



Michigan Department of Health and Human Services (MDHHS)

STI OUTBREAK RESPONSE PLAN
Annex 3 – Appendix 3.11

Not for Dissemination

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Revision Tracking

Revision Date	Person Revising	Overview of Revisions
12/3/2019	Christine Convery	Resolved all comments and revisions for filing document
12/17/2019	Jennifer Lixey-Terrill	Added EOP Annex and Appendix number
05/14/2021	Christine Convery	Update links throughout; replace STD with STI

Plan Distribution List

Plan Holders
MDHHS Chief Medical Executive
MDHHS Bureau of EMS, Trauma, and Preparedness (BETP) Director
MDHHS BETP Division of Emergency Preparedness and Response (DEPR) Director
MDHHS BETP Division of EMS and Trauma (DET) Director
MDHHS Emergency Management Coordinator (EMC)
MDHHS Community Health Emergency Coordination Center (CHECC)
Michigan State Police (MSP) Emergency Management and Homeland Security Division (EMHSD) Director
Michigan State Emergency Operations Center (SEOC)
Division of HIV and HIV Programs (DHSP) staff
<i>Electronic versions are maintained on BETP Shared Drive and Michigan Health Alert Network within the MDHHS Emergency Operations Plan (EOP)</i>

Plan Organization

The Michigan STI Outbreak Response Plan follows the emergency management guidelines and responsibilities set forth in the existing Michigan Emergency Management Plan (MEMP) and chain of command structure. The STI Outbreak Response Plan is an appendix to the Communicable Disease Annex, within the Michigan Department of Health and Human Services (MDHHS) Emergency Operations Plan (EOP). The Community Health Emergency Coordination Center (CHECC) Operating Procedures Manual also provides supporting documentation for this plan. The plan contains an introduction section and a Concept of Operations designed using a phased approach consisting of five phases: Pre-Outbreak, Outbreak Detection, Outbreak Intervention, Outbreak Investigation, and Recovery.

Plan Maintenance

The STI Outbreak Response Plan has been developed in coordination with local, state, regional, and federal partners and is continually updated and revised as situations change and new information and resources become available. The STI Outbreak Response Plan is, at a minimum, to be reviewed and updated annually. The review and update of the plan will incorporate any changes reflective of existing guidance, lessons learned from real world incidents or exercises, and changes in policies and procedures. All plan holders receive revisions and updates as they are published and are given the opportunity to review and provide comments. Authority for review and acceptance of this plan rests with the MDHHS.

Introduction

Purpose

The Michigan STI Outbreak Response Plan provides a set of procedures and policies for the coordinated detection and response to STI outbreaks. This plan outlines a framework and approach to assist public health and other essential partners in preparing for and responding rapidly and decisively to STI outbreaks. Reportable STIs include syphilis, gonorrhea, chlamydia, lymphogranuloma venereum, chancroid, and granuloma inguinale. The plan is based on the following objectives:

- Provide a framework to detect and confirm an STI outbreak
- Determine important epidemiological characteristics of an outbreak
- Identify all responsible parties involved in the STI outbreak response process
- Identify STI outbreak investigation and intervention methods
- Provide guidance on the STI outbreak recovery process

Although the plan is organized into a series of response phases, the phases will not necessarily occur in the order for which they are described in the plan. For example, outbreak interventions should be implemented as soon as possible and should be ongoing throughout the entire response and recovery process.

Local and state health departments will work collaboratively when an outbreak involves multiple health jurisdictions.

Scope

In the event of an emergency response, this plan applies to the State of Michigan and its 83 counties and could be enacted if an occurring or potential outbreak is detected. Specific considerations are noted within this plan for employees of the Michigan Department of Health and Human Services (MDHHS) whose daily positions function under a scope different than those working directly with at risk populations or in health care settings.

Situation Overview

An outbreak is defined as the occurrence of more cases of a disease than expected in a given geographical area or among a specific group of persons over a particular period of time. Disease outbreaks can result in significant morbidity and associated adverse health outcomes, disruption of services, and anxiety in a community. The ability to quickly and effectively mobilize to intervene in an outbreak situation is fundamental to public health practice. It is important for health departments to have a plan for effectively investigating outbreaks, so that they can be brought under control and measures can be taken to prevent similar outbreaks in the future.

Case Definitions

Up to date case definitions and sub-types of relevant STIs can be found on the CDC website at the links below:

- Syphilis (<https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/>)
- Gonorrhea (<https://wwwn.cdc.gov/nndss/conditions/gonorrhea/>)
- Chlamydia (<https://wwwn.cdc.gov/nndss/conditions/chlamydia-trachomatis-genital-infections/>)
- Lymphogranuloma venereum (<https://wwwn.cdc.gov/nndss/conditions/lymphogranuloma-venereum/>)
- Chancroid (<https://wwwn.cdc.gov/nndss/conditions/chancroid/>)
- Granuloma inguinale (<https://wwwn.cdc.gov/nndss/conditions/granuloma-inguinale/>)

Unusual Occurrences

Additional serovariants, sequelae, and manifestations of STIs may also merit outbreak investigation. These include, but are not limited to: Lymphogranuloma venereum (a serovar of chlamydia); disseminated gonococcal infection; pelvic inflammatory disease; ocular, otic, and neurosyphilis; and antibiotic resistance.

Coordination, Administrative Preparedness, and Communications

Coordination

The CHECC coordinates statewide health-related emergency activities by providing real-time public health information, lending subject matter expertise to inform decision-making, orchestrate the mobilization of health resources, and provides situational awareness to and from the SEOC when activated. In doing so, the CHECC interacts with public health and healthcare partners to render support and assistance, such as mutual aid, equipment and supplies, and risk communication information. The CHECC is staffed primarily by MDHHS personnel with appropriate SME augmentation and operates in full compliance with the National Incident Management System (NIMS).

The CHECC Manual includes a document titled, “CHECC Activation Planning Considerations,” that is maintained with the MDHHS EOP “Annex 2 – Direction and Control.” This document defines the activation of the CHECC through various stages, to include the return to routine operations. Furthermore, this document identifies key activities associated with each stage of activation and provides considerations for the prioritization of activities during long term response and recovery operations.

These planning considerations aim to assist decision makers in determining the appropriate stage of CHECC activation in response to a public health or medical

emergency. The identification of indicators, triggers, and activity prioritization are included within the document and strengthen the CHECC's ability to transition between stages while continuing to support requests for assistance and critical coordination of activities throughout sustained long-term efforts.

CHECC Administrative Preparedness

CHECC procedures for the procurement of resources is assigned to the Finance Section. During an emergency response, the MDHHS Grants and Purchasing Division will work with CHECC Finance Staff to give requests for resources related to the emergency priority and special handling to meet the needs of the situation.

Finance staff assigned to the CHECC will determine how MDHHS will capture and report the cost of STI response operations, submit requests for reimbursement, and provide other necessary information regarding budget and finance operations. CHECC procedures include actions for retroactive reimbursement for early preparedness efforts.

Communication

In the event of an emergency involving STIs, MDHHS would activate the MDHHS Emergency Operations Plan's Annex 05: Crisis and Emergency Risk Communication Plan (CERC). The CERC Plan, outlines an all-hazard communication model designed to capture broad elements of a public information response. The plan outlines how MDHHS would develop messages, coordinate outreach, and disseminate information to the public, response partners, and stakeholders. The CERC plan and all appendices are stored on Michigan Health Alert Network (MIHAN) (*path: Documents/Michigan Agencies/MDHHS/EOP/Annex 05_Crisis_Emergency Risk Comm Plan*).

