. Although suspect cases are technically reportable to the state, we reserve this definition for active case finding when the situation warrants such measures. This may occur in classroom settings where an outbreak is occurring. It is up to the discretion of the activity director and public health to decide what level of tracking is needed. This definition exists in the reporting law so that we have access to such cases if needed in the context of controlling an outbreak.

EPIDEMIOLOGICALLY LINKED CASE (EPI-LINKED)

A clinical case for which the chain of transmission can be traced back to a laboratory-confirmed case and the timing of exposure was compatible with the incubation period of pertussis.

CONFIRMED CASE

An individual:

- who is CULTURE positive, regardless of symptoms, or
- who meets the clinical case definition (see above) and is PCR positive[1], or
- who meets the clinical case definition (see above) and is epidemiologically-linked to a laboratory-confirmed case (by culture or PCR)

PROBABLE CASE

A case that meets the clinical case definition who:

- Is not laboratory-confirmed by PCR or Culture (even if positive by DFA or Serology)

AND

- Is not epi-linked to a **laboratory-confirmed case.**

NOTE: MDH recommends following up on Serology and DFA positive patients and Equivocal PCR patients to see if they meet the probable case definition. It is helpful to talk with the provider first to see if the provider is clinically diagnosing pertussis. **If the provider clinically diagnosis pertussis, these patients should be followed-up on as probable cases.**

RULED OUT

A suspect case that is investigated and does not meet the definition for a confirmed, epi-linked, or probable case. This includes cases who are PCR positive but do not meet the clinical case definition. **However, PCR positive cases should be investigated as confirmed regardless of cough duration for purposes of public health response.**

LOST TO FOLLOW-UP

- A suspect case for whom follow-up could not be completed.
- **IMPORTANT: If a case is Lost To Follow-UP, then every attempt should be made to contact the provider to determine of a 14 day cough history existed at time of testing, or if the provider had subsequent contact with the patient that would infer a 14 day cough history and identify other symptoms.**

---

[1] Although PCR positive cases need to meet the clinical case definition to be reported to CDC as confirmed, any case that is PCR positive is considered confirmed for the purpose of implementing public health investigation and control measures – regardless of symptom presentation.

OUTBREAK DEFINITIONS

HOUSEHOLD OUTBREAK

- Two or more cases; the outbreak case definition may be used to count cases if one case has been confirmed.
- A household consists of all persons who occupy a particular housing unit as their usual residence or who live there at the time of the disease of the case.
- Symptomatic household contacts should be considered "epidemiologically-linked." Other close contacts include a child's caregiver, friends, or relatives that come to the home regularly.

INSTITUTIONAL OR GROUP OUTBREAK

(e.g., schools, child care centers, health care settings, etc.)

- Two or more cases clustered in time (e.g., cases occurring within 42 days of each other) and space (e.g., in one building) where transmission is suspected to have occurred in that setting (e.g., nosocomial transmission in a hospital); the outbreak case definition may be used to count cases if one case has been confirmed.

COMMUNITY OUTBREAK

- When the number of reported cases is:
  - higher than what is expected on the basis of previous reports during a nonepidemic period
  - for a given population
  - in a defined time period (i.e., historical disease patterns).
- If a suspect case with no history of symptoms other than a two week cough cannot be linked to a specific group of people (i.e., school, faith-based organization, etc.) during a community outbreak, then they should not be counted as either probable or confirmed (unless the community itself is small enough to warrant a probable or confirmed classification).

CULTURE CONFIRMATION DURING AN OUTBREAK

In *Community Outbreak* settings there should be a strong attempt to confirm one or more of the cases by culture. The Minnesota Department of Health can help facilitate this effort. The epidemiologist at MDH should be contacted at the time of the outbreak to discuss ways to obtain culture viable specimens.

ENTERING OUTBREAKS INTO MEDSS

- Naming outbreaks at the local/district level should apply to *Household Outbreaks* and *Institutional Outbreaks*.
- MDH will work with local and district public health agencies to determine the status and use of naming *Community Outbreaks*
- To enter outbreaks in MEDSS, please refer to the document "Naming a Pertussis Outbreak" located on the Workspace.

INVESTIGATION BASICS:

Determining Symptoms and Epidemiological Information:

- How are you feeling?
- Do you have cold symptoms (runny nose, sneezing); when did they start?
- Do you have a cough; when did it start?
- Describe your cough. (Ask open-ended questions first; only proceed to the following if more details are needed)
  - Do you feel as if you are choking and cannot breathe?
  - Do you cough at night or is your coughing worse at night?
  - Do you have coughing spells where you feel as if you cannot stop coughing? (Paroxysmal coughing)
- Are there other people in your house (class, team, extra-curricular group, worksite, close friends, etc.) with a cough?
- How long have they been coughing?
- Do you know someone who has pertussis?

Determining Potential Transmission Settings:

During the time you were infectious did you participate in any of the following:

- Work
- School
- Choir
- Sports or dance
- Clubs
- Faith-based activities
- Band
- Sleepovers
- Camping, car rides, etc.

Definitions of Significant Exposure:

- **Household contacts:** Contacts with 8 hours of interaction within the same household
- **Close contacts:**
  - **Common Space:** Contacts with more than 10 hours per week of close exposure (.i.e., classroom, activity group, work colleagues)
  - **Face-to-face contacts:** Contacts with direct face-to-face exposure during coughing or sneezing, regardless of the duration of exposure
  - **Shared confined space** in close proximity for a prolonged period of time, such as ≥1 hour within three feet proximity, with a symptomatic case-patient (i.e., long car ride, small conference room, piano lessons, work cube mate, home day care, etc…)

General Prophylaxis Recommendations:

- Probable cases – prophylax only household members and situations were close contacts are at high risk for severe pertussis (see first two bullets under "Post-exposure prophylaxis is generally limited to"
- Lab positive or confirmed cases – prophylaxis should be applied to all listed below
- Post-exposure prophylaxis is generally limited to:
  - Household contacts
  - Close contacts at high risk for severe pertussis including:
    - Infants <12 months
    - Pregnant women (especially those in the 3rd trimester)
    - Immunocompromised or those with pre-existing health conditions that may be exacerbated by a pertussis infection
  - Close contacts who might expose those at high risk for severe pertussis (especially infants <12 months)
  - Health care workers who have unprotected exposure to pertussis and are likely to have contact with persons who would be at high risk for severe pertussis (e.g., hospitalized neonates and pregnant women). Other health care workers with unprotected exposure should receive PEP or be monitored daily for 21 days after exposure
  - Broader use of PEP may be appropriate in limited settings as recommended by public health
- Find Treatment and PEP dose recommendations at: www.health.state.mn.us/divs/idepc/diseases/pertussis/hcp/treatment.html

General Notification Recommendations:

- Notification is generally recommended for confirmed or lab positive cases. The decision to notify should be based on the type of exposure situation and the community dynamics. Notification can occur via:
  - Word of mouth to household; friends and family contacts through either the family member or public health
  - Parent/Participant for activities not involving school, day care, health care settings
    - However, send PDF version of letter and fact sheet to parent/participant to give to activity leader
  - Public health collaboration with representatives from schools, child cares and health care settings
- For further guidance of which letters to use in activity, school, and health care settings – see the next page
- On occasion notification of exposure to suspect or probable cases may be warranted.

CONTROL MEASURES

Activities/Schools/Households/Work/etc.

Notification:

- Notification should be done in any situation where a *Significant Exposure* occurs (defined as household or close contact situation)
- Word of mouth is ok for household, friends and relatives who have significant contact
- Use the pertFYIActivity_7day letter for situations that involve 2 or fewer cases within a *Close Contact* setting
    - Example – 2 or fewer cases in the classroom
    - Example – 2 or fewer cases in an activity
- Use the pertFYIActivity_3day letter for situations that involve 3 or more cases within a *Close Contact* setting
    - Example – 3 or more cases in the same classroom
        - NOT 3 or more cases in the same school in separate classrooms
    - **Exception** – Also use this letter in situations where the type of close contact would cause a high likelihood of transmission. For example, individuals in a choir, individuals who were part of a sleep over, prolonged car rides (not buses), etc... Contact MDH for any questions about using this letter.
- Use the Community_Newsletter for situations that involve broader notification in a setting due to increase in cases or community preference for more information
    - Example – 2 cases in the school, but school wants to do a larger notification than just those grades
    - Example – 1 case at a place of employment, but setting is more appropriate for break room postings, or email or Web based postings.
- Use the pertFYIActivity_Antibiotic letter for contacts for whom prophylaxis is recommended (see below)
- **NOTE:** The examples above are guidelines; each situation should be evaluated for its uniqueness. Use whatever materials are best appropriate for each situation. Letters can be found on the Workspace and fact sheets can be found on the MDH pertussis website.

Prophylaxis:

- Whether to recommend prophylaxis for an entire group versus specific individuals should be decided within the context of the situation. Prophylaxis is recommended in *Close Contact* settings where the following individuals are present:
    - Persons at high risk for severe pertussis including:
        - Infants <12 months
        - Pregnant women (especially those in the 3rd trimester)
        - Immunocompromised or those with pre-existing health conditions that may be exacerbated by a pertussis infection
    - Persons with anticipated exposure to those at high risk for severe pertussis, in these situations it is more likely that just the individual is prophylaxed versus the group, but should be assessed accordingly. See examples:
        - NICU nurse – exposed to best friend, outside of work who had pertussis - prophylax NICU nurse
        - Home day care provider – exposed to best friend outside of work, day care provider has infant under her care - prophylax home day care provider only

    NOTE: These recommendations do not imply that all contacts in a group setting should be assessed for their anticipated exposure to those at high risk for severe pertussis. Limit this assessment to the more one-on-one type contacts (relatives, best friends) or the obvious high risk individual in a group (such as pregnant teacher in a classroom).
- Use the pertFYIActivity _Antibiotic letter for situations that involve prophylaxis recommendations
    - Example – Home child care exposure
        - In situations where child is at the home day care for more than 16 hours a week
        - Or any time period if there are infants <12 months of age or pregnant persons at the child care
    - Example – Pregnant teacher in the classroom
        - Prophylax teacher only
        - Simultaneously use 3 day letter for the rest of the classroom in order to catch cases early on to avoid further spread and exposure to pertussis. This enhanced approach is to also protect the "high risk" individual, the teacher.

Exclusion:

- In general, cases should be excluded from activities until completion of 5 days of antibiotics or until after the first 21 days of cough.
- Probable cases should be excluded if a provider is treating and has clinically diagnosed
- Suspect cases should be excluded if a provider is testing and treating for pertussis. In some outbreak situations exclusion may be recommended for those who are only being tested (but not treated).

CONTROL MEASURES (continued)

Health Care Facilities

Health Care Worker **Has Pertussis**

Notification: Notification should be done in any situation where the HCW was NOT masking and where a *Close Contact* occurred

- For patients NOT at *high risk for severe pertussis*: use ClinicExposure_Other Letter
- For staff, have clinic/hospital notify staff to watch for symptoms, consider monitoring for 21 days post most recent exposure. Prophylaxis can be considered, but should be especially considered for those listed below.
- No specific notification is recommended for family members that may be at the health care visit with the patient evaluated by the HCW. However, a general statement is included in the clinic letter to the patient.

Prophylaxis: Prophylaxis should be used where the HCW was NOT masking and where a *Close Contact* to an individual at *high risk for severe pertussis* occurred:

- Patients who were exposed
    - Less than 12 months of age
        - For patients: **Phone call** AND use ClinicExposure_Infant Letter
    - Pregnant (or Immunocompromised affecting respiratory tract)
        - For patients: use ClinicExposure_PregnantImmuno Letter
- Staff who were exposed
    - Who work with patients:
        - Less than 12 months of age
        - Pregnant (or Immunocompromised affecting respiratory tract)
    - Or staff who are pregnant themselves

Health Care Worker **Was Exposed** to a case of pertussis

Patient has pertussis and exposed a non-masking health care worker. In general, MDH does not expect local public health and district epidemiologists to follow-up with every clinic that diagnosis a case of pertussis to assess staff exposures and recommendations. **However, if a clinic/hospital calls for clarification, please use the following guidance for Notification and Prophylaxis:**

- If patient coughed greater than 21 days at time of exposure, no post-exposure notification/prophylaxis is necessary
- If patient was infectious at time of exposure then use the following classification & algorithm:
    - **Type of Contact**
        A. Face-to-face contact with coughing or sneezing patient without a mask
        B. Performing or assisting with procedures that induce coughing or produce aerosols without a mask
        C. Presence in same room with coughing or sneezing patient without a mask and performing a close-contact activity
        D. Presence in same room with coughing or sneezing patient without a mask and without close contact

A. **Type of Action for Contact Type**
    1. **A-C:** Recommend antibiotic prophylaxis **OR** 21 day symptom watch from time of exposure. Consideration should be given to patient population seen by the healthhealthcare provider.
    2. **D:** Recommend 21 day symptom watch from time of exposure

Exclusion for Both Situations:

- In general, cases should be excluded from activities until completion of 5 days In general, cases should be excluded from activities until completion of 5 days of antibiotics or until after the first 21 days of cough.
- Probable cases should be excluded if a provider is treating and has clinically diagnosed
- Suspect cases should be excluded if a provider is testing and treating for pertussis. In some outbreak situations exclusion may be recommended for those who are only being tested (but not treated).
- Household suspect (symptomatic) cases should be excluded until completion of 5 days of antibiotics. Testing of household contacts *can* be used to rule pertussis out, but is not required for household contacts to be tested nor is testing reliable if cough is greater than 10 days.

LABORATORY TESTING:

There are two approved methods used to confirm pertussis illness, PCR and culture.

Specimen Collection for Both PCR and Culture:

- Use a nasopharyngeal (NP) aspirate or swab applicator with a flexible wire.
- In general, specimen collection only needs to occur from one nare.

Polymerase Chain Reaction (PCR): PCR results are generally available in 2-3 days. Polymerase Chain Reaction (PCR) is an important tool for timely diagnosis of pertussis and is increasingly available to clinicians. PCR is a molecular technique used to detect DNA sequences of the Bordetella pertussis bacterium, and unlike culture, does not require viable (live) bacteria present in the specimen.

Despite these advantages, PCR can give results that are falsely-negative or falsely-positive. PCR results can be optimized by avoiding some of the more common pitfalls leading to inaccurate results. Although early signs and symptoms of pertussis are often non-specific, only patients with signs and symptoms consistent with pertussis should be tested. Asymptomatic close contacts of confirmed cases should not be tested and testing of contacts should not be used for post-exposure prophylaxis decisions. Falsely-positive results may also occur as a result of specimen contamination, which can occur during specimen collection and testing. The timing of PCR testing for pertussis can significantly affect its ability to accurately diagnose the disease. PCR has optimal sensitivity during the first 3 weeks of cough when bacterial DNA is still present in the nasopharynx. After the fourth week of cough, the amount of bacterial DNA rapidly diminishes which increases the risk of obtaining falsely-negative results.