During an STI outbreak, the communications staff in the CHECC will work with subject matter experts and partners to respond to requests for materials, update the MDHHS website, facilitate coordination of conference calls as needed, and provide situational awareness. This will also include the notification of additional counties being considered as part of the outbreak. A sample notification script is attached and may be utilized via the MIHAN and/or email listservs.

Concept of Operations

The Concept of Operations create a framework for the direction, control, and coordination of activities for responding to and recovering from an outbreak of STI. Elements of this phased approach include Pre-Outbreak, Outbreak Detection, Outbreak Intervention, Outbreak Investigation, and Recovery. The following sections capture the key information and recommendations for operationalizing those elements.

Planning Assumptions

The following assumptions will affect the functioning of the STI outbreak response efforts. These assumptions reflect the laboratory testing, notification, surveillance, prophylaxis, and treatment individuals with STIs within the state, and will have a direct impact on the public health and healthcare response.

- During an outbreak, MDHHS will support the local public health department response.
- MDHHS will follow NIMS and its approved EOP policies and procedures.
- Healthcare providers will maintain use of standard precautions.
- MDHHS BOL will collaborate with the Centers for Disease Control and Prevention (CDC) to provide confirmatory testing. This may or may not include Lansing-based validation

Roles and Responsibilities

The agencies listed below are responsible for overseeing and implementing the STI Outbreak Response Plan in direct alignment with the Emergency Support Function (ESF) #8: Public Health and Medical Services, described within the MEMP, to coordinate health-related assistance during an incident with health impacts.

- Federal Level Responsibilities
 - The US Department of Health and Human Services (DHHS) will provide technical assistance for state and local public health, hospitals, and impacted healthcare organizations.
- State Level Responsibilities
 - MDHHS will assist with the coordination of public health actions, to include issuing recommendations.
 - MDHHS will provide STI subject matter expertise to other state agencies and external partners.
 - MDHHS will request medical countermeasures when necessary, to include purchasing vaccine.
 - MDHHS will coordinate risk communications to partners.
 - MDHHS will assist local public health partners in the detection, investigation, intervention, and recovery from an outbreak of STI.
 - MDHHS Regional Epidemiologists will monitor surveillance systems and work with local health departments to support case investigations and liaise with MDHHS subject matter experts.

- MDHHS BOL will provide guidance to clinical laboratories and assist as requested on expediting transport of specimens to the state laboratory.
- Michigan Occupational Safety and Health Administration (MIOSHA) will assist in issues involving worker safety, to include waste management, sanitation practices, and Personal Protective Equipment (PPE) standards.
- Regional Level Responsibilities
 - Healthcare Coalitions (HCC) and healthcare facilities will utilize emergency preparedness resources for planning, training, and exercising STI outbreak response plans, as funding permits.
 - HCC will coordinate regional response efforts by operating the Regional Medical Coordination Center (MCC), if activated.
 - HCC will provide situation awareness to impacted jurisdiction(s) Local Emergency Operations Center (LEOC).
 - HCC will provide situation awareness and facilitate information sharing to and from healthcare organization partners.
- Local Health Department Responsibilities
 - LHDs will implement control measures with the impacted community, to include but not limited to public health advisories, clinics, and education.
 - LHDs will maintain situational awareness with MDHHS
 - LHDs will maintain communication between healthcare, law enforcement, and municipalities and will assist with the coordination of public health actions.
 - LHDs will provide situation awareness to their LEOC and partners as appropriate.
 - LHDs will provide risk communications to the media and the public as necessary.

Reporting Essential Elements of Information (EEI)

The essential elements of information that must be reported to public health in order to facilitate a timely and proper response, include:

- All individuals identified as at risk for having STI, symptoms, or exposure
- All individuals tested and confirmed positive for STI
- The death of any person confirmed with STI
- Incidents with known or suspected exposure to a person with STI
- Medical and pharmaceutical supply shortages that could affect patient treatment
- The presentation of a novel or unusual STI

Phased Approach

All emergencies start at the local level. Local executives may determine a State of Emergency or a public health advisory in order to alert public health officials and the community. Additionally, the Governor is vested with the executive power to declare a State of Emergency in accordance with the Emergency Management Act 390 of 1976 in the event of an STI outbreak. This declaration triggers the Governor’s authority to seek and accept assistance from the federal government, may be considered when responding to an outbreak of an STI.

The STI outbreak response and recovery may include coordination between federal, state, and local authorities. The table below describes the roles the local, state, and federal level agencies may play before, during, and after an STI outbreak.

	Preparedness Phase: Routine Operations	Preparedness Phase: Outbreak Detection	Response Phase: Outbreak Investigation	Response Phase: Outbreak Intervention	Recovery Phase: Outbreak Recovery
Local	Offer Testing Provide adequate treatment	Notify Partners Determine need for declaration/ advisory Enhance reporting	Initiate testing campaign Request resources as needed Enhance case management	Continue testing campaign Enhance treatment options Initiate outbreak control measures to include social interventions and medical countermeasures for pre and post-exposure prophylaxis Continue to provide enhanced case management	Long term case management, re-testing, and treatment planning
State	Maintain surveillance Maintain morbidity monitoring program	Initiate Preliminary Assessment Team Determine need for declaration/ advisory Determine status of resources Initiate risk communication campaign with locals	Augment local case management Initiate Out Break Response Team (ORT) activities Continue coordinated risk communications Support lab testing	Continue to support local case management Provide requested resources Offer legal support Consider state declaration and/or CHECC support	Ensure treatment
Federal	Maintain guidelines and resources	Maintain guidelines and resources	Maintain guidelines and resources	Deploy resources if requested	Provide technical assistance and guidance

The nature of STI outbreak investigations require involvement from a variety of professionals at various levels. It is essential to compile and maintain a multi-disciplinary list of professionals that can appropriately respond to the specific conditions of the outbreak. For example, representation from substance use disorder (SUD) treatment facilities, syringe service programs, and HIV prevention community-based organizations is important if an outbreak occurs among People Who Inject Drugs (PWID).

Key Persons Involved in an STI Outbreak Response
– Bureau of EMS, Trauma and Preparedness (BETP) Staff
– Surveillance Staff
– Local Public Health Preparedness Staff
– MDHHS STI/HIV Program Staff
– STI/HIV LHD Staff (clinical and administrative)
– Epidemiologists
– Phlebotomists
– Outreach workers
– Health educators
– Clinicians
– Local, community, and media partners
– Clinical organizations
– Laboratory personnel
– Community-based organizations (CBOs)
– Members of known high-risk communities
– MDHHS Office of Communications
– Detention facility liaison
– Drug treatment facility liaison
– HIV Counseling, Testing and Referral (CTR) Coordinator

The Outbreak Response Contact List (see Attachment 3. Outbreak Response Contact List) includes names and contact information for these key persons. Identification of persons in the affected area that have specialized skills such as foreign-language speakers, and those with experience working with at-risk populations (i.e. homeless persons, commercial sex workers, prison populations, migrant workers, and transgender persons) will also aid in rapid outbreak response.

STI Outbreak Response Team

The STI Outbreak Response Team (SORT) provides structure for a coordinated response; ensures timely communication; gathers and allocates resources; provides specialized expertise; and collects, manages, analyzes, and presents data. The SORT is composed of several individuals from diverse backgrounds and includes, at a minimum, one of each of the individuals listed in the following table, although additional

members may be identified in particular cases. Each of these roles and responsibilities is clearly documented in the table below.

STI Outbreak Response Team (SORT) Suggested Key Roles and Responsibilities		
Professional	Role	Responsibilities
Local Health Jurisdiction and/or State Health Department Lead	Ensure a coordinated response	<ul style="list-style-type: none"> - Oversees entire response - First point of contact for outbreak information - Arrange initial meeting - Assess resource and personnel capacity - Ensure that team members understand their role and responsibilities - Ensure timely communication between ORT members and other involved persons - Ensure careful, detailed documentation of outbreak response activities, including dates and outcomes - Develop investigative tools to be used in the outbreak - Determine the outbreak response over - Review all presentations and data summaries and provide guidance on these activities - Communicate outbreak to CDC - Notify other relevant public health agencies about the outbreak
Field Services Lead/Supervisor (DIS supervisor or other staff)	Disease control, coordination	<ul style="list-style-type: none"> - Coordinate mobilization of DIS/local staff to outbreak location - Arrange for administrative /logistical support - Assess and assign cases and other investigations to field staff - Review all case write ups and provide guidance for investigative priorities and direction - Provide on-site technical assistance on difficult/complex cases - Determine the need for more resources, including staff - Provide support for control activities - Develop training materials for field staff
Field Services Specialist (DIS, public health nurse)	Disease control, case finding	<ul style="list-style-type: none"> - Carry out case investigation activities as delegated by the Field Services Lead/Supervisor - Provide daily status report of outstanding and completed investigations to the Field Services Lead/Supervisor - Provide feedback from or about patients and providers - Interview patients/partners/clusters - Conduct field investigation to locate patients/partners

		<ul style="list-style-type: none"> - Collect/document Epi information - If trained, collect specimens and ensure availability of specimen collection supplies - Arrange for delivery of specimens to the laboratory - Educate cases and contacts regarding compliance and prevention - If necessary, follow-up on completion of prophylaxis - Interact with private providers to ensure patient compliance/exam/Rx, reinforce reporting and outbreak control recommendations - Assist in conducting targeted screening at community outreach events - Provide community assessment
Epidemiologist	Collect, manage, analyze and present data	<ul style="list-style-type: none"> - Assist in the development of investigative tools - Develop and modify outbreak databases and data collection tools - Responsible for the cleaning, and analysis of incoming case data - Create presentations and other data output summaries as needed - Produce final written report
Surveillance Lead	Ensure timely reporting	<ul style="list-style-type: none"> - Oversee and review reporting by labs and physicians - Visit laboratories to ensure timely and accurate reporting - Visit largest medical providers to enhance screening - Review local surveillance procedures
Medical Consultant	Provide specialized expertise	<ul style="list-style-type: none"> - Provide medical advice and clinical guidance - Develop treatment protocols
Logistics Lead/Liaison	Coordinate resources	<ul style="list-style-type: none"> - Arrange for routine ORT meetings - Ensure secure data transmission systems - Obtain and organize supplies

**Subject Matter Experts Activated as Needed
Key Roles and Responsibilities**

Professional	Activation	Role	Responsibilities
Substance Abuse	STI outbreak cause is substance abuse related	Education and SA treatment	<ul style="list-style-type: none"> - Will educate the community of STI risks - Will provide substance abuse treatment
Maternal Child Health	STI outbreak is affecting pregnant women and/or women of childbearing age	Testing, education, and referrals	<ul style="list-style-type: none"> - Family planning network of clinics for STI testing and birth control - Comprehensive referrals for STI treatment, HIV care, immunizations, PrEP, and nPEP - Community education about STI Transmission - 170 MIHP Social workers and RNs throughout the State who assist pregnant women and infants up to age 1 with case management for the following resources; Women, Infants, and Children (WIC), Supplemental Nutrition Assistance Program (SNAP), mental health, behavioral health, domestic violence, housing, transportation for people with Medicaid (WIC and medical appointments), immunizations, safe sleep, newborn ASQ developmental screening for children 2-5 months if they are delayed, substance abuse, motivational interviewing, smoking cessations, and doctor appointments
Department Legislative Liaison	STI outbreak response is being inhibited by State law	Assist SORT in Navigating Michigan Bill process	<ul style="list-style-type: none"> - Will work with SORT and legislator to change/add/remove laws to remove barriers and/or enhance STI outbreak response

Review of Confidentiality Issues and Privacy Concerns

Maintaining patient confidentiality and privacy is a critical and ongoing part of all regular health service practices. It is especially important to review such policies and procedures in preparation for outbreak investigations. The initial phases of an investigation can be overwhelming, and some personnel may be tasked with unfamiliar responsibilities. Proper training for outbreak team members is necessary to increase the likelihood of optimal adherence to confidentiality and privacy procedures. All members of the STI Outbreak Response Team including the local health department will sign an oath of confidentiality and a data use agreement (see *Electronic Resources*) to ensure expedited data sharing. Data sharing should be done with the least amount of personal health information required to meet the needs of the group.

SORT members must be aware of Health Insurance Portability and Accountability Act (HIPAA) regulations for protected health information and the sharing of information between involved parties. Because protected health information and personal identifiers

are often shared between members of the SORT, measures must be taken to ensure security. Files must be locked daily, fax lines must be confidential and secure, and laptops and “brief-cases” protected from incursion of any type. Following these procedures will ensure secure data transmission and storage as part of the outbreak response.

Occupational Exposure Control

During an outbreak, community members are not the only persons at risk of STI transmission. Response teams and outreach workers are at higher risk of exposure to HIV, HCV, or other bloodborne infections via blood that is collected during the testing process.

In order to reduce or eliminate the hazards of occupational exposure to bloodborne pathogens (BBP) such as HIV, it is imperative to comply with an Exposure Control Plan (ECP). An ECP provides a standard for eliminating or minimizing occupational exposure to BBP in accordance with the Michigan Occupational Safety and Health Administration (MIOSHA) Part 554 Bloodborne Infectious Diseases, and lists the procedures taken if exposure occurs.

Each local health jurisdiction maintains its own Exposure Control Plan. In the event of an occupational exposure to HIV, the staff member exposed should follow the protocol provided within their employer’s ECP. ECPs include methods of implementation and control such as information on personal protective equipment and housekeeping protocol; however, a list of necessary biohazard materials is also included in this plan (see Attachment 2. STI Outbreak Resource Assessment List).

The Division of HIV and STI Programs (DHSP) provides an ECP for its employees (see *S:\Division of HIV and STI Programs\Blood-Borne Pathogen Exposure Control*); The Secretary to the Director of DHSP is responsible for maintaining the DHSP-ECP, staff training compliance, and MIOSHA records. DHSP employees that will have occupational exposure to BBP are required to complete trainings regarding the exposure controls (see the Personnel Assessment section for additional information on training).

Pre-Outbreak Planning

This section of the Outbreak Response Plan outlines actions that are taken prior to an outbreak to prepare for a coordinated response. The key components of pre-outbreak planning include: Surveillance System Evaluation, Resource and Personnel Assessment, and Local Collaboration Assessment.

Surveillance System Evaluation

Michigan Public Health Code requires reporting of all laboratory results indicative of STI infection and all STI case report forms to MDHHS. STI Surveillance is coordinated by the State STI/HIV Surveillance Manager, the State STI Epidemiologist(s), and the STI/HIV Health Informaticist. Local health departments are assigned the responsibility of receiving mandated laboratory and physician disease reports. They are then charged with processing those reports and submitting them to the State in a timely manner (see Attachment 2. STI Outbreak Resource Assessment List). Case reports and lab reports at MDHHS are received via Michigan Disease Surveillance System (MDSS), fax, or mail. Epidemiologists in the Detroit and Lansing offices maintain and assess STI data in MDSS for the entire state.

Local health jurisdictions are responsible for patient and partner follow-up for new chlamydia and gonorrhea cases while Disease Intervention Specialists (DIS) are responsible for patient and partner follow-up for new early syphilis cases. Information regarding Partner Services and testing information are entered into MDSS. These data are maintained by an Epidemiologist within the Surveillance program. Local health departments have access to jurisdictional data through MDSS.