Since its inclusion in the case definition in 1997, the proportion of cases confirmed by PCR has increased substantially, and many laboratories now use only PCR to confirm pertussis. However, as of March 2011, there are no standardized PCR assays for pertussis, and assay procedures, as well as sensitivity and specificity can vary greatly between laboratories. Thus, interpretation criteria for diagnosis vary. Interpretation of PCR results, especially those with high cycle threshold (Ct) values should be done in conjunction with an evaluation of signs and symptoms and available epidemiological information. For more information about interpretation of PCR Ct values, see Best Practices for Health Care Professionals on the use of Polymerase Chain Reaction (PCR) for Diagnosing Pertussis, which is located on the CDC pertussis website. (Pulled from: www.cdc.gov/vaccines/pubs/surv-manual/chpt10-pertussis.html)

NOTE: Many PCR tests are not able to detect the difference between *B. holmesii* and *B. pertussis*. However, *B. holmesii* is rare and generally does not cause outbreaks.

Culture:

Culture is considered the gold standard laboratory test and is the most specific of the laboratory tests for pertussis. However, fastidious growth requirements make B. pertussis difficult to culture. The yield of culture can be affected by specimen collection, transportation, and isolation techniques. Specimens from the posterior nasopharynx, not the throat, should be obtained using Dacron® or calcium alginate (not cotton) swabs. Isolation rates are highest during the first 3 to 4 weeks of illness (catarrhal and early paroxysmal stages). Cultures are variably positive (30%–50%) and may take as long as 2 weeks, so results may be too late for clinical usefulness. Cultures are less likely to be positive if performed later in the course of illness (more than 2 weeks after cough onset) or on specimens from persons who have received antibiotics or have been vaccinated. Since adolescents and adults have often been coughing for several weeks before they seek medical attention, it is often too late for culture to be useful. (Pulled from: www.cdc.gov/vaccines/pubs/pinkbook/downloads/pert.pdf)

OTHER TESTING METHODS:

NOTE: DFA and Serology are NOT considered reliable for confirmation of pertussis.

Serology

Serologic testing can be a useful tool for diagnosis of pertussis. However, standardized tests are not available making the results of commercially available tests sometimes difficult to interpret. As of March 2011, positive serology results from a private laboratory are not confirmatory for the purpose of reporting. A single-point serologic assay has been validated at the Massachusetts state public health laboratory for persons aged 11 years or older and is used for clinical diagnosis and reporting in that state only. A serologic test performed at CDC or at the Massachusetts state laboratory might be used to help investigate outbreaks. In states other than Massachusetts, cases meeting the clinical case definition that are serologically positive but not culture or PCR positive should be reported as probable cases. (Pulled from: www.cdc.gov/vaccines/pubs/surv-manual/chpt10-pertussis.html)

Direct Fluorescent Antibody (DFA):

Direct fluorescent antibody (DFA) testing of nasopharyngeal secretions is sometimes used to screen for pertussis. While DFA testing can provide rapid results to providers treating ill infants, these results are not confirmatory because the tests are of variable specificity. Since it is not a confirmatory test, DFA should be used alongside culture or PCR. Cases meeting the clinical case definition that are DFA positive but not culture or PCR positive should be reported as probable cases. (Pulled from: www.cdc.gov/vaccines/pubs/surv-manual/chpt10-pertussis.html)

IMMUNITY and VACCINE:

Immunity from disease:
Published data suggest that infection-acquired immunity against pertussis disease ranges from 7-10 years with one study suggesting 20 years. This variation can be attributed to the differences in levels of circulating *B. pertussis*, surveillance systems, and case definitions used.

Immunity from vaccination:
The primary series consists of four doses, usually administered at 2, 4, 6 and 15-18 months. Children who received all four primary doses before the 4th birthday should receive a fifth (booster) dose of DTaP before entering school. DTaP is not licensed for persons 7 years and older.

An adolescent and adult booster (Tdap) is licensed by the FDA and recommended for use by the ACIP. Please see the following website for the most up-to-date recommendations: www.cdc.gov/vaccines/pubs/ACIP-list.htm#tdap

DTaP

- Efficacy for Pertussis– 80-85%[ii]
- Immunity:
    - Pertussis vaccines are effective, but not perfect. They typically offer high levels of protection within the first 2 years of getting vaccinated, but then protection decreases over time. This is known as waning immunity. Similarly, natural infection may also only protect you for a few years.
    - In general, DTaP vaccines are 80-90% effective. Among kids who get all 5 doses of DTaP on schedule, effectiveness is very high within the year following the 5th dose – at least 9 out of 10 kids are fully protected. There is a modest decrease in effectiveness in each following year. About 7 out of 10 kids are fully protected 5 years after getting their last dose of DTaP and the other 3 out of 10 kids are partially protected – protecting against serious disease.
    - www.cdc.gov/pertussis/about/faqs.html

- Contraindications:
    - Please see the Vaccine Information Statement (VIS) for a comprehensive overview of the DTaP vaccine.

Tdap:

- Efficacy for Pertussis – 85%[iv]
- Immunity:
    - Our current estimate is that Tdap vaccination protects 7 out of 10 people who receive it. Since Tdap vaccines were only licensed in 2005, we don't yet have results on long-term vaccine protection. We're still working to understand how that protection declines over time or might differ based on which vaccine was received during early childhood (i.e., DTaP or DTP). CDC will be conducting an evaluation in collaboration with health departments in Washington and California to better understand how long Tdap vaccines protect from pertussis. The data from these evaluations will help guide discussions on how best to use vaccines to control pertussis. www.cdc.gov/pertussis/about/faqs.html
- Spacing of Tdap and Td:
    - The general recommendations are that Tdap can be given as close as two years after Td. However, if incidence in the community warrants a more immediate need for Tdap, Tdap can be given even closer to the last administration of Td, the patient will need to be informed that a more robust localized reaction may occur.
- Contraindications:
    - Please see the Vaccine Information Statement (VIS) for a comprehensive overview of the Tdap vaccine

ENDNOTES

[i] Red Book 2009
[ii] Pink Book 2012
[iii] VPD Surveillance Manual, 4th Edition, 2008, Chapter 10, Pertussis: 8 – 11
[iv] MMWR. *Preventing Tetanus, Diphtheria, and Pertussis Among Adolescents: Use of Tetanus Toxoid, Reduced Diphtheria Toxoid and Acellular Pertussis Vaccine*, 2006: 55(RR03); 1-34

MINNESOTA DEPARTMENT OF HEALTH

Food, Pools, and Lodging Services and Foodborne, Waterborne, Vectorborne, and Zoonotic Diseases Sections

PROCEDURES FOR RESPONDING TO FOODBORNE DISEASE OUTBREAKS IN FOOD SERVICE ESTABLISHMENTS IN MINNESOTA

July 2015

TABLE OF CONTENTS

I. Introduction

The Minnesota Department of Health (MDH) has developed a model for investigating foodborne illness using a centralized group of interviewers (Team Diarrhea) coordinated with local environmental health assessment of the establishment(s) involved in the outbreak. This approach allows MDH to rapidly respond to reports of outbreaks, standardize outbreak investigations, maintain a statewide database of foodborne diseases, and distribute information quickly and consistently.

When local agencies learn of a possible outbreak, they should notify the Minnesota Department of Health Foodborne, Waterborne, Vectorborne, and Zoonotic Diseases Section immediately to initiate an appropriate outbreak response.

During investigations, epidemiologists at MDH and local agencies work with a network of environmental health specialists and other health agencies to evaluate critical elements for the outbreak. Environmental health specialists focus on restaurant inspections, interviewing employees, and assessing food preparations and safety, while the central group of epidemiologists coordinate patron interviews, stool collections and testing, and data analysis.

Detailed and thorough outbreak reports are critical in assessing the burden of foodborne disease outbreaks in Minnesota and nationally. MDH is responsible for compiling and storing outbreak data and for summarizing outbreaks; however, local agencies are invited to write or contribute to all final reports. MDH has an outbreak report template available for agencies that choose to write their own final reports. All final reports should be faxed or mailed to MDH within a month of completion of the outbreak investigation. Minnesota outbreak reports are included in the annual Minnesota Department of Health Gastroenteritis Outbreak Summary. MDH forwards outbreak information to the Centers for Disease Control and Prevention for national archiving.

This model of foodborne disease outbreak investigation, with a core group of epidemiologists and an extensive network of environmental health specialists, local, state, and federal health agencies, and field epidemiologists distributed across the state provides Minnesotans with an efficient foodborne disease surveillance system.

II. Purpose of the Document

The purpose of this document is to enable both State and Local Environmental Health Agencies to work together more effectively during food and waterborne outbreak investigations to protect the health of the citizens of Minnesota. This document outlines procedures for responding to foodborne disease outbreaks in food service establishments (FSE) and delineates the roles of food safety staff by 1) identifying the activities necessary to recognize and investigate foodborne outbreaks; 2) assigning outbreak response roles and responsibilities; and 3) articulating mechanisms for communicating and sharing responsibilities.

Abbreviations used throughout this document include:

CDC – Centers for Disease Control and Prevention

CO – Communications Office, MDH

EFS – Epidemiology Field Services, MDH

FPLS – Food, Pools, and Lodging Services Section, MDH

FDA – United States Food and Drug Administration

FSE – Food Service Establishment

FWVZD – Foodborne, Waterborne, Vectorborne, and Zoonotic Diseases Section, MDH

IDEPC – Infectious Disease Epidemiology, Prevention and Control Division, MDH

LPH – Local Public Health

MDA – Minnesota Department of Agriculture

MDH – Minnesota Department of Health

PHL – Public Health Laboratory, MDH

PIO – Public Information Officer, MDH or LPH

USDA – United States Department of Agriculture

III. Identification of Outbreaks

The MDH Foodborne, Waterborne, Vectorborne, and Zoonotic Diseases Section (FWVZD) identifies foodborne outbreaks **(Appendix 4)** through:

- Calls from individuals reporting illness - often through the Minnesota Foodborne Illness Hotline **(Appendices 2 & 3)**
- Routine surveillance of laboratory isolates of reportable pathogens
- Reports by food service facilities of ill patrons
- Reports by health care providers of increased gastrointestinal illness
- Reports by local public health agencies of illness
- Reports from schools, day cares and health care facilities
- PulseNet
- Other sources

IV. Organizing Response to a Foodborne Disease Outbreak (Appendix 4)

FWVZD will notify the Food, Pools, and Lodging Section (FPLS) Outbreak Coordinator, local epidemiology, and the appropriate local environmental health department as necessary to arrange a conference call. The purpose of this conference call is to 1) identify the primary contacts, 2) plan the response activities, 3) make decisions about the investigation, and 4) identify agencies needing notification such as the Unites States Department of Agriculture

(USDA), the Food and Drug Administration (FDA), Centers for Disease Control and Prevention (CDC), and Minnesota Department of Agriculture (MDA). It is essential that this team of individuals communicate frequently to exchange information throughout the outbreak investigation.

If the outbreak falls within the jurisdiction of MDH FPLS, the Foodborne, Waterborne, Vectorborne, and Zoonotic Diseases Section (FWVZD) Manager will assign a principal epidemiologist to lead the outbreak investigation. The FPLS Outbreak Coordinator will assign an environmental health specialist(s) to be the field investigator at the implicated facility.

If the outbreak occurs in a delegated jurisdiction, the FWVZD Manager will assign a principal epidemiologist to lead the outbreak investigation. MDH will contact the responsible jurisdiction which must then assign an environmental health specialist(s) to be the field investigator.

If the outbreak occurs in a jurisdiction that has its own epidemiology capacity (such as Hennepin County, the cities of Bloomington and Richfield, Washington County, or Olmsted County), FWVZD will assign an epidemiologist to assist with communication and coordination. The local jurisdiction will assign a local epidemiologist and a field environmental health specialist(s).

V. Outbreak Investigation Process

A. Epidemiologic investigation

When there is evidence of an outbreak in a food service establishment, FWVZD staff or the local epidemiologist may conduct an epidemiologic investigation to help identify the cause of the outbreak, determine the spread of disease, and identify appropriate control measures. The MDH epidemiologist assigned to the outbreak investigation will immediately notify the FPLS Outbreak Coordinator by telephone (the FPLS Section Manager, or designated replacement, should be contacted in the absence of the FPLS Outbreak Coordinator). The MDH or local public health epidemiologist leading the investigation is responsible for:

1) **Communication**

   a) Scheduling a conference call with the appropriate environmental health staff, MDH Epidemiology, and PHL (as needed)

   b) Providing the following information during the call:

   - Name and address of the FSE
   - Number of known ill patrons
   - Suspected or confirmed etiology
   - How the outbreak was identified
   - Other relevant background information

2) **Laboratory coordination**

a) Obtaining a project number from MDH FWVZD for stool submissions

b) Providing stool kits for foodworkers and ill patrons as necessary

c) Disseminating the laboratory results to all relevant staff involved in the investigation, as well as the specimen submitters

3) **Conducting an epidemiological investigation**

a) Creating a case definition and creating interview forms and Tennessen warnings for patrons and foodworkers

b) Ensuring that patrons/event attendees are interviewed **(Appendices 2 & 7)**

c) Deciding whether to collect stool samples from cases and foodworkers

d) Delivering stool kits to and from cases **(Appendices 9 & 10)**

e) Statistical data analysis

f) Developing hypotheses about the cause and spread of disease

g) Confirming an outbreak using available data

h) Making recommendations about preventing the spread of disease

4) **Writing a final report summarizing the outbreak and investigation (Appendix 8)**

A summary report will be written for both confirmed and probable outbreaks.

a) The summary report should include all epidemiologic findings, laboratory test results, and environmental health findings specifically related to the cause or the extent of the outbreak.

b) The principal epidemiologist will draft a copy of the report within one month of the conclusion of an outbreak investigation and receipt of the draft EH report. The epidemiologist will forward the draft report to the environmental health specialist involved in the investigation for comments.

c) FWVZD will send the final report to the FPLS Outbreak Coordinator

B. Environmental health investigation (Appendix 4)

MDH FPLS, or the local environmental health agency, is responsible for:

1) **Facility assessment**

Environmental health staff will conduct an on-site assessment of the implicated FSE as soon as possible after the start of an epidemiologic investigation, preferably within 24 hours after being notified of the outbreak. The facility assessment will focus on **(Appendix 12)**:

a) Identifying and correcting critical violations that may have contributed to the outbreak **(Appendices 4 & 11)**

b) Collecting information about key aspects of the establishment's operation

c) Obtaining a list of all foodworkers and their phone numbers

d) Interviewing foodworkers for illness history and requesting stool samples, if necessary **(Appendices 5 & 6)**

e) Evaluating foodworker work history and job duties

f) Assessing management oversight

g) Obtaining customer names, reservation lists, or credit card receipts for case/control finding

h) Obtaining menus

i) Collecting food samples or embargoing food, if necessary

2) **Coordinating a meeting with the FSE management**

If necessary, the environmental health specialist will coordinate a meeting or conference call with the management of the facility. When agreed upon, the principal epidemiologist and other appropriate staff may participate in person or via conference call. The purpose of the meeting is to explain the status of the investigation, and make detailed recommendations regarding operations to the facility's management. The FSE will be informed of media requests and all participants will develop consistent messages for the media and the public.

3) **Interviewing food workers when appropriate (Appendices 6 & 7)**

a) Environmental health staff ensure that all foodworkers are interviewed using a standardized questionnaire. The epidemiologist leading the investigation is responsible for providing the interview form to environmental health specialists who will complete the interviews. The standardized questionnaire will include appropriate Tennessen warnings, including asking foodworkers' permission to share findings with FSE management, and include questions about:

- Work history or schedule during the identified critical time period
- Job tasks and responsibilities
- Illness history
- Recent illness among household members
- Other establishments where employees work

b) Conducting a review of foodworker illness records

4) **Coordinating Stool Testing of Foodworkers (Appendix 5)**

The environmental health specialist is responsible for coordinating with the principal epidemiologist for submission of foodworker stool specimens to the PHL. The principal epidemiologist will communicate foodworker test results to the environmental health specialist, the individual foodworkers and the FSE management when appropriate. To ensure compliance with foodworker interviews, sometimes a deadline may need to be established with the restaurant. Employees that have not completed an interview by this deadline cannot work until they are interviewed.

5) **Closing and reopening a Food Service Establishment involved in an outbreak**

The licensing jurisdiction has the authority and responsibility for closing a FSE during an outbreak investigation if they feel it is warranted. The epidemiologist will provide advice regarding the prevention of disease transmission from a FSE implicated in an outbreak, and issue employee work restrictions when necessary. If closure orders are issued, a copy of the orders should be faxed to the epidemiologist as soon as possible after issuance. The decision to reopen a FSE that was closed because of an outbreak must be reached by consensus.

6) **Writing Final Reports (Appendix 8)**

The environmental health specialist will give the principal epidemiologist a written report summarizing the environmental health findings related to the cause of the outbreak within two weeks of the conclusion of the environmental health investigation. The environmental health specialist is responsible for sending a copy of the final outbreak report to the food service establishment, if requested.

C. Laboratory investigation

The appropriate section (Clinical Laboratory or Environmental Laboratory) of the PHL will coordinate its investigative response activities with FWVZD, EFS and environmental health agency. The roles and responsibilities of PHL include:

- Making recommendations for proper collection of specimens
- Recommending appropriate transport conditions for specimens
- Making recommendations for testing strategies when the etiologic agent is unknown
- Assisting in the interpretation of laboratory results
- Notifying FWVZD of test results of cases and food workers

VI. Information Exchange

A. Communication between MDH/LPH and the FSE

The environmental health specialist will be the main point of contact with the FSE. All communications to the FSE regarding the outbreak will take into account epidemiologic and laboratory information discovered during the investigation.

B. Communication between Epidemiology and Environmental Health

The principal epidemiologist and the environmental health specialist are expected to remain in regular communication with one another throughout the investigation.

VII. Food Product Recall

FWVZD is responsible for coordinating tracebacks with MDA, FDA, USDA, and CDC, as appropriate. Environmental Health will assist by obtaining pertinent information from the FSE.

VIII. Communications

A. Response to media inquiries

Inquiries from the media regarding an outbreak will be referred to the MDH Communications Office (CO) as well as the local Public Information Officer (PIO) if the outbreak is in a delegated jurisdiction. The CO, in collaboration with staff from FWVZD and FPLS, will coordinate the development of media messages relating to the outbreak.

The environmental health specialist will have primary responsibility for communicating with FSE management regarding any anticipated contact with the media about the outbreak. The principal epidemiologist and the CO may assist the environmental health specialist in providing such notification. Information provided to the FSE will include:

- Current status of the outbreak
- An explanation of the legal obligations of MDH/LPH with regard to the handling of public information
- Available information detailing how the outbreak is likely to be handled by the media
- A delineation of responsibility for responding to media inquiries
- A consistent message that can be used by MDH and the FSE in responding to the media

B. Response to legal inquiries

Legal inquiries regarding an outbreak will be referred to the MDH Epidemiology Field Services or to the epidemiologist working on the investigation, if it is known at the time of the inquiry. EFS should contact EH to verify all materials are included in the file.

C. Public announcement or proactive notification of media regarding an outbreak

The decision to proactively notify the public about an outbreak will be made by IDEPC management, Environmental Health management, LPH (if in a delegated jurisdiction) and the Commissioner of Health in consultation with the principal epidemiologist and the environmental health specialist. The CO will coordinate news conferences, development and distribution of news releases, and other vehicles for notifying the public about an outbreak if they are deemed appropriate. In general, the public will be notified about an outbreak only when such notification is necessary to 1) alert individuals who may have been exposed to a foodborne illness to seek medical attention or take other protective measures, 2) inform individuals who may be at risk of exposure, or who could expose others, to take appropriate steps to prevent the transmission of illness, and 3) find additional cases in order to appropriately characterize the outbreak.

IX. Data Maintenance

FWVZD and LPH will maintain paper records and electronic databases for all outbreaks investigated in the state. The MDH epidemiologist will ensure the electronic record includes all information requested on CDC's outbreak report form. These data are entered into CDC's secure web-based Electronic Foodborne Outbreak Reporting System, and transmitted to CDC in real-time for national storage and comparison. In addition, FWVZD will compile and publish a Gastroenteritis Outbreak Summary for each calendar year.

X. Follow-Up MDH Activities

For selected investigations, FWVZD and FPLS (and other agencies as appropriate) will meet to discuss the lessons learned from the outbreak investigation and opportunities for improvement. Situations in which this may happen include:

- A breakdown in the process
- Any deviation from protocol
- New or unique situations
- Periodic verification or self-evaluation

APPENDIX 1 - OUTBREAK DEFINITIONS

Confirmed Foodborne Outbreaks

A confirmed foodborne disease outbreak is defined as an incident in which two or more persons experience a similar illness after ingestion of a common food or meal; and epidemiologic evaluation implicates the meal or food as the source of illness. Confirmed outbreaks may or may not be laboratory-confirmed.

Confirmed outbreaks may be classified as:

1. *Laboratory-Confirmed Agent:* Outbreaks in which laboratory evidence of a specific etiologic agent is obtained
2. *Epidemiologically Defined Agent:* Outbreaks in which the clinical and epidemiologic evidence defines a likely agent, but laboratory confirmation is not obtained
3. *Outbreak of Undetermined Etiology:* Outbreaks in which laboratory confirmation is not obtained and clinical and epidemiologic evidence cannot define a likely agent

Probable Foodborne Outbreaks

A probable foodborne disease outbreak is defined as an incident in which two or more persons experience a similar illness after ingestion of a common food or meal, and a specific food or meal is suspected but person-to-person transmission or other exposures cannot be ruled out.

Confirmed and Probable Waterborne Outbreaks

Waterborne outbreaks are similar to foodborne outbreaks, except that epidemiologic analysis implicates water as the source of illness. Waterborne outbreaks may be associated with drinking water or with recreational water.

Outbreaks with Other or Unknown Routes of Transmission

These outbreaks are defined as two or more cases of illness related by time and place in which an epidemiologic evaluation suggests either person-to-person transmission occurred, or a vehicle other than food or water (e.g., animal contact) is identified. This category also includes outbreaks for which the route of transmission could not be determined.

APPENDIX 2 - FOODBORNE ILLNESS COMPLAINT FORM

Retain privacy

Foodborne Illness Report
Minnesota Department of Health
Phone: (651) 201-5414 Fax: (651) 201-5082

Stool kit delivered ☐
Daily ☐

Complaint date: ___/___/___ Hotline call: ☐ How you got #_____ Tennessen: ☐

Agency: _____ Reporter: _____

First Name: _____ Last Name: _____ Age: ____ ☐ Female ☐ Male

Address: _____ Zip: _____ Email: _____

Home phone: (____)_____ Work phone: (____)_____ Cell: (____)_____

Establishment that the complainant suspects: _____

Number of persons exposed: _____ Number ill: _____

Did complainant call the establishment?: ☐Y ☐N If yes, who did they speak with: _____

**If a retail food product is suspected, please fill out page 4 (Retail Food Product Complaint) in addition to the 4-day food history*

ILLNESS HISTORY Illness Onset: ___/___/___ Time: _____ Recovery: ___/___/___ Time: _____

Vomiting ☐Y ☐N Onset: ___/___/___ Time: _____ Recovery: ___/___/___ Time: _____

Diarrhea ☐Y ☐N Onset: ___/___/___ Time: _____ Recovery: ___/___/___ Time: _____

# of stools per 24-hr. period (max): ____ Cramps ☐Y ☐N Fever ☐Y ☐N (temp: ____) Bloody stools ☐Y ☐N

Other symptoms: _____ Visited health care provider ☐Y ☐N

If yes, name and location: _____ Date of visit: ___/___/___

Provider requested stool sample ☐Y ☐N If yes, date stool submitted: ___/___/___ Hospitalized ☐Y ☐N

FOOD HISTORY

If only one person is ill or if all ill persons live in same household, complete the entire four-day food history.
If more than one person is ill and they live in different households, record only the common meals.

Meal Time	Date: ___/___/___ (work backward starting with onset date)		Hours to Illness Onset
Brk: _____	location: _____	food/drinks: _____	_____
		_____	
Lun: _____	location: _____	food/drinks: _____	_____
		_____	
Sup: _____	location: _____	food/drinks: _____	_____
		_____	
Other: _____	location: _____	food/drinks: _____	_____

Meal Time | Date: ___/___/___ | Hours to Illness Onset

Brk: ______ location: __________________ food/drinks: __________________________ ______

____

Lun: ______ location: __________________ food/drinks: __________________________ ______

____

Sup: ______ location: __________________ food/drinks: __________________________ ______

____

Other: ______ location: __________________ food/drinks: __________________________ ______

Meal Time | Date: ___/___/___ | Hours to Illness Onset

Brk: ______ location: __________________ food/drinks: __________________________ ______

____

Lun: ______ location: __________________ food/drinks: __________________________ ______

____

Sup: ______ location: __________________ food/drinks: __________________________ ______

____

Other: ______ location: __________________ food/drinks: __________________________ ______

Meal Time | Date: ___/___/___ | Hours to Illness Onset

Brk: ______ location: __________________ food/drinks: __________________________ ______

____

Lun: ______ location: __________________ food/drinks: __________________________ ______

____

Sup: ______ location: __________________ food/drinks: __________________________ ______

____

Other: ______ location: __________________ food/drinks: __________________________ ______

Complainant occupation: ______________________ Daycare exposure: Y N

Have you been swimming in the past 2 weeks: Y N If yes, where__________________ Date: ___/___/___

Did you drink any well water in the past 2 weeks: Y N If yes, where ______________________

Any ill household members in the last week: Y N If yes, who__________________ Date: ___/___/___

AGENCIES NOTIFIED ☐ MDH-EHS ☐ MDH-District Office ☐ MN Dept of Ag ☐ FDA ☐ USDA

☐ Local Agencies: ____

Comments ____

HISTORY OF OTHERS ILL Original Complainant's Name:_____

First name:_____ Last name:_____ Age:____

Address:_____ Phone:_____

Illness Onset: ___/___/___ Time:_____ Recovery: ___/___/___ Time:_____

Vomiting ☐Y ☐N Onset:___/___/___ Time:_____ Recovery:___/___/___ Time:_____

Diarrhea ☐Y ☐N Onset ___/___/___ Time:_____ Recovery:___/___/___ Time:_____

# of stools per 24-hr. period (max):____ Cramps ☐Y ☐N Fever ☐Y ☐N (temp:____) Bloody stools ☐Y ☐N

Other symptoms:_____ Incubation period from common event (hrs):_____

Foods eaten at common event:_____

_____

First name:_____ Last name:_____ Age:____

Address:_____ Phone:_____

Illness Onset: ___/___/___ Time:_____ Recovery: ___/___/___ Time:_____

Vomiting ☐Y ☐N Onset:___/___/___ Time:_____ Recovery:___/___/___ Time:_____

Diarrhea ☐Y ☐N Onset ___/___/___ Time:_____ Recovery:___/___/___ Time:_____

# of stools per 24-hr. period (max):____ Cramps ☐Y ☐N Fever ☐Y ☐N (temp:____) Bloody stools ☐Y ☐N

Other symptoms:_____ Incubation period from common event (hrs):_____

Foods eaten at common event:_____

_____

First name:_____ Last name:_____ Age:____

Address:_____ Phone:_____

Illness Onset: ___/___/___ Time:_____ Recovery: ___/___/___ Time:_____

Vomiting ☐Y ☐N Onset:___/___/___ Time:_____ Recovery:___/___/___ Time:_____

Diarrhea ☐Y ☐N Onset ___/___/___ Time:_____ Recovery:___/___/___ Time:_____

# of stools per 24-hr. period (max):____ Cramps ☐Y ☐N Fever ☐Y ☐N (temp:____) Bloody stools ☐Y ☐N

Other symptoms:_____ Incubation period from common event (hrs):_____

Foods eaten at common event:_____

_____

_____

Original Complainant's Name:_____

RETAIL FOOD PRODUCT COMPLAINT *(please fill in as much information as you can)*

Name of product (please be specific):_____

Brand of product _____

Manufacturer and/or distributor information (name and address):_____

_____

Container type, size and weight (18 oz. plastic bottle, 1 lb. paper carton, etc.):_____

USDA establishment number (if a packaged meat product):_____

UPC code (12-digit bar code):_____

Product/Lot/Best if Used By Date (BIUB) code: _____

_____

_____

Purchase location (name of store):_____

Address of purchase location:_____

Purchase date:_____

Does consumer still have the product or other containers of the same product?:_____

_____

Other information:_____

_____

APPENDIX 3 - KEY PHONE NUMBERS

FOODBORNE, WATERBORNE, VECTORBORNE, AND ZOONOTIC DISEASES SECTION (FWVZD):

651-201-5414 or 877-676-5414

Foodborne illness reporting hotline: Toll Free (out state) 1-877-366-3455; (local) 651-201-5655

Foodborne, Waterborne, Vectorborne, and Zoonotic Disease Unit Manager

Kirk Smith: 651-201-5240

FOOD, POOLS, AND LODGING SERVICES (FPLS):

Metro daytime: 651-201-4500

Office of Emergency Preparedness 24/7 emergency pager: 651-201-5700 or 651-201-5735 (after hours)

FPLS Section Manager

Steven Diaz: 651-201-3983 (Office), 651-775-7516 (Cell)

FPLS Outbreak Coordinator

Kim Carlton: 651- 201-4511 (Office), 651-283-8929 (Cell)

MDH EPIDEMIOLOGY FIELD SERVICES (EFS):

651-201-5414 or 877-676-5414

MDH COMMUNICATIONS OFFICE:

651-201-4989

MDH EXECUTIVE OFFICE:

651-201-5000

MINNESOTA STATE DUTY OFFICER:

Metro: 651-649-5451 (24 hour)

Statewide: 800-422-0798 (24 hour)

APPENDIX 4 - INVESTIGATION GUIDELINES

FWVZD Foodborne Disease Outbreak Investigation Guidelines

Minnesota Department of Health

Phone: (651) 201-5414 Fax: (651) 201-5082

MDH Procedure for Conducting an Environmental Investigation of Foodborne Disease Outbreaks

A. Introduction

A systematic environmental investigation is a critical aspect of foodborne illness outbreak investigations. The environmental investigation aims to:

1. Identify and eliminate the factors that could lead to further transmission;
2. Clarify the nature and mechanism of disease transmission; and
3. Provide information needed to design effective strategies to prevent future outbreaks.