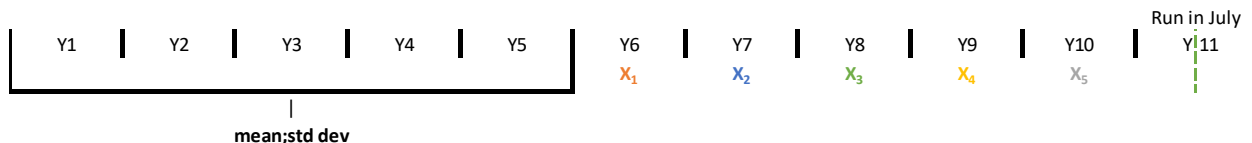
Analysis of Surveillance Data Methods

Analyses of syphilis, gonorrhea, and chlamydia cases by geography, behavioral group, age, race, sex, and special interest groups are conducted monthly by MDHHS epidemiologists that are part of the STI surveillance program. Western Electric Rules (WER) are used to flag regional and demographic groups with unusual STI diagnosis rates or frequency increases during a specific time frame.

The STI surveillance program monitors to detect long-term growth (slow growing epidemics) annually and short-term outbreaks monthly.

Monitoring Slow Growing Epidemics

In January, the mean diagnosis rate and standard deviation of the first five years of a ten-year period are calculated. The individual new diagnosis rates of the following five years are compared to this mean and standard deviation. The following figure displays this timeframe in relation to the time the assessment is conducted.



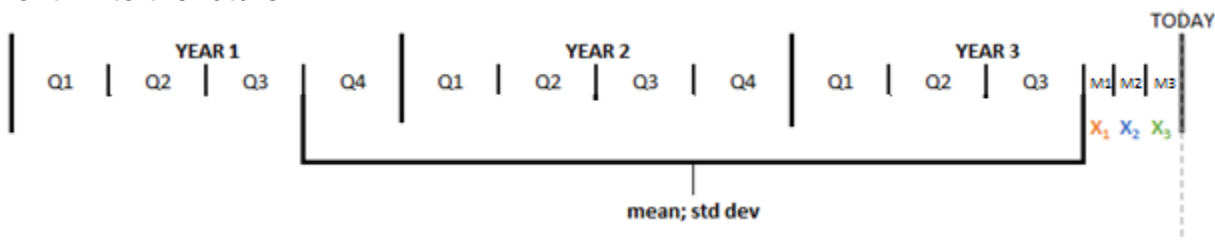
A regional or demographic group is flagged if one of the following is met:

- 1) If the rates of three consecutive years (X_1 , X_2 , X_3 , X_4 , or X_5) fall outside the upper limit (3rd standard deviation above the mean)
- 2) If the rates of any three of the five years (X_1 , X_2 , X_3 , X_4 , or X_5) fall outside the upper limit and the overall rate change between X_1 and X_5 increases

Flagged groups may be experiencing a slow but steadily increasing STI burden over the preceding decade. These groups are investigated further to determine underlying causes of this growth (if there is a real increase in STI or if other factors are confounding the data).

Monitoring Short-term Outbreaks

Each month, the number of diagnoses during the previous three months are individually compared to the mean monthly diagnoses observed during the 24 months preceding the three months of interest. The following figure demonstrates an example assessment on January 1 of any given year. Each month, all categories shift one month into the future.



A regional or demographic group is flagged if 1 of 2 criteria is met:

- 1) Baseline mean = 0 (no cases) and there are at least three cases in X_1 , X_2 and/or X_3 combined
- 2) Any 1 point (X_1 , X_2 or X_3) is more than 3σ (standard deviations) from the mean

While the long-term growth monitor requires multiple years of diagnosis rates to fall outside the upper limits of a five-year mean, the short-term outbreak monitor requires that only one quarter fall outside the limits of a one-year mean. This results in many false alerts but improves the odds that any new fast-growing outbreak will be caught.

For information regarding outbreak phases, Surveillance indicators, and Surveillance/Prevention responses please see Attachment 7: Outbreak Monitoring Program Statistical Explanation.

Analysis of Ancillary Surveillance Data

In addition to case-based surveillance data, other data sources can be used to detect outbreaks. For example, gonorrhea and chlamydia prevalence monitoring may detect unusual increases in disease positivity which may indicate an increase in the prevalence of disease in a given community. The main source of prevalence monitoring data is the state Bureau of Laboratories, which runs tests for the publicly supported chlamydia and gonorrhea program that screens nearly 100,000 at-risk young individuals in settings like family planning, corrections, adolescent/school-based health centers, and STI clinics. Prevalence monitoring data can also be used to support hypothesis that significant changes in cases may be due to testing aberrations. Another ancillary surveillance data set is large medical center or laboratory testing results. For example, when syphilis cases increase in a local health jurisdiction, laboratory data from the main medical center is obtained to show the number of syphilis tests that were done over a given time frame and how many were positive. This can support case-based data with information on testing, increases in provider awareness, or decreases in testing.

Surveillance System Evaluation

Surveillance Epidemiologists routinely evaluate the following elements of the STI Surveillance system:

- Timeliness of case reporting (from lab/health care provider referral to MDSS to completion of case detail)
- Data quality, including completeness of data elements such as treatment, race, risk, and current address
- Partner services data quality and completeness

Resource Assessment

The STI Outbreak Resource Assessment (see Attachment 2. STI Outbreak Resource Assessment List) identifies diagnostic equipment, treatment supplies, and other supplies that may be utilized during an

outbreak response. Maintain sufficient quantities (to be determined locally) of the listed items. If not locally available, DHSP-funded agencies may request supplies from DHSP via the MDHHS-DHSPSupplies@michigan.gov email. Through this email, DHSP-funded agencies may request educational brochures, condoms, and supplies appropriate for the outbreak situation at no cost. During an outbreak, MDHHS CHECC may also be activated to support response activities, including the request for federal public health and medical assets.

Documents to Expedite Outbreak Response
– Reporting requirements (Brick Book)
– Electronic Case Reporting Guide
– DIS Coverage Maps
– CDC Testing Guidance
– EPT Guidance for Clinicians

Maintain documents that will expedite the outbreak response process and agency clearance. Update directories of the STI/HIV prevention and treatment services that exist for each community. *The Michigan HIV Resource Inventory* (See *Electronic Resources*) contains contact information and descriptions of the HIV-related services that are available in each county in Michigan.

Personnel Assessment

Trainings and Certifications

DIS Certification & Maintenance

DIS responding to an outbreak are required to have completed CDC training introduction to Sexually Transmitted Infection Intervention or Passport to Partner Services.

Individuals who intend to assist with HIV testing during an outbreak are required to have completed the Michigan HIV Test Counselor certification training. DHSP staff who will conduct testing during an outbreak must maintain their certification by completing Test Counselor update trainings and Rapid Testing update trainings.

Outbreak Preparedness and Response Trainings

Access Emergency Preparedness and Response Trainings on the MI-TRAIN website (<https://mi.train.org/DesktopShell.aspx>).

Occupational Safety and Health

MDHHS is committed to providing a safe work environment for all its employees. Staff who may have occupational exposure to blood or other potentially infectious material are required to complete a set of three MIOSHA trainings and then annual update trainings. Staff responding to an injection drug related outbreak may require training in the use of naloxone to treat overdose in emergency situations. Naloxone can be distributed by pharmacists without a provider prescription per standing order by the MDHHS Chief Medical Officer (MCL 333.17701 et seq.).

Local Collaborations

In order to build and maintain a successful working relationship with the community, collaboration with key gate keepers and stakeholders should be on-going, especially among members of the priority populations where there is traditionally higher STI morbidity. At the time of an outbreak response, it may be too late to develop these partnerships.