The environmental investigation should be initiated as soon as notice of a suspect foodborne disease outbreak is received, but no later than 24 hours after being notified. The investigation of a suspect foodborne disease outbreak is different from a routine inspection. Such an investigation requires a systematic assessment of critical food handling procedures, focusing as much as possible on procedures suggested by preliminary epidemiological and/or laboratory information. The environmental investigation will be coordinated by an Environmental Health Specialist/Sanitarian with involvement of laboratory and epidemiology staff. Any information gathered during the environmental investigation will be done in a manner that is consistent with the Data Practices Act.

B. Information Sharing

EH personnel involved in the environmental investigation of the implicated FSE will be the main point of contact between the FSE and MDH. Regular communication with FWVZD/LPH staff throughout the investigation is necessary to know of the status of the epidemiologic and laboratory investigations. In addition, the following persons should be updated on the progress of the environmental investigation on an on-going basis:

1. FPLS Outbreak Coordinator, if the outbreak is in MDH jurisdiction

2. Your supervisor
3. The principal epidemiologist (epidemiologist working on the outbreak)

Note: Media requests for information should be directed to the MDH communications office or the LPH PIO.

C. Conduction the Investigation

1. **Conference Call**

In most cases, a conference call between FWVZD and FPLS/LPH staff will be held during the initial phase of foodborne disease outbreak investigations. Pay special attention to any working hypotheses that are developed during the conference call. If a conference call is not held or is delayed, consult key staff from each program (FWVZD, FPLS, and PHL) regarding likely explanations for the outbreak, sample/specimen collection options and strategies, and enforcement options. Key information obtained during this call might include:

a) Demographic information about cases
b) Illness history for cases
c) Number of cases
d) Food consumption history
e) Name and address of implicated establishment
f) How the outbreak was identified
g) Information about any suspect food vehicles
h) Information regarding the suspected agent(s)
i) Recent inspection reports (covering at least 2 inspections)

This information is helpful in developing hypotheses regarding the likely agent, the likely vehicle, how and where the vehicle became contaminated and could suggest actions needed to reduce or eliminate the risk of further transmission.

2. **Contact the Establishment**

Contact the implicated establishment and request that the manager(s) or senior staff member(s) be available for a meeting with the on-site investigation team at the facility at a specified time. Also, when necessary, request information about:

a) Menus
b) Customer receipts or credit card receipts
c) Employee work schedules
d) Employee illness

In some situations, the facility's management may be instructed to fax/e-mail information to designated individuals in FWVZD or LPH.

3. **Select Tools for On-site Investigation**

Certain items are needed to facilitate collection of information and/or samples during an outbreak. It may be helpful to prepare an outbreak "kit" containing the following items for the on-site investigation:

a) MDH foodborne outbreak investigation manual

b) Foodworker interview forms

c) Fact sheets about suspected agents

d) Information about handwashing and foodworker illness

e) Sterile sampling containers

f) Specimen containers (stool kits)

g) Appropriate media (transport or enrichment)

h) Disinfection and sterilizing agents

i) Cooler and ice packs

j) Sterile implements for sample collection (e.g. scoops, spoons, tongs, tongue depressors, swabs)

k) Telephone/pager numbers of key MDH/LPH personnel (including after hours contact numbers)

l) Thermometers and data loggers

m) pH meter

n) Water activity meter

o) Enforcement guide

p) Camera

D. On-site Investigation

1. **Management Meeting**

Upon arriving at the implicated establishment introduce yourself to the FSE management and explain the purpose of your visit.

a) Provide an overview of the investigation process, including a brief description of the roles of FWVZD, LPH, and PHL

b) Answer questions and provide details regarding what is known about the outbreak up to that point.

<u>Note:</u> Under no circumstances should protected information, such as a complainant's name be shared with establishment personnel (consult the data practices guide or your supervisor for further information).

c) Request management's assistance in:

i. Arranging employee interviews

ii. Providing records for review (food temperature logs, employee illness records, food purchasing records, etc)

iii. Providing workspace for field team where possible

iv. Arranging for sample/specimen collection and submission to PHL, if needed

2. **Assess Management Control and Operation**

a) Ask about the training and experience of the manager

b) Identify the Person in Charge (PIC) at key times suggested by the initial outbreak information

c) Obtain information about the operation such as: days and times of operation, number of staff, number of shifts, staffing needs, etc

d) Ask about the duties performed by each staff member (including manager). In particular, ask about the food handling responsibilities of all staff.

e) Ask about the establishment's policy regarding ill workers and ask to view the employee illness logs

3. **Conduct Hazard Analysis (Appendix 12)**

   a) Obtain flow charts of preparation procedures for potentially hazardous foods (PHF's), focusing on items suggested by initial outbreak information

   b) Identify critical control points (CCP) and likely hazards (consult annex 5 of 2001 FDA Food Code for further information)

   c) Evaluate the establishment's monitoring procedures for CCP's by reviewing records, interviewing staff, or observing practices

   d) Assess whether critical limits for PHF's are/were met by reviewing records, interviewing staff, taking measurements, and/or observing food preparation activities

   e) Determine if there is an appropriate mechanism for taking corrective actions when critical limits are exceeded. This can be accomplished by reviewing the establishments records, interviewing staff, or observation.

   Note: This approach to hazard analysis is applicable in all outbreaks linked to FSE's. An analysis based on formal HACCP principles should be attempted even in establishments that are not required to have HACCP plans.

4. **Review Sanitation Standard Operating Procedures (SSOP's)**

   a) Observe establishment layout and food flow (look for opportunities for cross-contamination)

   b) Check cleanliness of equipment and utensils

   c) Check cleanliness of floors, walls, and ceilings

   d) Obtain cleaning schedules and procedures (note the use of high pressure sprayers)

   e) Review sanitization procedures (type of sanitizer, appropriateness of use, appropriateness of concentration used)

   f) Evaluate water and wastewater systems

5. **Collect Environmental and Stool Samples**

   a) Collect samples of food remaining from suspect meal (if available and only after consultation with FWVZD and PHL)

   b) Collect foods prepared in the same way as the suspect food, if none of the suspect food is available (only after consultation with FWVZD and PHL)

   c) Label samples and establish chain of custody

   d) Store samples in a manner appropriate for the agent under suspicion

   e) Arrange for collection and submission of stool samples

   f) Arrange delivery of samples to PHL as soon as possible but no later than 12 hours after collection

Note: Use appropriate sampling techniques and collect enough sample to aid identification of suspect agent (contact the PHL for further information).

6. **Enforcement**

   Enforcement actions against a FSE implicated in a foodborne disease outbreak should focus on operations and/behaviors that are the likely cause of the outbreak. All observed critical violations must be noted and orders issued for immediate correction of each (see Minnesota Food Code for definition of critical violations). Enforcement actions may include:

   a) Closing the facility;
   b) Issuing a fine;
   c) Excluding or restricting ill workers;
   d) Issuing embargo orders;
   e) Condemning food; and/or
   f) Issuing correction orders.

   Note: Some of the above enforcement actions require special considerations to ensure the desired effect. As a general rule, review all enforcement decisions with your supervisor before taking action.

7. **Closing a FSE**

   Closing a FSE may be necessary to eliminate the risk for further transmission of a foodborne disease agent. The recommendation to close a FSE should only be made after carefully assessing the following factors with your supervisor:

   a) Evidence of ongoing transmission or insufficient information regarding whether transmission has been arrested
   b) The overall sanitary status of the establishment (including the availability of safe drinking water and adequate waste disposal facilities)
   c) The establishment's record related to the correction of critical violations
   d) The availability of a qualified food service manager(s)
   e) The number and type of critical violations observed
   f) The likely impact on food safety of mandatory staff exclusions and/or restrictions
   g) The agent involved in the outbreak
   h) The population at risk

   Note: Orders to close a FSE must be communicated to management in writing. The orders must specify when the facility is to be closed, why the facility is being closed, and the conditions that must be met before the facility is allowed to re-open.

8. **Re-opening a FSE**

   Once it is determined by re-inspection that all conditions specified in the closure orders are met and after consultation with FWVZD, the FSE must be permitted to re-open. Permission to re-open must be granted in writing.

9. **Report**

Upon completing the environmental investigation prepare a summary report containing the following headings and information:

a) Background
   i. Name and address of the establishment
   ii. Number of ill patrons
   iii. The suspect etiologic agent
   iv. How the outbreak was identified
   v. How and when FPLS was notified

b) Findings
   i. Critical violations and repeat critical violations
   ii. Food/surface testing results
   iii. Unusual food preparation procedures
   iv. Employee illness information
   v. Any other information that could have a bearing on the outbreak

c) Actions
   i. Steps taken to confirm the cause of the outbreak
   ii. Steps taken to curtail the outbreak (with dates)
   iii. Education

d) Conclusions

   Offer some explanation of why the outbreak occurred (based on environmental, epidemiological, and/or laboratory findings).

Note: Copies of summary report and any other documents pertaining to the environmental investigation such as photographs, orders, or video recordings must be submitted to the principal epidemiologist two weeks after completing the environmental investigation. A copy of the final report may be submitted to the FSE, plaintiff's attorneys, or other eligible parties if requested in writing (see data practices policies for further information).

10. Wrap-up (Lessons learned)

Each outbreak provides an opportunity to evaluate the effectiveness of our efforts to prevent foodborne disease outbreaks. At the conclusion of the outbreak investigation, you may be asked to collaborate with FWVZD, LPH and PHL staff to identify any lessons learned, and develop fact sheets and other educational materials that could be used in to train public health staff and food service workers.

APPENDIX 5 - FOODWORKER CONSENT FORM

Foodworker Consent Form
Outbreak Investigation

The Minnesota Department of Health, in conjunction with ***LOCAL PUBLIC HEALTH AGENCY NAME***, is conducting an investigation of a possible outbreak of foodborne illness that may be associated with ***RESTAURANT NAME***. It is important for public health officials to determine the source of the outbreak so that transmission can be stopped. We can learn more about how transmission is occurring through interviewing persons who work in food service and may be asking that food service employees provide stool specimens. If any samples are collected, they will be tested for bacteria and viral pathogens at no charge to you. You will be provided with results once they are available. In addition we would like to ask you questions about any recent illnesses that you may have had and your work duties in food service at ***RESTAURANT NAME***. If you have been ill or test positive for any pathogen that can be transmitted by food, it is important that you not return to work in food service for 72 hours after your recovery.

Results of the stool tests and any other information collected from you are considered private data. Only public health officials from the Minnesota Department of Health who are directly involved in investigating this outbreak will have access to this information collected from you. In addition, because it may be important that you not return to work until you recover (if you have been ill), we are requesting your permission to share this information with management staff at ***RESTAURANT NAME***.

You are not required to participate in this investigation. However, the information that you provide will improve our understanding of how this outbreak occurred and will help us to prevent any further transmission.

Do you have any questions? If all of your questions have been answered to your satisfaction, do you consent to providing a stool specimen to the Minnesota Department of Health if requested, and answering a brief questionnaire?

____ YES, I consent to providing a stool specimen

____ YES, I consent to answering a brief questionnaire

____ YES, the information about me obtained by the Minnesota Department of Health may be shared with management staff at ***RESTAURANT NAME***.

Print name: _____ Date_____

Signature:_____

Interviewer Signature_____ Date_____

APPENDIX 6 - FOODWORKER INTERVIEW FORM

MINNESOTA DEPARTMENT OF HEALTH
FOOD SERVICE EMPLOYEE QUESTIONNAIRE

Tennessen: _____ Interview date: ___/___/___
Interviewed conducted by: _____

Employee's Name: _____ Age ____ ☐ Female ☐ Male

Address: _____ Phone: (____)_____

Job title/description: _____

Have you been ill with any of the following symptoms any time since ***FILL IN DATE***? Yes No

Onset date:___/___/___ time (2400 hrs):_____ Recovery date:___/___/___ time (2400 hrs):_____

☐ Nausea ☐ Vomiting (onset: ___/___) ☐ Cramps ☐ Fever ☐ Blood in stool

☐ Diarrhea (# stools/24 hrs: ____)(onset: ___/___) ☐ Other _____

Did you submit a stool culture? Yes No Would you be willing to provide a stool culture? Yes No

Did you work while experiencing diarrhea or vomiting? Y N If yes, when?_____

If no, on what date did you return to work?_____

Please list work schedule and all duties performed from ***FILL IN DATE*** to ***FILL IN DATE***:

Date	Day of Week	Hours	Duties Performed
___/___/___	M T W Th F S Su	_____ - _____	_____
___/___/___	M T W Th F S Su	_____ - _____	_____
___/___/___	M T W Th F S Su	_____ - _____	_____
___/___/___	M T W Th F S Su	_____ - _____	_____
___/___/___	M T W Th F S Su	_____ - _____	_____

What foods/beverages did you eat at the restaurant:_____

_____

_____

Do you work at any other food service facilities? If so, where and how often:_____

Have any members of your household been ill with diarrhea or vomiting since *FILL IN DATE*? Yes No

What symptoms did they have? ☐ Nausea ☐ Vomiting (onset: ___/___) ☐ Cramps

☐ Diarrhea (# stools/24 hrs: ____) (diarrhea onset: ___/___) ☐ Fever ☐ Blood in stool

Were any stool samples collected on ill family member(s)? Y N Results:_____

APPENDIX 7 - PATRON TENNESSEN FORM

Generic Patron Tennessen

Outbreak name: _____

Principal investigator: _____

Date: _____

We are investigating some reports of possible foodborne illness and are interviewing people who ate at RESTAURANT NAME on DATE. It is not yet known whether the reported illnesses are associated with this event. To assist in our investigation, RESTAURANT NAME has given us your name as a possible patron.

Would you be willing to answer a few questions about your food consumption at RESTAURANT NAME and any symptoms of illness you may have had?

For your protection, before beginning an interview, we are required to give you the following information regarding your participation in this investigation and your right to privacy:

We are collecting this information to determine what the cause of this reported illness may be. All information we collect about your health is private; the only persons who will have access to this information will be public health staff from the Minnesota Department of Health and staff from local public health agencies who work on this investigation. Under no conditions will your name be released to anyone else without your permission. You are under no obligation to participate in this investigation. There is no penalty if you choose not to participate in this investigation. However your participation may help us identify an outbreak of foodborne illness, identify its cause, and prevent further illness.

APPENDIX 8 - GUIDANCE FOR WRITING FOOD AND WATERBORNE OUTBREAK REPORTS

The final report will be entered into the statewide outbreak database and included in the state's annual summary of food and waterborne disease outbreaks. All reports should include the following information:

Background

- Date the investigating agency was notified of the outbreak
- Description of the initial report made to the investigating agency
- Date of the event
- Date of initiation of the investigation

Methods

- Who provided information about event attendees (names and/or phone numbers)
- Other agencies that were notified of the outbreak and investigation
- The number of people who attended the event
- The case definition used for the outbreak (the standard definition is vomiting or diarrhea, $\geq$ 3 stools in a 24-hour period, following the event)
- The number of people interviewed (at least one control should be interviewed per case, and ideally two or more controls should be interviewed per case)
- The number of stools collected for testing
- The pathogens that were tested for in the stool specimens
- Relevant environmental health measures implemented

Results

- The number of people interviewed who met the case definition
- The number of people interviewed with gastrointestinal symptoms who did not meet the case definition
- The percentage of interviewed cases with each of the following symptoms: diarrhea ($\geq$ 3 stools in a 24-hour period), vomiting, fever, bloody stools, and abdominal cramps. Other symptoms may be listed as appropriate.
- The median incubation period and incubation range
- The median duration of illness and duration range
- Hospitalization status of cases
- Results of the stool testing (including PFGE results, if applicable)
- Food items or events that were statistically associated with illness

- The odds ratio(s), p-values, and confidence intervals of the implicated item(s)
- Results of foodworker interviews (the number of ill foodworkers, any corrective actions taken)
- Results of foodworker stool cultures
- All relevant information found in the environmental investigation

Conclusion

- Etiologic agent
- Implicated vehicle(s)
- Discussion of route of transmission
- Contributing factors to contamination and/or transmission (discuss all plausible sources of contamination when necessary)
- Defense of conclusion, if needed (for example, how do the symptoms, incubation period, and duration suggest a particular pathogen?)