Working with Local Clinicians

Collaborating with health care providers via written communication can improve the delivery of medical care and increase reporting. Remind providers to report cases rapidly and take a thorough sexual history, listening for important modes of transmission

(see Communication section for additional information regarding working with local clinicians).

Working with Regional Epidemiologists

The Regional Epidemiologist (RE) position within the Bureau of Epidemiology and Population Health was developed with the intent to liaise between Local Public Health and the MDHHS, and to assist in Epidemiologic and Surveillance activities for bioterrorism, traditional communicable diseases and other emerging threats. Regional Epidemiologists are tasked with tracking infections by reviewing data in the Michigan Disease Surveillance System (MDSS), Michigan Syndromic Surveillance System (MSSS) and through outbreak investigations and communications with local health partners. When monthly, quarterly, or annual increases in STI incidence are identified and sent to LHDs, the corresponding RE is copied. If the RE has information that might provide additional situational awareness, (e.g., an increase in Hepatitis C in a subset of the population), this information will be relayed back to the STI program. During a significant STI outbreak response, REs could assist in information sharing between LHDs and STI program staff and may be available to conduct epidemiologic analyses and support contact tracing efforts.

Working with the Community

Working with the community proactively is important to establish credibility and reduce misinformation. Local health jurisdictions should be able to assess community resources and optimal mobilization methods. In the case of STI outbreaks, gaining cooperation of those venues that are most likely to facilitate or impede transmission is paramount. For example, in an outbreak within MSM populations, sex club and bathhouse owners, internet providers, and bar venues that facilitate individuals meeting each other for sex can be key resources.

Specific community partnership efforts include:

- Maintaining regular communication to and from key stakeholders
- Listening and responding to priorities of the community, in partnership with the health department, in order to identify a community's assets and deficits from the community's perspective
- Maintaining a consistent presence in the community in order to demonstrate genuine interest, before and after an outbreak occurs (i.e. attend coalition meetings, conduct outreach and/or assessments of the community's priorities, hold community meetings and events, etc.)
- Conducting periodic assessments with priority populations and community members to determine possible factors that influence STI risk as well as risk-reduction techniques
- Contacting key stakeholders and gate keepers via individual connections, coalition meetings, and community meetings held by the health department to discuss recent STI data trends and priority population demographics. Make reports available in print.

Stakeholders

- Regional and local leaders in law enforcement, public health, emergency preparedness
- Community-based organizations serving priority populations of racial, ethnic, and sexual minorities, consistent with epidemiologic data, and those who participate in increased-risk behaviors
- Public agencies
 - Schools/school-based clinics
 - Colleges/universities
 - Foster care
 - Juvenile detention center/Jails
 - Local police department
 - Other health department programs

Outbreak Detection

The threshold for outbreak definition depends on issues such as: overall number of cases involved and percent increase, spread across communities, and success of partner notification, testing, and linkage to care referrals and outcomes.

As STI surveillance data in Michigan is centralized, most of the responsibility for detecting possible outbreaks falls upon Epidemiologists in the STI surveillance program. Disease Intervention Specialists (DIS) and public health nurses, who have first-hand knowledge of the local dynamics of infection activity, are important in confirming outbreak plausibility as well as alerting Surveillance staff about new populations to closely monitor.

Local health jurisdiction staff and DIS are encouraged to contact the Surveillance program when they sense any increase in infection levels in the community. DHSP sends routine reminders and centralized contact information to local health departments to expedite this type of notification.

Detection Methods

Surveillance program epidemiologists identify outbreaks by various methods including routine evaluation of surveillance case reporting data, assessment of partner networks and testing positivity rates, and narrative observation from local health department staff, medical providers, and/or community members.

Confirming a Possible Outbreak

Once a potential outbreak has been detected, it must be determined if the documented increase in cases is a true outbreak. Various factors must be considered when determining if an increase in diagnosis/case reports represents an actual outbreak.

Include review of demographic, risk, and other characteristics along with the method of case ascertainment during the preliminary assessment of case data. The purpose of this is to quickly identify other factors accounting for the observed increase. For example, indentifying a new testing initiative among a specific group may explain an increase in new diagnoses. A small increase in a geographic area among dissimilar demographic or risk groups is unlikely to be a true outbreak and should just be monitored for further changes. Additional factors to consider include changes in diagnostic practices, and changes in laboratory technique (a more sensitive test or laboratory reporting error).

The determination of an outbreak is done collaboratively with the impacted local health jurisdiction(s), the MDHHS Surveillance program Epidemiologists and MDHHS STI program staff, in consultation with the State Chief Medical Executive. This collaborative group will carefully consider all evidence in classifying an outbreak, given that declaring an outbreak in a community may provoke strong emotional and political responses. Further, acting with sensitivity and thoughtfulness avoids stigmatization of a specific population or community. If the observed increase is determined to be an outbreak after a thorough assessment, outbreak investigations should be initiated.

Outbreak Investigation

Coordination Meetings

SORT Coordination Meetings

The Logistics Lead/Liaison will schedule the initial SORT Coordination meeting and invite all SORT members as soon as it has been determined that a true outbreak is occurring. The Surveillance Lead will facilitate this meeting to brief all parties on the current outbreak situation, and ensure that the SORT completes the following actions:

- Discuss overview of outbreak situation
- Discuss overview of local area and systems
 - Local patient population
 - Locations where high-risk activity occurs
 - Local CBOs that may be valuable partners
 - Listing of local health care provider resources, including local clinic and provider types, hours of operation and patient referral procedures
 - Lines of communication with the local media per the Joint Information Center's recommendation
- Assess resources, including what is available and what will be needed
 - Hours of operation, patient referral procedures of public clinics, and alternate health providers
 - Surge capacity
 - Mutual aid requests and anticipated requests for additional resources
- Plan control measures, including those that can be implemented immediately

- Logistics of the testing campaign (locations, hours of operation, staff & testing requirements, access to refrigerators/ coolers, etc).
 - Social and medical interventions
- Review SORT roles and responsibilities, including the chain of command for each role
 - Assess whether other individuals other than the SORT will need to be involved in the response
- Assess need for additional training, focusing on following areas:
 - Case, partner and cluster (i.e. non-sexual social contacts) interviewing
 - Forms and procedures for documenting case, partner, and cluster information
 - Diagnostic testing and phlebotomy
 - Data entry and analysis
 - Include flow of data with sample algorithm
- Modify appropriate timeline for the completion of assigned tasks for each team member (see Attachment 5: STI Outbreak Response Planning Timeline)
- Implement communication plan (per MDHHS Public Information Officer)
- Plan for after-action report/evaluation (see Attachment 6: Long-Term Recovery Plan)
- Identify case prioritization
 - Establish priority criteria for determining which order patients will be interviewed and counseled.
 - Consider HIV status, viral load, profile of partners (e.g., adolescent or female with a known or suspected pregnancy), pregnant females testing positive for STI, persons testing positive for an STI
- Review confidentiality protocol
 - Review who has access to which data and how it will be securely shared between SORT partners
 - Sign Oath of Confidentiality Form
 - Sign Data Use Agreement Form (if applicable) to assure adherence to all local, state and federal regulations
 - Review confidentiality measures including:
 - Only collecting identifying information that is essential.
 - Using the established system for secure transmission of data (i.e., DCH file transfer, shared server, fax, etc.)