APPENDIX 9 - STOOL SAMPLE INSTRUCTIONS

INSTRUCTIONS FOR SUBMITTING A STOOL SAMPLE TO MDH

1. Fill out the top portion of lab slip (white area).

2. Legibly write first and last name on the vial.

3. Place collection container on toilet seat as shown.
   Deposit stool in tissue portion of collection device.

4. Unscrew orange lid on vial.
   Use attached scoop to fill vial with stool until fluid reaches the red line.
   Replace the lid on the orange vial.

5. Remove tissue portion of collection device from cardboard portion.
   Flush tissue portion and dispose of cardboard in trash.

6. Place vial into clear plastic biohazard bag along with the absorbent cloth.
   Seal clear plastic biohazard bag.
   Wash hands thoroughly with soap and water.

7. Place sealed clear plastic biohazard bag in to the white biohazard envelope. Also place the completed lab slip in the white biohazard envelope. Seal the envelope.

8. Place white biohazard envelope(s) in the box. Close the box according to the instructions on the box. Place the box in the mailbox.

"Note: Please ignore the instruction booklet that is enclosed with the Protocult™ Collection Device. There are no restrictions due to red meat consumption or non-prescription pain medications.

Please call_____at _____ if you have any questions. Thank You.

APPENDIX 10 - STOOL SAMPLE INSTRUCTIONS - SPANISH

INSTRUCTIONS FOR SUBMITTING A STOOL SAMPLE TO MDH

INSTRUCCIONES PARA MANDAR UNA MUESTRA DE EXCREMENTO A DEPARTAMENTO DE SALUD PUBLICA DE MINNESOTA

1. Fill out the top portion of lab slip (white area).
   Por favor, complete la porción blanca del formulario.
   Ponga la fecha de colección de la muestra.

2. Legibly write first and last name on the vial.
   Escriba claramente su nombre y apellido en el frasco.

3. Place collection container on toilet seat as shown.
   Deposit stool in tissue portion of collection container.
   Coloque el dispositivo de papel en el asiento del inodoro/lavabo.
   Deposite su excremento en la parte de papel.

4. Unscrew orange lid on vial.
   Use attached scoop to fill vial with stool until fluid reaches the red line.
   Replace the lid on the orange vial.
   Abra la tapa anaranjada. Use la cucharita en la parte de adentro de la tapa para traspasar el excremento al frasco. Llene el frasco hasta que el líquido llegue a la raya roja. Póngale firmemente la tapa al frasco.

5. Remove tissue portion of collection container from cardboard portion.
   Flush tissue portion and dispose of cardboard in trash.
   Remueva la parte del papel del dispositivo, y descártelo en el inodoro/lavabo. Tire la parte de cartón en la basura.

6. Place vial into clear plastic biohazard bag along with the absorbent cloth.
   Seal clear plastic biohazard bag. Wash hands thoroughly with soap and water.
   Ponga el frasco en la bolsa de plástico que dice "biohazard". Cierre la bolsa. Lávese las manos con agua y jabón.

7. Place sealed clear plastic biohazard bag in to the white biohazard envelope.
   Also place the completed lab slip in the white biohazard envelope. Seal the envelope.
   Ponga la bolsa de plástico adentro del sobre blanco. También ponga el formulario adentro del sobre. Cierre el sobre.

8. Place white biohazard envelope(s) in the box. Close the box according to the instructions on the box. Place the box in the mailbox.
   Ponga el sobre adentro de la caja. Cierre la caja. Ponga la caja en el correo (no tiene que ponerle estampillas o pagar para mandarlo).

Por favor llame a_____ al teléfono _____ si tiene preguntas. Muchas Gracias.

APPENDIX 11 – REPORTABLE FOODBORNE & WATERBORNE ILLNESSES

Amebiasis (*Entamoeba histolytica/dispar*)
Botulism (*Clostridium botulinum*)
Campylobacteriosis (*Campylobacter* spp.)
Cholera (*Vibrio cholerae*)
Cryptosporidiosis (*Cryptosporidium* spp.)
Cycolosporiasis (*Cyclospora* spp.)
Enteric *E. coli* infections
Enterobacter sakazakii
Giardiasis (*Giardia lamblia*)
Hemolytic uremic syndrome
Hepatitis (all primary viral types including A, B, C, D, and E)
Listeriosis (*Listeria monocytogenes*)
Salmonellosis, including typhoid (*Salmonella* spp.)
Shigellosis (*Shigella* spp.)
Trichinosis (*Trichinella spiralis*)
Typhoid (via salmonellosis)
Vibrio spp.
Yersiniosis, enteric (*Yersinia* spp.)

APPENDIX 12 – GENERAL GUIDELINES FOR FOCUSING AN ENVIRONMENTAL HEALTH INVESTIGATION BASED ON A SUSPECTED ETIOLOGY

The recommendations given below are guidelines for the environmental health investigation of a potential foodborne outbreak based on the suspected etiology. The etiology can often be surmised by the symptoms and incubation periods of the initial complainants, even if an etiology hasn't been laboratory-confirmed **(Appendix 13)**. These are general guidelines and are by no means absolute. Each investigation should be conducted on a case-by-case basis with Environmental Health and Epidemiology working together to determine the focus of the investigation.

Norovirus

Areas of focus:

1. All employees should be interviewed as soon as possible **(See Appendix 6)**
2. Review the employee illness log and make a copy if possible
3. Ask about foodworker exclusion policies. During the investigation period the manager should ask each foodworker every day if they have experienced vomiting or diarrhea within the past 72 hours. Foodworkers who have had vomiting or diarrhea MUST BE EXCLUDED FROM THE RESTAURANT FOR 72 HOURS AFTER RESOLUTION OF SYMPTOMS.
4. The EH assessment should focus on handwashing, bare hand contact, and cleaning and sanitizing of equipment
5. Take note of ready-to-eat food items that may have been prepared by ill foodworkers during the time period in question and request that the manager discard any that may potentially be contaminated

Salmonella

Areas of focus:

1. Review the employee illness log and make a copy if possible
2. Foodworkers will likely need to be interviewed. They may be required to submit stool specimens and have two negative stool results before they return to work.
3. The EH assessment should pay particular attention to food preparation practices which may lead to cross-contamination, especially from raw meat, poultry or eggs. Also keep an eye out for inadequate cooking of meat, poultry, or egg products.
4. Pay particular attention to proper handwashing in the facility
5. If there is a possibility that a food item came into the facility already contaminated, copies of invoices may need to be obtained

***Bacterial Intoxications (e.g. – those caused by C. perfringens* or *B. cereus*)**

Areas of focus:

1. Ask detailed questions about food preparation practices of all food items in question - specifically heating, cooling, and reheating procedures, the length of time the food items were hot-held, etc. Meat and gravy products and rice are often implicated in these types of outbreaks.
2. If food items similar to those in question are currently being prepared, make note of relevant preparation practices (e.g. - the temperature of food items in the cooler, hot-holding temperatures, or cooling procedures such as ice baths).

Outbreaks where there is not enough information to determine a suspected pathogen, or outbreaks where other pathogens are suspected (e.g. - *E. coli* O157:H7 or Hepatitis A) will require detailed discussions between Environmental Health and Epidemiology before the investigation proceeds.

APPENDIX 13 – DATA PRACTICES ACT RELEASE FORM

MINNESOTA GOVERNMENT
DATA PRACTICES ACT RELEASE FORM

I, _____, understand that under Minnesota Statutes Section 13.3805 (2003) any epidemiologic information maintained by the Minnesota Department of Health, from which I may be identified, is classified as private data, that is, accessible only to me or those whom I designate.

Understanding my rights under the Minnesota Government Data Practices Act, I authorize the Commissioner of Health, her agents, and attorneys, to make accessible for review and/or to photocopy and send all records about me concerning

_____

_____

to: (condition, diagnosis, treatment, incident, outbreak, etc)

_____

(Representative, Agency, Attorney, etc.)

_____

(Address) (City) (State) (Zip)

The person or entity to whom I am releasing this information will use it now and in the future to

_____

_____

I understand that copies of my records may be released to the above-named party before I have had an opportunity to review either the records or the Department of Health's evaluation of the records.

I save and hold harmless the Commissioner of Health, her agents and her attorneys for revealing or releasing these records.

These records may not be re-released without a separate and specific authorization. This authorization expires 60 days from the date of my signature.

If the data subject is a minor or deceased, I attest that I am authorized to sign on the minor's or the decedent's behalf.

_____ _____

Name of subject/guardian, decedent Guardian's or representative's relationship to subject

_____

Address

_____ _____

Signature of subject/guardian, representative Date

Witness _____

Name

APPENDIX 14 - FOODBORNE ILLNESSES

Foodborne Illnesses (Bacterial)

Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment
Bacillus anthracis	2 days to weeks	Nausea, vomiting, malaise, bloody diarrhea, acute abdominal pain.	Weeks	Insufficiently cooked contaminated meat.	Blood.	Penicillin is first choice for naturally acquired gastrointestinal anthrax. Ciprofloxacin is second option.
Bacillus cereus (diarrheal toxin)	10-16 hrs	Abdominal cramps, watery diarrhea, nausea.	24-48 hours	Meats, stews, gravies, vanilla sauce.	Testing not necessary, self-limiting (consider testing food and stool for toxin in outbreaks).	Supportive care
Bacillus cereus (preformed enterotoxin)	1-6 hrs	Sudden onset of severe nausea and vomiting. Diarrhea may be present.	24 hrs	Improperly refrigerated cooked and fried rice, meats.	Normally a clinical diagnosis. Clinical laboratories do not routinely identify this organism. If indicated, send stool and food specimens to reference laboratory for culture and toxin identification.	Supportive care.
Brucella abortus, B. melitensis, and *B. suis*	7-21 days	Fever, chills, sweating, weakness, headache, muscle and joint pain, diarrhea. Bloody stools during acute phase.	Weeks	Raw milk, goat cheese made from unpasteurized milk, contaminated meats.	Blood culture and positive serology.	*Acute:* Rifampin and doxycycline daily for ≥6 weeks. Infections with complications require combination therapy with rifampin, tetracycline and an aminoglycoside.
Campylobacter jejuni	2-5 days	Diarrhea, cramps, fever, and vomiting; diarrhea may be bloody.	2-10 days	Raw and undercooked poultry, unpasteurized milk, contaminated water.	Routine stool culture. *Campylobacter* requires special media and incubation at 42°C to grow.	Supportive care. For severe cases, antibiotics such as erythromycin and quinolones may be indicated early in the diarrheal disease. Guillain-Barré syndrome can be a sequela.
Clostridium botulinum – children and adults (preformed toxin)	12-72 hrs	Vomiting, diarrhea, blurred vision, diplopia, dysphagia, and descending muscle weakness.	Variable (from days to months). Can be complicated by respiratory failure and death.	Home-canned foods with a low acid content, improperly canned commercial foods, home-canned or fermented fish, herb-infused oils, baked potatoes in aluminum foil, cheese sauce, bottled garlic, foods held warm for extended periods of time (eg, in a warm oven).	Stool, serum, and food can be tested for toxin. Stool and food can also be cultured for the organism. These tests can be performed in some State Health Department Laboratories and CDC.	Supportive care. Botulism antitoxin is helpful if given early in the course of the illness. Contact the state health department. The 24-hour number for state health departments to call is 770 488-7100
Clostridium botulinum – infants	3-30 days	In infants <12 months, lethargy, weakness, poor feeding, constipation, hypotonia, poor head control, poor gag and sucking reflex.	Variable	Honey, home-canned vegetables and fruits, corn syrup	Stool, serum, and food can be tested for toxin. Stool and food can also be cultured for the organism. These tests can be performed at some State Health Department laboratories and CDC.	Supportive care. Botulism immune globulin can be obtained from the Infant Botulism Prevention Program, Health and Human Services, California at 510 540-2646. Botulinum antitoxin is generally not recommended for infants.
Clostridium perfringens toxin	8-16 hrs	Watery diarrhea, nausea, abdominal cramps, fever is rare.	24-48 hrs	Meats, poultry, gravy, dried or precooked foods, time- and/or temperature-abused food.	Stools can be tested for enterotoxin and cultured for organism. Because *Clostridium perfringens* can normally be found in stool, quantitative cultures must be done.	Supportive care. Antibiotics not indicated.
Enterohemorrhagic *E. coli* (EHEC) including *E. coli* O157:H7 and other Shiga toxin-producing *E. coli* (STEC)	1-8 days	Severe diarrhea that is often bloody, abdominal pain and vomiting. Usually, little or no fever is present. More common in children <4 years.	5-10 days.	Undercooked beef especially hamburger, unpasteurized milk and juice, raw fruits and vegetables (e.g. sprouts), salami (rarely), and contaminated water.	Stool culture: *E. coli* O157:H7 requires special media to grow. If *E. coli* O157:H7 is suspected, specific testing must be requested. Shiga toxin testing may be done using commercial kits; positive isolates should be forwarded to public health laboratories for confirmation and serotyping.	Supportive care, monitor renal function, hemoglobin, and platelets closely. *E. coli* O157:H7 infection is also associated with hemolytic uremic syndrome (HUS), which can cause lifelong complications. Studies indicate that antibiotics may promote the development of HUS.
Enterotoxigenic *E. coli* (ETEC)	1-3 days	Watery diarrhea, abdominal cramps, some vomiting.	3->7 days.	Water or food contaminated with human feces.	Stool culture. ETEC requires special laboratory techniques for identification. If suspected, must request a specific testing.	Supportive care. Antibiotics are rarely needed except in severe cases. Recommended antibiotics include TMP-SMX and quinolones.
Listeria monocytogenes	9-48 hrs for gastrointestinal symptoms, 2-6 weeks for invasive disease	Fever, muscle aches, and nausea or diarrhea. Pregnant women may have mild flu-like illness, and infection can lead to premature delivery or stillbirth. Elderly or immunocompromised patients may have bacteremia or meningitis.	Variable	Fresh soft cheeses, unpasteurized or inadequately pasteurized milk, ready-to-eat deli meats, hot dogs.	Blood or cerebrospinal fluid cultures. Asymptomatic fecal carriage occurs, therefore, stool culture usually not helpful. Antibody to listeriolysin O may be helpful to identify outbreak-associated cases.	Supportive care and antibiotics; intravenous ampicillin, penicillin, or TMP-SMX are recommended for invasive disease.
	At birth and infancy	Infants infected from mother at risk for sepsis or meningitis.				

Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment
Salmonella spp.	1-3 days	Diarrhea, fever, abdominal cramps, vomiting. *S.* Typhi and *S.* Paratyphi produce typhoid with insidious onset characterized by fever, headache, constipation, malaise, chills, and myalgia; diarrhea is uncommon, and vomiting is usually not severe.	4-7 days	Contaminated eggs, poultry, unpasteurized milk or juice, cheese, contaminated raw fruits and vegetables (alfalfa sprouts, melons). *S.* Typhi epidemics are often related to fecal contamination of water supplies or street-vended foods.	Routine stool cultures.	Supportive care. Other than for *S.* Typhi and *S.* Paratyphi, antibiotics are not indicated unless there is extra-intestinal spread, or the risk of extra-intestinal spread, of the infection. Consider ampicillin, gentamicin, TMP-SMX, or quinolones if indicated. A vaccine exists for *S.* Typhi.
Shigella spp.	24-48 hrs	Abdominal cramps, fever, and diarrhea. Stools may contain blood and mucus.	4-7 days	Food or water contaminated with human fecal material. Usually person-to-person spread, fecal-oral transmission. Ready-to-eat foods touched by infected food workers, e.g. raw vegetables, salads, sandwiches.	Routine stool cultures.	Supportive care. TMP-SMX recommended in the US if organism is susceptible; nalidixic acid or other quinolones may be indicated if organism is resistant, especially in developing countries.
Staphylococcus aureus (preformed enterotoxin)	1-6 hrs	Sudden onset of severe nausea and vomiting. Abdominal cramps. Diarrhea and fever may be present.	24-48 hrs	Unrefrigerated or improperly refrigerated meats, potato and egg salads, cream pastries.	Normally a clinical diagnosis. Stool, vomitus, and food can be tested for toxin and cultured if indicated.	Supportive care
Vibrio cholerae (toxin)	24-72 hrs	Profuse watery diarrhea and vomiting, which can lead to severe dehydration and death within hours.	3-7 days. Causes life-threatening dehydration.	Contaminated water, fish, shellfish, street-vended food, typically from Latin America or Asia.	Stool culture; *Vibrio cholerae* requires special media to grow. If *V. cholerae* is suspected, must request specific testing.	Supportive care with aggressive oral and intravenous rehydration. In cases of confirmed cholera, tetracycline or doxycycline is recommended for adults, and TMP-SMX for children (<8 years).
Vibrio parahaemolyticus	2-48 hrs	Watery diarrhea, abdominal cramps, nausea, vomiting.	2-5 days	Undercooked or raw seafood, such as fish, shellfish.	Stool cultures. *Vibrio parahaemolyticus* requires special media to grow. If *V. parahaemolyticus* is suspected, must request specific testing.	Supportive care. Antibiotics are recommended in severe cases: tetracycline, doxycycline, gentamicin, and cefotaxime.
Vibrio vulnificus	1-7 days	Vomiting, diarrhea, abdominal pain, bacteremia, and wound infections. More common in the immunocompromised, or in patients with chronic liver disease (presenting with bullous skin lesions). Can be fatal in patients with liver disease and the immunocompromised.	2-8 days	Undercooked or raw shellfish, especially oysters; other contaminated seafood, and open wounds exposed to sea water.	Stool, wound, or blood cultures. *Vibrio vulnificus* requires special media to grow. If *V. vulnificus* is suspected, must request specific testing.	Supportive care and antibiotics; tetracycline, doxycycline, and ceftazidime are recommended.
Yersinia enterocolytica and *Y. pseudotuberculosis*	24-48 hrs	Appendicitis-like symptoms (diarrhea and vomiting, fever, and abdominal pain) occur primarily in older children and young adults. May have a scarlatiniform rash with *Y. pseudotuberculosis*.	1-3 weeks, usually self-limiting	Undercooked pork, unpasteurized milk, tofu, contaminated water. Infection has occurred in infants whose caregivers handled chitterlings.	Stool, vomitus or blood culture. *Yersinia* requires special media to grow. If suspected, must request specific testing. Serology is available in research and reference laboratories.	Supportive care. If septicemia or other invasive disease occurs, antibiotic therapy with gentamicin or cefotaxime (doxycycline and ciprofloxacin also effective).

Please call the state health department for more information on specific foodborne illnesses. These telephone numbers are available at: http://www.cdc.gov/nmwr/international/reltes.html.

See the reverse side for information hotlines and list of notifiable diseases.

Foodborne Illnesses (Parasitic)

Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment
Angiostrongylus cantonensis	1 week to ≥ 1 month	Severe headaches, nausea, vomiting, neck stiffness, paresthesias, hyperesthesias, seizures, and other neurologic abnormalities.	Several weeks to several months	Raw or undercooked intermediate hosts (eg, snails or slugs), infected paratenic (transport) hosts (eg, crabs, fresh water shrimp), fresh produce contaminated with intermediate or transport hosts.	Examination of CSF for elevated pressure, protein, leukocytes, and eosinophils; serologic testing using ELISA to detect antibodies to *Angiostrongylus cantonensis*.	Supportive care. Repeat lumbar punctures and use of corticosteroid therapy may be used for more severely ill patients.
Cryptosporidium	2-10 days	Diarrhea (usually watery), stomach cramps, upset stomach, slight fever.	May be remitting and relapsing over weeks to months	Any uncooked food or food contaminated by an ill food handler after cooking, drinking water.	Request specific examination of the stool for *Cryptosporidium*. May need to examine water or food.	Supportive care, self-limited. If severe consider paromomycin for 7 days. For children aged 1-11 years, consider nitazoxanide for 3 days.
Cyclospora cayetanensis	1-14 days, usually at least 1 week	Diarrhea (usually watery), loss of appetite, substantial loss of weight, stomach cramps, nausea, vomiting, fatigue.	May be remitting and relapsing over weeks to months	Various types of fresh produce (imported berries, lettuce).	Request specific examination of the stool for *Cyclospora*. May need to examine water or food.	TMP/SMX for 7 days.
Entamoeba histolytica	2-3 days to 1-4 weeks	Diarrhea (often bloody), frequent bowel movements, lower abdominal pain.	May be protracted (several weeks to several months)	Any uncooked food or food contaminated by an ill food handler after cooking, drinking water.	Examination of stool for cysts and parasites – may need at least 3 samples. Serology for long-term infections.	Metronidazole and a luminal agent (iodoquinol or paromomycin).
Giardia lamblia	1-2 weeks	Diarrhea, stomach cramps, gas.	Days to weeks	Any uncooked food or food contaminated by an ill food handler after cooking, drinking water.	Examination of stool for ova and parasites – may need at least 3 samples.	Metronidazole.
Toxoplasma gondii	5-23 days	Generally asymptomatic, 20% may develop cervical lymphadenopathy and/or a flu-like illness. In immunocompromised patients: central nervous system (CNS) disease, myocarditis, or pneumonitis is often seen.	Months	Accidental ingestion of contaminated substances (eg, soil contaminated with cat feces on fruits and vegetables), raw or partly cooked meat (especially pork, lamb, or venison).	Isolation of parasites from blood or other body fluids; observation of parasites in patient specimens via microscopy or histology. Detection of organisms is rare; serology (reference laboratory needed) can be a useful adjunct in diagnosing toxoplasmosis. However, IgM antibodies may persist for 6-18 months and thus may not necessarily indicate recent infection. PCR of bodily fluids. For congenital infection: isolation of *T. gondii* from placenta, umbilical cord, or infant blood. PCR of white blood cells, CSF, or amniotic fluid, or IgM and IgA serology performed by a reference laboratory.	Asymptomatic healthy, but infected, persons do not require treatment. Spiramycin or pyrimethamine plus sulfadiazine may be used for pregnant women. Pyrimethamine plus sulfadiazine may be used for immunocompromised persons, in specific cases. Pyrimethamine plus sulfadiazine (with or without steroids) may be given for ocular disease when indicated. Folinic acid is given with pyrimethamine plus sulfadiazine to counteract bone marrow suppression.
Toxoplasma gondii (congenital infection)	In infants at birth	Treatment of the mother may reduce severity and/or incidence of congenital infection. Most infected infants have few symptoms at birth. Later they will generally develop signs of congenital toxoplasmosis (mental retardation, severely impaired eyesight, cerebral palsy, seizures) unless the infection is treated.		Passed from mother (who acquired acute infection during pregnancy) to child.		
Trichinella spiralis	1-2 days for initial symptoms; others begin 2-8 weeks after infection	Acute: nausea, diarrhea, vomiting, fatigue, fever, abdominal discomfort followed by muscle soreness, weakness, and occasional cardiac and neurologic complications.	Months	Raw or undercooked contaminated meat, usually pork or wild game meat, eg, bear or moose.	Positive serology or demonstration of larvae via muscle biopsy. Increase in eosinophils.	Supportive care. + mebendazole or albendazole.
Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment

Please call the state health department for more information on specific foodborne illnesses.
Those telephone numbers are available at: http://www.cdc.gov/nczved/dfbmd/relres.html

See the reverse side for information hotlines and list of notifiable diseases.

Foodborne Illnesses (Viral)

Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment
Hepatitis A	28 days average (15-50 days)	Diarrhea, dark urine, jaundice, and flu-like symptoms, i.e., fever, headache, nausea, and abdominal pain.	Variable, 2 weeks-3 months	Shellfish harvested from contaminated waters, raw produce, contaminated drinking water, uncooked foods and cooked foods that are not reheated after contact with infected food handler.	Increase in ALT, bilirubin. Positive IgM and anti-hepatitis A antibodies.	Supportive care. Prevention with immunization.
Noroviruses (and other caliciviruses)	12-48 hrs	Nausea, vomiting, abdominal cramping, diarrhea, fever, myalgia, and some headache. Diarrhea is more prevalent in adults and vomiting is more prevalent in children.	12-60 hrs	Shellfish, fecally contaminated foods, ready-to-eat foods touched by infected food workers (salads, sandwiches, ice, cookies, fruit).	Routine RT-PCR and EM on fresh unpreserved stool samples. Clinical diagnosis, negative bacterial cultures. Stool is negative for WBCs.	Supportive care such as rehydration. Good hygiene.
Rotavirus	1-3 days	Vomiting, watery diarrhea, low-grade fever. Temporary lactose intolerance may occur. Infants and children, elderly, and immunocompromised are especially vulnerable.	4-8 days	Fecally contaminated foods. Ready-to-eat foods touched by infected food workers (salads, fruits).	Identification of virus in stool via immunoassay.	Supportive care. Severe diarrhea may require fluid and electrolyte replacement.
Other viral agents (astroviruses, adenoviruses, parvoviruses)	10-70 hrs	Nausea, vomiting, diarrhea, malaise, abdominal pain, headache, fever.	2-9 days	Fecally contaminated foods. Ready-to-eat foods touched by infected food workers. Some shellfish.	Identification of the virus in early acute stool samples. Serology. Commercial ELISA kits are now available for adenoviruses and astroviruses.	Supportive care, usually mild, self-limiting. Good hygiene.
Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment

Please call the state health department for more information on specific foodborne illnesses. These telephone numbers are available at: http://www.cdc.gov/mmwr/international/relres.html.

See the reverse side for information hotlines and list of notifiable diseases.

Foodborne Illnesses (Non-infectious)

Etiology	Incubation Period	Signs and Symptoms	Duration of Illness	Associated Foods	Laboratory Testing	Treatment
Antimony	5 min-8 hrs, usually <1 hr	Vomiting, metallic taste.	Usually self-limited	Metallic container.	Identification of metal in beverage or food.	Supportive care.
Arsenic	Few hrs	Vomiting, colic, diarrhea	Several days	Contaminated food.	Urine. May cause eosinophilia.	Gastric lavage, BAL (dimercaprol).
Cadmium	5 min-8 hrs, usually <1 hr	Nausea, vomiting, myalgia, increase in salivation, stomach pain.	Usually self-limited	Seafood, oysters, clams, lobster, grains, peanuts.	Identification of metal in food.	Supportive care.
Ciguatera fish poisoning (ciguatera toxin).	2-6 hrs	GI: abdominal pain, nausea, vomiting, diarrhea.	Days to weeks to months	A variety of large reef fish. Grouper, red snapper, amberjack, and barracuda (most common).	Radioassay for toxin in fish or a consistent history.	Supportive care, IV mannitol. Children more vulnerable.
	3 hrs	Neurologic: paresthesias, reversal of hot or cold, pain, weakness.				
	2-5 days	Cardiovascular: bradycardia, hypotension, increase in T wave abnormalities.				
Copper	5 min-8 hrs, usually <1 hr	Nausea, vomiting, blue or green vomitus.	Usually self-limited	Metallic container.	Identification of metal in beverage or food.	Supportive care.
Mercury	1 week or longer	Numbness, weakness of legs, spastic paralysis, impaired vision, blindness, coma. Pregnant women and the developing fetus are especially vulnerable.	May be protracted	Fish exposed to organic mercury, grains treated with mercury fungicides.	Analysis of blood, hair.	Supportive care.
Mushroom toxins, short-acting (muscimol, muscarine, psilocybin, coprius artemetaris, ibotenic acid)	< 2 hrs	Vomiting, diarrhea, confusion, visual disturbance, salivation, diaphoresis, hallucinations, disulfiram-like reaction, confusion, visual disturbance.	Self-limited	Wild mushrooms (cooking may not destroy these toxins).	Typical syndrome and mushroom identified or demonstration of the toxin.	Supportive care.
Mushroom toxin, long-acting (amanitin)	4-8 hrs diarrhea; 24-48 hrs liver failure	Diarrhea, abdominal cramps, leading to hepatic and renal failure.	Often fatal	Mushrooms.	Typical syndrome and mushroom identified and/or demonstration of the toxin.	Supportive care; life-threatening, may need life support.
Nitrite poisoning	1-2 hrs	Nausea, vomiting, cyanosis, headache, dizziness, weakness, loss of consciousness, chocolate brown colored blood	Usually self-limited	Cured meats, any contaminated foods, spinach exposed to excessive nitrification.	Analysis of the food, blood.	Supportive care, methylene blue.
Pesticides (organophosphates or carbamates)	Few min to few hrs	Nausea, vomiting, abdominal cramps, diarrhea, headache, nervousness, blurred vision, twitching, convulsions, salivation and miosis	Usually self-limited	Any contaminated food.	Analysis of the food, blood.	Atropine; 2-PAM (Pralidoxime) is used when atropine is not able to control symptoms and is rarely necessary in carbamate poisoning.
Puffer fish (tetrodotoxin)	< 30 min	Paresthesias, vomiting, diarrhea, abdominal pain, ascending paralysis, respiratory failure.	Death usually in 4-6 hrs	Puffer fish.	Detection of tetrodotoxin in fish.	Life-threatening, may need respiratory support.