Scheduling Routine Meetings

The Logistics Lead/Liaison will arrange for routine SORT coordination meetings throughout the outbreak response. The Local Health Jurisdiction Lead will facilitate these meetings. Consider necessary meeting arrangements, such as a call-in number for those working off-site as well as room reservations when scheduling the meeting logistics. The SORT will examine resource availability at every scheduled meeting. The Logistics Lead/Liaison will invite additional stakeholders or response staff to coordination meetings as identified by the SORT.

See the Communication section for information on verbal briefings to external partners involved in the outbreak response.

Investigation

Case-Finding

The Field Services Specialist will ensure that all current outbreak cases have been identified and that additional cases are detected and reported rapidly by:

- Implementing testing campaigns in areas frequented by the STI priority population, with consideration to:
 - Who: What demographic, geographic, or behavioral groups are at highest risk of infection and should be targeted for testing?
 - Location: What does the interview data suggest as good locations for case finding?
 - Time: What days and times will the population of interest likely be at those location(s)?
- Collaborating with community partners to increase case-finding, especially for hard-to-reach populations
- Collaborate with community members to identify possible contributing factors related to local STI transmission, effective approaches for controlling the outbreak (from the perspective of the community), and venues for and approaches to locating members of the priority population for testing, treatment, and possible interview

Innovative case-finding methods may include:

- Enhanced contact tracing using a social networking approach
- Media and community-level outreach to target high-risk populations and venues
- Offering screening and linkage to care for at-risk individuals in area emergency departments during the outbreak

Case Reporting

The SORT Epidemiologist (appointed by the STI surveillance section once an outbreak is determined) will ensure outbreak data are entered into MDSS efficiently and accurately throughout the entire outbreak response. This person will also evaluate data from initial index patients for trends to guide further case finding, monitor the epidemic curve, and identify any shifts in the outbreak.

The Field Services Specialist will gather critical data elements and enter them directly into MDSS to assist with case reporting responsibilities. As new and supplement information pertinent to the outbreak has been entered by the staff into MDSS, it can then be sent through its regular chain of operation.

Critical data elements are:

- ID number
- Name
- Date of birth
- Most recent laboratory results
- Current case classification/stage
- Jurisdiction
- Interview status
- Key contact data, possibly including phone number(s), address(s), email address(s) and/or other electronic contact information
- Key demographic characteristics
- Key risk characteristics

Descriptive Epidemiology

The SORT Epidemiologist will characterize the outbreak with the use of basic descriptive epidemiology, as data become available, including:

Time: Construction of an epidemic curve

Place: Mapping, charts

Person: Descriptive summaries of demographic and risk characteristics

The SORT Epidemiologist may also conduct the following activities to formulate a hypothesis regarding potential risk factors contributing to the outbreak:

Review of existing data: The review of existing case reporting and supplemental surveillance data is described in outbreak detection above

In-depth review of information obtained by Partner Services: Review interview responses of several individuals to look for any similarities among cases. Keep the structure and data collection tools of these interviews open-ended to better identify risk factors that may not have previously considered

Interview health department staff: Talk with local staff that are familiar with index patients and know more about risk-behaviors than what is recorded on a standard case reporting forms or in the field record. They may notice epidemiological links among index patients that have been seen in their health care facility or agency

Review medical records: The data reported in MDSS does not necessarily represent all the risk-factor data collected during the index patient's healthcare visit. Review medical records of select case-patients via eHARS, Ryan White clinics, centralized EMR systems for which the Surveillance program has in-office access, or substance use disorder treatment admission data

Meet with community "key informants": Talk with key informants, community members who are considered knowledgeable about what goes on in a given community, to attain useful clues about the outbreak situation

Network/Cluster Analysis

The Field Services Specialist will review index patients and partners for evidence of "epi-links" or "connections". Consider utilizing network analysis software in order to visualize connections, identify clusters, and target individuals for follow-up.

Surge Capacity

If necessary, DHSP will mobilize surge staff for the response. Additional surge can be coordinated through the CHECC. During routine meetings, the SORT may request surge based on areas within the response that require additional staffing assistance. The Logistics Lead/Liaison manages mobilized-surge coordination during the response to ensure operational stability. This includes working with agencies where surge staff may originate, communicating with SORT members to identify staffing gaps, and supporting pop-up-support services for the outbreak response. Possible staff identified for surge capacity may include regional DIS, certified test counselors, and health educators.

Outbreak Management System

The Outbreak Management System (OMS) is an additional tool which can be accessed via the MDSS and is designed to support State and LHDs in the centralized, electronic management of the outbreak. OMS can support routine health investigations and accommodate a public health response. During an STI outbreak, the monitoring module would facilitate contact tracing and data storage for repeated assessment and testing of at-risk individuals. This data will be made immediately accessible to state and local public health entities.

Frequency of testing or other assessments may vary based on the level of risk. Within OMS, an individual can be categorized as low, moderate, or high risk. The data can be exported as either individual data or aggregate data, and may include contact tracing, root cause analysis, epidemiological descriptions, and outbreak trends analysis to support public health interventions. These de-identified reports may be used as situational awareness for public health partners and to educate providers, the community, and/or public stakeholders. OMS would be used for contact tracing and periodic assessments, and would therefore, not store case information or testing results.

Outbreak Interventions

Social Interventions

Although some interventions should be initiated as soon as the outbreak is detected, other interventions should only be implemented after collection and assessment of more in-depth data. The decision to initiate quick, generally easier interventions, versus more complex and potentially costly interventions depends on many factors, including the apparent magnitude of the outbreak, resource availability, and estimated intervention impact.

Social interventions can be divided into four categories: individual level, group level, community level, and structural level. Each level of intervention has its own advantages and challenges. Some intervention activities may already be occurring in the outbreak area or for the affected population; the outbreak team should keep local intervention facilitators informed of the outbreak.

Individual-Level Interventions

Responsible: The Field Services Specialist will collaborate with local public health to implement individual-level interventions.

Description: Individual-level interventions focus efforts on individual clients and contact with their sex and needle-sharing partners and are often conducted through routine original and cluster interviews as well as re-interviews of previously interviewed clients. It is important that all index patients previously identified have been tested and linked to care and that their partners are also adequately tested and linked to care, if applicable, as soon as possible.

Examples of individual-level interventions:
<ul style="list-style-type: none">– Assure proper testing of index-patients– Assure proper treatment of index-patients– Field collection of specimens for testing– Elicitation of sex partners– Testing and interview of sex and needle-sharing partners and partners' partners– Risk reduction and individual prevention counseling– Referrals for drug treatment, intimate partner violence situations, and additional STI testing

Group-level interventions

Responsible: The Field Services Specialist will collaborate with the MDHHS PIO and local public health to implement group-level interventions.

Description: Group-level interventions are carried out in one or more group sessions. Group-level interventions have the potential to reach several individuals at once. Single-session group level interventions can be highly effective for STI prevention; they have the advantage of attracting more individuals. Multiple-session group level interventions may be more effective at long-term behavior change.

Examples of group-level interventions:
<ul style="list-style-type: none">– Group health education– Group risk-reduction counseling– Group screenings

Community-Level Interventions

Responsible: The Field Services Specialist will collaborate with the MDHHS PIO and local public health to implement community-level interventions.

Description: Community-level interventions are designed to improve the risk conditions and behaviors in a community through a focus on the community, rather than intervening only with individuals or small groups. The impact of community-level interventions is generally seen over time; therefore, their use in an outbreak situation is limited.

Community-level interventions aim to reduce risky behaviors by changing attitudes, social norms, policies, and practices of the community. These interventions usually involve a period of community assessment. In order to properly implement a community-level intervention, an organization must determine that it has the personnel and resources to conduct this assessment to make the intervention effective.

Examples of community-level interventions:
<ul style="list-style-type: none">– Community mobilization– Social marketing campaigns– Community-wide events– Harm Reduction education/services

Structural/Policy-Level Interventions

Responsible: If applicable, the Local Health Jurisdiction Lead will collaborate with the Medical Consultant, local public health, medical providers, policy makers, and/or key stakeholders to implement structural/policy-level interventions.

Description: Structural/Policy level interventions work to interrupt or reduce transmission through changing a social, economic, environmental, legal, or political structure. Interventions of this sort may appear complicated, but in fact are often simple. They have the potential to reach many individuals who will not be reached by individual-level or the most aggressive community-level interventions.

Example of Structural/Policy-level interventions:
<ul style="list-style-type: none">– Reduction or suspension of clinic or medical service fees from providers who have seen or will likely see outbreak associated case-patients to facilitate treatment and primary prevention by increasing case finding

Medical Interventions

HIV Pre-Exposure Prophylaxis (PrEP)

Responsible: If applicable, the Medical Consultant will collaborate with the Field Services Specialist and medical providers to establish a protocol for prescribing PrEP as a medical intervention.

Description: Daily oral PrEP has been shown to be effective in reducing the risk of HIV transmission in individuals at high risk, such as those who have been diagnosed with an STI. Health service providers may want to consider the administration of PrEP to HIV negative individuals who could be part of the at-risk or outbreak community. The Michigan PrEP Directory is available on the MDHHS STI/HIV website (see Electronic Resources).

Linkage to HIV Care

Responsible: If applicable, the Medical Consultant will collaborate with the Field Services Specialist, medical providers, HIV test counselors, Early Intervention Specialists and HIV treatment facilities to establish protocol HIV treatment as a medical intervention.

Description: Those co-infected with HIV and not sufficiently engaged in care will be linked with HIV treatment services as soon as possible. Linkage to HIV care is a medical response, as well as a preventative intervention.

Substance Use Disorder Treatment and Mental Health Services

Responsible: If applicable, the Medical Consultant will collaborate with the Field Services Specialist, medical and mental health providers, and SUD treatment facilities to establish a referral and treatment protocol for utilizing SUD treatment and mental health services as a medical intervention.

Description: In the event of an STI outbreak occurring among PWID, ancillary support services such as STI treatment, and mental and behavioral health services may aid STI prevention and outbreak control efforts.

STI Screening and Treatment

Responsible: If applicable, the Medical Consultant will collaborate with the Field Services Specialist, medical providers, and STI treatment clinics to establish a treatment protocol for further STI screening and treatment as a medical intervention.

Description: Ancillary support services such as STI screening and treatment clinics will aid STI prevention and outbreak control efforts. Outbreak related patients will be tested for additional STIs as will their partners.

Communication

Communication is the foundation of all outbreak investigations. The information must be timely, informative and accurate. It also must reach those that are the most affected and be responsive to changing situations. Communications should be tailored for the audience and describe their role in outbreak management (medical, advocacy, screening, etc.).

The CERC Plan defines the communication strategies, protocols, outreach channels, and tactical tools available for keeping the public, partners, and vulnerable populations informed. The ability to effectively inform and educate the public will be critical to the success of protecting public health and the spread of communicable diseases. In an emergency, the CERC Plan will serve as the primary written communication plan for MDHHS.

Tactical Communications

Tactical communications are foundational to an outbreak investigation as well. The Emergency Operations Center (EOC) maintains communications with the incident site and obtains resources for the response. Consistent outbreak messaging will be sent via the Michigan Health Alert Network (MI-HAN). The STI Communications Coordinator will lead all outbreak related communications efforts for the STI Section.

The MDHHS Public Information Officer (PIO) will provide routine verbal briefings to external entities involved in the investigation and control of the outbreak, including health agencies. The communication network may include:

- STI Outbreak Response Team
- MDHHS senior management
- Local health department senior management
- Local health officials in the county experiencing the outbreak
- CDC program consultant
- Substance Abuse and Mental Health Services Administration (SAMHSA) program consultant
- Local area providers and organizations
- Community Benefit Organizations (CBOs)

As a part of the notification process, the MDHHS PIO will send a brief or blast fax to the appropriate entities describing the outbreak as it is currently understood, what staff are involved, and how the determination of an outbreak was reached. Additionally, a “Dear Colleague” letter is sent to a pre-determined list of health care providers and agencies. BETP maintains this contact list. Where appropriate, the MDHHS PIO will communicate an overview of the epidemiology, case definitions, STI background or clinical information, and recommended actions for different stakeholders.

Public Information Communications

Joint Information Center

The Joint Information Center (JIC) is coordinated through the SEOC and is the central point of contact for public information related to the outbreak. The JIC maintains an outbreak-specific webpage and public statement templates, and coordinates media briefings and media campaigns.

PIOs will distribute messages related to the outbreak via the MI-HAN.

Requests for Information

All inquiries to MDHHS regarding an STI outbreak must be directed to the MDHHS PIO. It is important that local and state health agency staff comply with JIC requirements for release of data.

Local Clinicians

It is imperative that local providers are aware of and kept updated on the outbreak status. A face-to-face meeting with local providers by designated staff is a necessity initially and preferred throughout the outbreak. All providers in the jurisdiction should receive alert letters and those in high morbidity areas or whose clients consist of the targeted population should receive more specific information as it relates to their medical practice (e.g. zip code analysis, high risk behaviors).

Infectious disease clinicians, local emergency departments and urgent care facilities should always be valued members of the medical community. Their partnership is critical to effectively respond to an outbreak. Disseminating information to medical professionals through large scale presentations or individual meetings is tantamount to creating an effective partnership during an outbreak.

Outbreak Recovery

Long-Term Recovery Plan

The Local Health Jurisdiction Lead will produce the *Long-Term Recovery Plan* (Attachment 6: Long-Term Recovery Plan). This plan for post-outbreak recovery includes continuation of intervention methods. The plan also describes transitional planning elements including:

- HIV Testing
- HCV Testing
- Disease Intervention and Partner Services
- Care Coordination
- Public Relations/ Education Campaign
- Capacity Building for MDHHS Infectious Disease Response
- Higher level of monitoring for a period after outbreak is determined over

The SORT will be responsible for ensuring that these processes are completed.

After Action Report

The SORT Epidemiologist will produce a final report to communicate findings and inform future outbreak planning. The final written report should include all the necessary components of a scientific report: background, methods, results, discussion, and recommendations. It serves as a record of performance, a document for potential legal issues, and a reference for health departments for future outbreaks. As such, it is imperative to keep detailed records during the investigation describing actions taken, personnel involved, and data gathered to be used in the final report.

Of note, the report will describe recommendations for changes to the Outbreak Response Plan. All persons involved in the outbreak should be acknowledged in the report and provided with an opportunity to review the report. If possible, the report should be submitted for publication, so that it can reach a larger audience and public health and scientific communities can benefit from the experience.

The response to a particular outbreak should be evaluated on both the activities conducted during the response and on the outcomes of the response. A formal comprehensive evaluation of the outbreak can provide a valuable tool for shaping future outbreak responses. The following is a list of areas that should be addressed in the After Action Report including questions to help guide this evaluation.

Surveillance:

- Was the outbreak identified in a timely manner?
- What data sources were most helpful in elucidating the outbreak and its characteristics?
- How many additional cases were identified through outreach or other active surveillance activities?

- Why were these cases not identified through passive systems?
- What could have been done to identify these patients earlier?
- What was the lag time between laboratory test or disease diagnosis and case report?
- What was the lag time between case report and initiation to field investigator?
- What role did epi play in tracking cases in the affected area? In planning interventions/activities?