Scombroid (histamine)	1 min-5 hrs	Flushing, rash, burning sensation of skin, mouth and throat, dizziness, urticaria, paresthesias.	5-6 hrs	Fish: bluefin, tuna, skipjack, mackerel, marlin, escolar and mahi mahi.	Demonstration of histamine in food or clinical diagnosis.	Supportive care, antihistamines.
Shellfish toxins (diarrheic, neurotoxic, amnesic)	Diarrheic shellfish poisoning (DSP) – 30 min to 2 hrs	Nausea, vomiting, diarrhea, and abdominal pain accompanied by chills, headache, and fever.	Hrs to 2-3 days	A variety of shellfish, primarily mussels, oysters, scallops, and shellfish from the Florida coast and the Gulf of Mexico.	Detection of the toxin in shellfish; high-pressure liquid chromatography.	Supportive care, generally self-limiting. Elderly are especially sensitive to ASP.
	Neurotoxic shellfish poisoning (NSP) – few min to hrs	Tingling and numbness of lips, tongue, and throat, muscular aches, dizziness, reversal of the sensations of hot and cold, diarrhea, and vomiting.				
	Amnesic shellfish poisoning (ASP) – 24-48 hrs	Vomiting, diarrhea, abdominal pain and neurological problems such as confusion, memory loss, disorientation, seizure, coma.				
Shellfish toxins (paralytic shellfish poisoning)	30 min-3 hrs	Diarrhea, nausea, vomiting leading to paresthesias of mouth, lips, weakness, dysphasia, dysphonia, respiratory paralysis.	Days	Scallops, mussels, clams, cockles.	Detection of toxin in food or water where fish are located; high-pressure liquid chromatography.	Life-threatening, may need respiratory support.
Sodium fluoride	Few min to 2 hrs	Salty or soapy taste, numbness of mouth, vomiting, diarrhea, dilated pupils, spasms, pallor, shock, collapse.	Usually self-limited	Dry foods (such as dry milk, flour, baking powder, cake mixes) contaminated with sodium fluoride-containing insecticides and rodenticides.	Testing of vomitus or gastric washings. Analysis of the food.	Supportive care.
Thallium	Few hrs	Nausea, vomiting, diarrhea, painful paresthesias, motor polyneuropathy, hair loss.	Several days	Contaminated food.	Urine, hair.	Supportive care.
Tin	5 min-8 hrs, usually <1 hr	Nausea, vomiting, diarrhea.	Usually self-limited	Metallic container.	Analysis of the food.	Supportive care.
Vomitoxin	Few min to 3 hrs	Nausea, headache, abdominal pain, vomiting.	Usually self-limited	Grains such as wheat, corn, barley.	Analysis of the food.	Supportive care.
Zinc	Few hrs	Stomach cramps, nausea, vomiting, diarrhea, myalgias.	Usually self-limited	Metallic container.	Analysis of the food, blood and feces, saliva or urine.	Supportive care.
Etiology	**Incubation Period**	**Signs and Symptoms**	**Duration of Illness**	**Associated Foods**	**Laboratory Testing**	**Treatment**

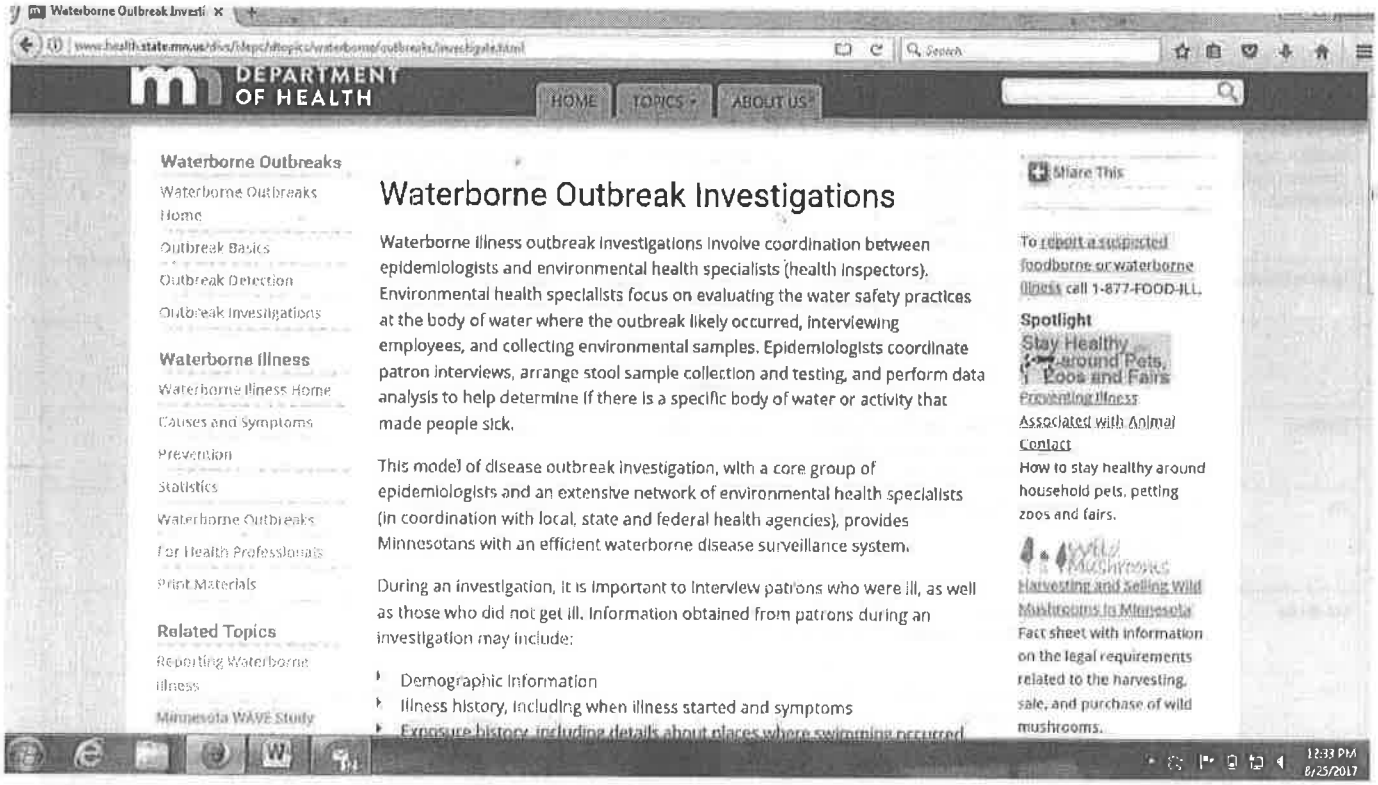
Please call the state health department for more information on specific foodborne illnesses. These telephone numbers are available at http://www.cdc.gov/mmwr/international/relres.html.

See the reverse side for information hotlines and list of notifiable diseases.

Screenshot of MDH Waterborne Outbreak Investigation Protocols

As of 8/25/2017

http://www.health.state.mn.us/divs/idepc/dtopics/waterborne/outbreaks/investigate.html



Meeker-McLeod-Sibley
Tuberculosis Prevention and Control Policy

February 2010
Revised April 2013
Revised November 2016

TABLE OF CONTENTS

Tuberculosis Prevent and Control Policy
MMS CHS

MEEKER-McLEOD-SIBLEY CHS

Tuberculosis Prevention and Control Policy

Purpose

The purpose of Meeker-McLeod-Sibley's TB control policy is to provide for early identification and reduction of risk in transmission of tuberculosis to MMS CHS employees, clients, and contacts. It is also intended to comply with Minnesota Department of Health (MDH), Centers for Disease Control and Prevention, and other federal guidelines for preventing the transmission of Mycobacterium tuberculosis. TB investigations and Direct Observation Therapy will be conducted with direction from MDH.

Policy/Procedure

1. Establish and maintain a Tuberculosis Infection Control team. An identified public health employee will have supervisory responsibility for the TB IC Program.

2. Conduct a TB Risk Assessment. Update periodically. See **Appendix A**.

3. Develop a written TB Infection Control program which includes the following items.

4. Perform TB screening for HCWs. See **Appendix B.**

5. Conduct TB investigations for latent and/or active TB referrals in the agency setting and in Meeker, McLeod, and Sibley Counties according to MDH criteria. See **Appendix C.**

6. Follow procedures for handling persons with suspected or confirmed active TB disease in the home care and office setting. See **Appendix D.**

7. Conduct a problem evaluation, as needed. See **Appendix E.**

8. Perform and document initial and ongoing HCW training & education about TB. See **Appendix F.**

9. Implement a respiratory-protection program. See **Appendix G.**

TB Risk Assessment

1) Complete a systematic, structured evaluation of a HC setting's risk for transmission of TB.

2) Do an initial risk assessment and periodically update it – minimum every 3 years

3) Use CDC's TB Risk Assessment Worksheet (Appendix B of the TB IC guidelines). The worksheet and MDH's recommendations for completing it are available at www.health.state.mn.us/divs/idepc/diseases/tb/riskassess.html (See Attachment 1)

4) Use Risk Assessment results to determine the setting's "TB risk classification"

TB Risk Classifications:

Low: Persons with active TB disease are not expected to be encountered and exposure to TB is unlikely.

Medium: HCW will or might be exposed to persons with active TB disease or clinical specimens that might contain *Mycobacterium tuberculosis*.

Potential ongoing transmission: Evidence of person-to-person transmission of TB. This is a temporary classification. If this applies to your setting, please consult with MDH's TB Control Program at 651-201-5414.

Data collected or reviewed include:

- Number of TB cases that occur in the setting and the surrounding community in a given year.
- Which categories of employees you will include in your TB testing program
- Identify any areas within the setting that are at increased risk of TB transmission
- Your written TB IC plan
- Other pertinent information.

5) Keep TB Risk Assessment records on file for future reference.

6) Use the setting's TB risk classification to determine the frequency of HCW TB testing required.

Appendix B

TB screening for HCWs

1) All HCWs must receive baseline TB screening upon hire.

2) Two components of baseline TB screening:
   a. Testing for the presence of infection with *Mycobacterium tuberculosis* by administering either a two-step TST or a single TB blood test ***and***
   b. Assessing for current symptoms of active TB disease. If present, refer for medical evaluation before starting work. Do not wait for the TST result.
   c. Use "Baseline TB Screening Tool for Healthcare Workers" form. (See Attachment 2)

3) Serial TB testing for HCWs (sometimes called annual or ongoing TB testing) is done at regular intervals following baseline TB screening.

4) The need for and frequency of serial TB testing is based on the facility's TB risk classification.

5) Two components of serial TB screening:
   a. Testing for the presence of infection with *Mycobacterium tuberculosis* by administering either a TST or TB blood test ***and***
   b. Assessing for current symptoms of active TB disease. If present, refer for medical evaluation. Do not wait for the TST result.
   c. Note: 2-step TST is required for baseline testing only, not serial testing.

Setting risk classification	Frequency of serial testing for HCWs
Low	Serial testing not needed unless exposure occurs.
Medium	Serial testing should be performed annually.
Potential ongoing transmission	Consult with the MDH TB Control Program at 651-201-5414.

Guidance for the following **special situations** involving HCWs is available on the MDH website: http://www.health.state.mn.us/divs/idepc/diseases/tb/screenhcw.html#1

- Newly-identified +TST or TB blood test
- Written documentation of a previous + TST or TB blood test
- Verbal or undocumented history of a previous + TST/blood test
- Documented history of previous TB treatment
- HCWs with signs or symptoms of active TB Disease

- Pregnant HCWs
- HCWs whose TST or TB blood test becomes positive ("Conversions")
- HCWs with TST results between 5 and 9 mm of induration

Appendix B

- Students
- Volunteers
- HCWs with previous history of severe adverse reaction to TST
- HCWs who travel outside of the United States

6) Keep written documentation of all pertinent TB testing and evaluations in the employee's record.

7) HCWs should be excluded from the workplace if they have:
   a. Suspected or confirmed infectious active TB disease or
   b. A draining TB skin lesion.

8) HCWs with extrapulmonary TB disease usually do not need to be excluded from the workplace unless they also have TB of the respiratory tract.

9) HCWs should be allowed to return to work only when **all** the following criteria have been met:
   a. 3 consecutive AFB-negative sputum samples
   b. Responded to TB treatment
   c. Determined to be noninfectious by a knowledgeable and experienced physician

Appendix C

Public Health TB Investigation and Medication

1) Information regarding a positive TB skin test/and or acute disease may be received from MDH, physician or client presenting a prescription for TB medication to Public Health.

2) Complete the Tuberculosis Contact Investigation Report form utilizing the investigation form instructions. Contact Investigation forms and notices can be found at: http://www.health.state.mn.us/divs/idepc/diseases/tb/lphci.html#reports (See Attachment 3)

3) Report form is to be completed by a health care facility to provide a summary of any screening performed in their facility among staff and/or patients as a result of exposure to a pulmonary TB patient. Summary report form can be found at: http://www.health.state.mn.us/divs/idepc/diseases/tb/lphci.html#reports (See Attachment 4)

3) Medications for TB treatment are available from the Minnesota Department of Health (MDH). The MDH Tuberculosis (TB) Prevention and Control Program provides TB medications free of charge for persons with latent TB infection (LTBI) or active TB disease who reside in Minnesota. Treatment regimens using medications supplied by MDH must follow the Centers for Disease Control and Prevention/American Thoracic Society/Infectious Diseases Society of America guidelines for treatment of active TB disease or treatment of active TB disease.

LTBI (Latent Tuberculosis Infection) Treatment:

- To request medications for the treatment of LTBI, the clinician should contact the MDH TB Medications Coordinator at 651-201-5414 or 1-877-676-5414.

- The clinician will be asked to provide pertinent demographic and clinical information and a copy of the prescription(s).

- The completed LTBI Medication Request Form – (see attachment 5) may be faxed to 651-201-5500 or mailed to:

MDH TB Prevention and Control Program
Immunization, Tuberculosis and International Health Section
Minnesota Department of Health
P.O. Box 64975
St. Paul, MN 55164-0975

■ MDH (through its contracted pharmacy) will ship the patient's first month supply of LTBI medication to the designated clinic or local public health agency (or other health care provider licensed to administer medications) within 5 working days of

when the request form is received. If the form is incomplete or the request is not consistent with national LTBI treatment guidelines, the shipment may be delayed.

■ Complete the LTBI Medication Start Date Verification Form (see attachment 6) when the patient picks up the first bottle. The form is enclosed with the first shipment. Fax to 651-201-5500 or mail to the above address. After MDH receives confirmation that the patient has begun to pick up the medication, monthly shipments will continue until the regimen is complete, or until MDH is notified that treatment has been stopped or transferred.

■ The health care provider who receives the medications is responsible for monitoring the patient at least monthly for adverse reactions and for adherence to the regimen. A monitoring flow sheet (see attachment 6) is available from MDH to assist with this process.

Active Tuberculosis Treatment:

■To request medications for treatment of active TB disease, the clinician should contact the MDH TB Nurse Case Manager at 651-201-5414 or 1-877-676-5414. The clinician will be asked to provide pertinent clinical and demographic information and a copy of the prescription(s).

■ Medications will be sent monthly to the designated clinic, local public health agency, or other health care provider licensed to administer medications.

■ If a patient being treated for active TB disease stops therapy, fails to pick up medications, or if treatment is discontinued, please contact the MDH TB Nurse Case Manager immediately.

Additional information can be found about TB medications at http://www.health.state.mn.us/divs/idepc/diseases/tb/lphmeds.html

4) Provide patient and family education. Educational material can be found at http://www.health.state.mn.us/divs/idepc/diseases/tb/basics.html

Appendix D

Handling Suspicious or Known cases of TB in the Office, Home-based Health-care and Outreach Settings

1) Patients and household members should be educated regarding the importance of taking medications, respiratory hygiene and cough etiquette procedures, and proper medical evaluation.

2) If possible, postpone transporting patients with suspected or confirmed infectious TB disease until they are determined not to have TB disease or to be noninfectious.

3) Certain patients can be instructed to remain at home until they are determined not to have TB disease or to be noninfectious.

4) Do not perform cough-inducing or aerosol-generating procedures unless appropriate environmental controls are in place, or perform those procedures outside, if possible.

5) For HCWs entering the homes of patients with suspected or confirmed infectious TB disease, a N95 disposable respirator should be worn.

6) For HCWs transporting patients with suspected or confirmed infectious TB disease in a vehicle, a N95 disposable respirator should be worn.

7) If the patient has signs or symptoms of infectious TB disease (positive AFB sputum smear result), consider having the patient wear a surgical or procedure mask, if possible, during transport, in waiting areas, or when others are present.

Conduct a Problem Evaluation as needed

1) Conduct a problem evaluation if the following problems occur:

   - Higher-than-expected conversion rates.
   - Diagnosis of active TB disease in a HCW.
   - Suspected person-to-person transmission of TB.
   - Lapses in TB IC measures.

2) The problem evaluation includes:

   - Identifying factors that could have contributed to the problem.
   - Implementing interventions to correct the situation.
   - Evaluating effectiveness of interventions.

3) If you are investigating or evaluating a particular type of problem:

   - Call the MDH TB Program at 651-201-5414 to discuss in more detail

Appendix F

HCWs Education and Training on Tuberculosis

1) Conduct training about TB upon hire and annually thereafter. This will be done with the annual infectious disease in-service for all employed HCWs.

2) The content will be determined by the TB Infection control team supervisor in conjunction with the regional epidemiologist. This may vary annually depending on the setting's current risk classification and regional activity of TB disease

3) At a minimum education at hire and annually must include:

    a) hand washing techniques
    b) the need for and use of protective gloves, gowns, and masks
    c) disposal of contaminated materials and equipment, such as dressings, needles, syringes, and razor blades
    d) disinfecting reusable equipment
    e) disinfecting environmental surfaces

Suggested components of training are found at http://www.health.state.mn.us/divs/idepc/diseases/tb/education.html#hcp.

Appendix G

Respiratory Protection

N95 Respirators should be worn by:

1) All HCWs entering the home of a person with suspect or known TB.

2) All HCWs doing TB investigation on a suspect or known TB client face-to-face.

3) Any HCW in the office setting that is providing care or assisting a suspect or known TB client.

4) Persons present during cough-inducing or aerosol-generating procedures performed on clients with suspect or known TB disease.

5) Persons in other settings in which administrative and environmental controls probably will not protect them. Examples include persons who transport clients with suspect or known TB disease in vehicles (EMS vehicles, ambulances).

6) Refer to MMS CHS policy "Respiratory Protection Plan for Airborne Infectious Agents" for details regarding N95 Respirator fit testing, frequency of fit testing, use of respirators and education and training.

AFB	Acid-Fast Bacillus
CDC	Center for Disease Control
CHS	Community Health Services
EMS	Emergency Medical Services
HC	Health Care
HCW	Healthcare Worker
MDH	Minnesota Department of Health
MMS	Meeker, McLeod, Sibley
TB	Tuberculosis
TB IC	Tuberculosis Infection Control
TST	Tuberculin Skin Test

Appendix H

Acronyms

Meeker-McLeod-Sibley Community Health Services

Local Health Disaster Plan Guidance

For The Health and Medical Annex

To The Local Emergency Operations Plan

Attachment K

- MMS Call Down List

Meeker-McLeod-Sibley Community Health Services
24/7 Access Procedures

During office hours Meeker-McLeod-Sibley Community Health Services Administrator (MMS), Public Health Director or Emergency Preparedness Coordinator (EP) would be notified and begin the staff notification through Code Red, or calling tree process.

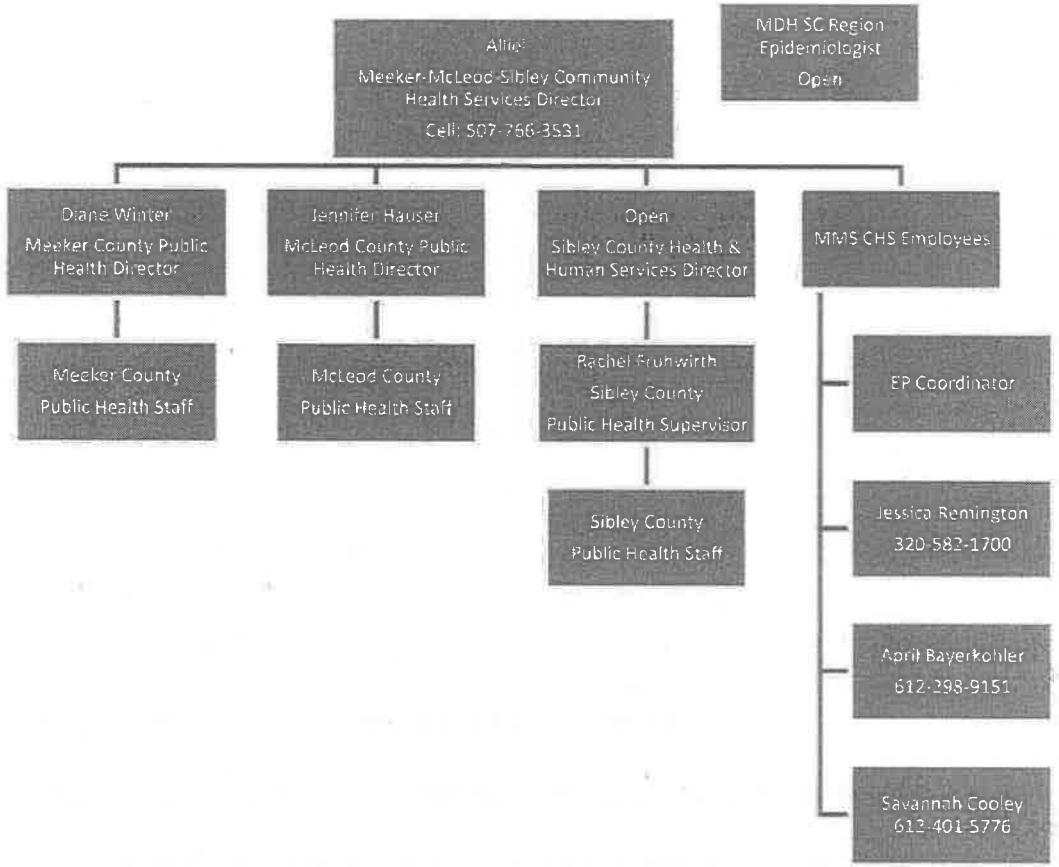
After hours and on weekends, an on-call nurse is assigned in each of the counties. They will be contacted by the respective county Sheriff's dispatch system; the on call nurse will then contact the EP Coordinator. If not available, will then contact the MMS Administrator, if not available will then contact respective Public Health Director.

The EP Coordinator (IC), MMS Administrator (Operations/IC2) and on respective Public Health Director will activate a modified Emergency Operations Center and notify key staff fulfilling a role in the incident command structure.

Initial Staff notification method will be Code Red. Directions are available on Community Health Services Dropbox website.

If Code Red is inaccessible the EP Coordinator will initiate the staff calling tree.

Revised 9/2015, 6/2016, 3/2017



Calling Tree Instructions:

1. The Calling Tree will start when the EP Coordinator/ CHS Administrator calls each Director.
2. Once the County Director has been called by the MMS Director, they will call the first person on their list.
3. Once you receive your call, you should call the name immediately below yours making sure to call all numbers listed for each person.
    a. Defer to county calling tree lists per your county policy as necessary
4. If you reach an answering machine or voicemail, leave a message on each phone number you call and continue down the list until you reach a co-worker.
    a. If necessary, instructions will be provided for message content (e.g. contact PH Director upon receipt of voicemail).
    b. If/when you receive a message; please call or message your director to confirm all staff are contacted/received message
5. You can leave a message with a family member, but then continue to call until you reach a co-worker.
6. The last person on the list should call their County Director
    a. If the County Director is unable to be reached (leave a message) and then please call the EP Coordinator/ CHS Administrator to finish the calling tree.
7. The County Director should contact the MMS Director to finish the calling tree.

Revised 9/2015, 6/2016, 3/2017

Meeker County Public Health Calling Tree (18)

Name	Primary Phone	Secondary Phone	Tertiary Phone
Diane Winter	(c) 320-282-6756	(wc) 320-699-0848	
Laurie Terning	(c) 320-221-0269	320-593-2542	320-535-0133
Pam Miller	(c) 320-310-6935	(wc) 320-699-0524	(h) 320-593-6426
Ilene Nelsen	(h) 320-857-2583	(c) 320-212-6612	(wc) 320-699-0736
Julie Schrum	(h) 320-593-7743	(c) 320-241-1742	
Rose Anderson	(c) 320-221-5017		
Donna Miller	(h) 320-593-3714	(c) 320-290-1234	
Brenda Boline	(h) 320-693-6644	(c) 320-267-8227	
Ann Jensen	(c) 320 221-2675	(wc) 320-699-0739	
Colleen Bonniwell	(h) 320-275-2735	(c) 320-221-4497	
Jill White	(h) 320-693-2141	(c) 320-345-1685	
Pam Bagley	(c) 320-295-2700	(h) 320-857-9479	
Carol Sangren	(h) 320-693-7826	(c) 320-224-2431	
Jodi Findley	(h) 320-693-3785	(c) 320-699-1535	
Catherine Birr	(c) 952-797-3878	(wc) 320-535-0048	
Rachel Lang	(h) 320-309-3788		
Jennifer Crowe	(c) 320-630-4476		
Kelly Benson	(c) 320-894-8489	(wc) 320-699-0708	

*Kelly contacts Diane W. to report Calling Tree is completed. Diane W. contacts Allie to report Calling Tree is completed.

McLeod County Public Health Calling Tree (31)

Name	Primary	Secondary
Jennifer Hauser	320-469-2801	320-587-7072
Amanda Maresh	701-388-8086	
Brittany Becker	507-276-3165	
Joanne Bolland	320-583-0476	
Kathy Hochsprung	320-583-9921	320-583-9921
Jenny Lang	320-420-8688	
Barb Oberlin	320-864-9947	507-210-0381
Jennifer Smith	320-221-3088	
Beth Tollefson	507-351-4153	320-234-6291
Jennia Bartels	612-308-2110	
Cheryl Schmidt	320-510-1424	320-864-4246
Teri Friauf	320-510-0659	
Tracy LaPlante	612-280-1344	320-300-8810
Jodi Schmidt	320-510-2573	320-327-6557
Jessica Bolland		
Laurie Snegosky	320-395-2660	320-224-6961
Nicole Feltmann	847-454-5951	
Danielle Flores	320-296-1936	320-587-6771
Lori Goebel	320-328-4024	320-583-7527
Rhonda Hart	320-296-3085	612-384-0563
Terri Healy	612-501-9005	
Sadie Jenkins	320-583-5031	320-583-0032
Hannah Jerabek	952-923-9863	
Nancy Jurgenson	320-234-7928	320-583-9170
Renee Kotlarz	320-583-7388	
Robin Sikkila	320-328-5547	320-510-1023
Shannon Swenson	507-382-4447	952-873-2485
Vanessa Betker		
Debbie Baker	320-587-2252	320-455-7315
Jean Johnson	320-224-7779	320-224-4533
Kerry Ward	320-864-8206	320-779-0420

*Kerry contacts Jennifer H. to report Calling Tree is completed. Jennifer H. contacts Allie to report Calling Tree is completed.

Name	Home Phone	Cell Phone
HHS Director		
Rachel Fruhwirth		507-995-5541
Bertha Woehler	507-964-2973	507-327-3593
Diane Pettis	507-834-6701	507-766-3509
Donna Kuphal	507-237-2847	612-759-8695
Erin Lind		320-221-1745
Jayme Krauth		320-510-2064
Jane Bruns	507-834-9896	507-766-9963
Julie Miller	507-665-2046	612-226-8721
Laurie Becker		507-317-8902
Mary Bachman	507-326-5218	507-317-1846
Yuriana Soto		
Whitney Wiethoff		
Patty Buerkle	507-834-9834	507-276-8256

*Patty contacts Rachel to report Calling Tree is completed. Rachel contacts HHS Director to report Calling Tree is completed. HHS Director contacts Allie to report Calling Tree is completed.

Sibley County Calling Tree

Call Down List for Epidemiological and Environmental Public Health Resources

Topic	Resource	Contact Name	Phone number
Infectious Disease (MDH)	Disease investigation	Ryan Swafford-Regional Epidemiologist	(o) 507-344-2717 (c) 507-358-1563
Infectious Disease (MDH)	24/7 Access for assistance and resources related to infectious disease		651-201-5414
Environmental Health (MDH)	Health Hazards		651-201-4571
Foodborne Illness (MDH)	Outbreak investigation	Wendy Spainer-Regional Sanitarian Thomas Wilfarht-Regional Sanitarian	(o) 320-223-7331 (o) 507-344-2711
Foodborne and Waterborne Illness (MDH)	Statewide Central reporting hotline		1-877-FOOD-ILL 1-877-366-3455
Poisoning	Statewide Poison Center Hotline		1-800-222-1222
Emergency Preparedness (MDH)	General EP support and assist for supplies, resources, communication, etc	Amy Smith- South Central Public Health Preparedness Consultant	(o) 507-344-2722 (c) 507-318-8095
Public Health Laboratory (MDH)	Centralized laboratory services to provide rapid detection, investigation, control and prevention of public health threats		651-201-5200
Emergency Preparedness (South Central HealthCare Coalition)	Regional collaboration of healthcare agencies and public health agencies for sharing and securing resources for emergency response both epidemiological and environmental	Eric Weller- Program Manager	(o) 507-389-7319 (c) 507-381-6337
Emergency Preparedness (South Central HealthCare Coalition)	Regional collaboration of healthcare agencies and public health agencies for sharing and securing resources for emergency response both epidemiological and environmental	Kevin Burns- Risk Communication	507-381-8092

Red Cross	Assistance with Mass Care Sheltering, volunteers, supplies, resources, education	Katelyn Gorman-Disaster Program Manager	(o) 507-387-6664 (c) 507-720-5765
MN Duty Officer	24/7 Single answering point to request assistance for emergencies related to public safety or environmental threats		651-649-5451 or 800-422-0798
County Emergency Managers	Assistance with mutual aid requests for supplies, volunteers, and other necessary resources in the event of an emergency	Stephanie Johnson-Meeker County EM Kevin Matthews-McLeod County EM Kim Flanaghan-Sibley County EM	(o) 320-693-5420 (o) 320-864-1339 (o) 507-237-4109 (c)612-759-1792
County Dispatch Centers	Assistance with 24/7 communication access	Meeker McLeod Sibley	320-693-5400 320-864-3134 507-237-4330
MN Responds	Personnel for surge capacity and other volunteer assistance	Erick Boeder-MMS EP Coordinator	(o) 320-583-0982 (c) 320-583-4577