Resources:

- Were DIS and other field staff levels adequate for the response?
- Were DIS and other field staff adequately trained to respond using non-traditional approaches?
- Were DIS and other field staff able to respond to the outbreak in a timely manner?
- Were geographic or population gaps in coverage identified?
- What were the partner services indicators for the outbreak? What could bias the utility of these indicators?
- Were cases interviewed, managed, and closed in a timely fashion?
- Were DIS and other staff able to contact and interview index-patients?
- Were necessary supplies available (blood draw kits, CTR supplies, mobile vans, etc.)? What could have been done to make these supplies more readily available?
- Were there staff or supplies that would have been necessary or helpful which were not readily available? How could these be secured in the future?

Clinical Services:

- Overall, how effective were the existing clinical services?
- Were sufficient clinics open with convenient hours to serve the community?
- How well trained were the clinicians providing these services?
- Were additional services utilized? In what capacity? How effective were they?
- What clinical services would have been necessary or helpful but were unavailable? How could these services be secured in the future?
- Was surge capacity utilized?

Laboratory and Diagnostic Services:

- Were the laboratory services adequate?
- Were specimens properly obtained and handled?
- Were preliminary positive cases confirmed?
- Were results delivered to the clients in a timely manner?

Morbidity and Population:

- Has the morbidity of the infection been reduced in the area of the response?

- What populations were primarily affected?
- What are some reasons for the outbreak developing in this geographic area? Among these populations? At this magnitude?
- If an outbreak were to develop in this area again, what would you suggest be done differently? With this population?

Community Partnerships:

- What community partnerships were called upon during this response?
- Have community contacts been kept in the loop now that the outbreak has subsided?
- What role did each of these partnerships have in the response?
- How can these partnerships be sustained for outbreak preparedness?
- What community partnerships were unavailable that would have been necessary or helpful in this response?
- What barriers were there to community mobilization? What strategies were attempted to overcome them?

Communications:

- Which outlets succeeded in getting the word out about the outbreak? Which were not successful?
- Which networks/radio stations/reporters covered the story accurately?
- What confusion existed regarding assuring smooth flow of communications?
- Was communication among the STI outbreak response team effective?
- Was communication with stakeholders external to the STI outbreak response team effective?

Costs:

- What was the cost of the outbreak response?
- Were the funds needed diverted from other important functions? If so, what?
- Are the costs justified in light of the outcome?
- Were funds or other resources such as extra staffing made available in the local jurisdiction(s)?

Attachments

Electronic Resources

Electronic Forms:

Michigan Disease Surveillance System (MDSS) Log-In Portal:

<https://www.michigan.gov/mdss>

Integrated Security and Confidentiality Guidance Document:

[Available on the SharePoint Site](#)

Surveillance Resources:

Sexually Transmitted Infection Statistics:

<http://www.mdch.state.mi.us/pha/osr/Index.asp?Id=12>

2017 Annual Report:

https://www.michigan.gov/documents/mdhhs/2017_std_report_final_633944_7.pdf

DIS Coverage Map:

https://www.michigan.gov/documents/mdhhs/MI_Area_DIS_Map_w-staff_legend_633955_7.pdf

Data Security and Confidentiality Guidelines:

<http://www.cdc.gov/nchhstp/ProgramIntegration/docs/PCSIDataSecurityGuidelines.pdf>

Oath of Confidentiality

https://stateofmichigan.sharepoint.com/:b:/r/sites/dhhs/COTS/HIVSTD-Surveillance/InternalReference/Security%20and%20Confidentiality/OATH2018_HI_VSTD.pdf?csf=1&e=RfDA74

HIPAA/Data Incident Report

<https://stateofmichigan.sharepoint.com/teams/insidedhhs/work/formsandpolicies/layouts/15/Doc.aspx?sourcedoc=%7B2825D5AC-2CA3-4D41-8989-2C694DE82B10%7D&file=DCH-1422.dot&action=default&mobileredirect=true&DefaultItemOpen=1>

Communicable Disease Reporting in Michigan:

http://www.michigan.gov/mdhhs/0,5885,7-339-71550_5104_53072---,00.html

Local Resource Guides:

STI Screening Guidance:

https://www.michigan.gov/documents/mdhhs/MDHHS_-_Non-Genital_Screening_Guidelines_for_Chlamydia_and_Gonorrhea_in_MSM_630658_7.pdf

STI Treatment Guidance:

<https://www.cdc.gov/std/tg2015/default.htm>

Expedited Partner Therapy Guidance for Providers:

https://www.michigan.gov/documents/mdhhs/Expedited_Partner_Therapy_Guidance_for_Health_Care_Providers_721276_7.pdf

Michigan HIV Resource Inventory (PDF):

http://www.michigan.gov/documents/mdhhs/HIVResourceInventory_504009_7.pdf

Michigan Viral Hepatitis Resource and Services Directory:

http://www.michigan.gov/documents/mdhhs/MI_Resource_Guide_Final_Draft_10_12_503360_7.pdf

340B STI Drug Reporting Tool Template:

https://www.michigan.gov/documents/mdhhs/STD_340B_Reporting_Template_6_18316_7.xlsx

Exposure Control Resources:

Bloodborne Pathogens and Needlestick Prevention:

<https://www.osha.gov/SLTC/bloodbornepathogens/>

OSHA Bloodborne Pathogens Standard:

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

Occupational Exposure Prophylaxis (PEP) Guidelines:

<http://www.cdc.gov/mmwr/PDF/rr/rr5409.pdf>

Non-Occupational Post Exposure Prophylaxis (nPEP) Guidance:

https://www.michigan.gov/documents/mdhhs/MDHHS_nPEP_Guidance_621166_7.pdf

Directory of Pre-Exposure Prophylaxis (PrEP) Providers:

https://www.michigan.gov/documents/mdhhs/State_of_Michigan_PrEP_Directory_515149_7.pdf

MDHHS Webpages:

Hepatitis Webpage:

www.michigan.gov/hepatitis

STI/HIV Webpage:

<https://www.michigan.gov/hivsti>

Communication Resources:

Michigan Health Alert Network:

http://www.michigan.gov/mdch/0,1607,7-132-54783_54826_56166_56167--,00.html

Outbreak Preparedness Resources:

MI-TRAIN HIV Outbreak Response Plan Training Webinar (Course 1061349):

<https://mi.train.org/DesktopModules/eLearning/CourseDetails/CourseDetailsForm.aspx?courseId=1061349>

Data Sharing Resources:

DCH-1294 Data Use Agreement (DUA):

https://stateofmichigan.sharepoint.com/teams/insidedhhs/about/Offices-Dept/PHA/Documents/DataUseNon-DisclosureAgreementForm_DCH-1294.pdf#search=DCH%2D1294

Attachment 1: Checklist of Key Outbreak Response Tasks

Action step	Lead person/agency	Date/time completed	Comments
<i>Initial Assessment</i>			
Document initial reports of outbreak			
Determine approximate number of cases & severity			
Obtain information about demographics/risk group			
Determine whether cases meet outbreak definition			
<i>Notification</i>			
Notify impacted local health department			
Notify MDHHS management and PIO			
Define response team roles			
<i>Develop surveillance plan</i>			
Develop case definition			
Identify surveillance strategies <i>Consider: Passive/Active</i>			
Define geographic/ temporal scope for surveillance			
Define data collection tools			
Define data management system			
Define data sources			
<i>Implement plan</i>			
Monitor data collection			
Data analysis/summaries			
<i>Disseminate results</i>			
Partners Public			
<i>Determine when surveillance will finish</i>			
Information on last case(s)			
<i>Intervention</i>			
Medical intervention			
Community intervention			

Attachment 2. STI Outbreak Resource Assessment List

Item	Qty	Collected		Comments
		Y	N	
Diagnostic Equipment				

Testing / Treatment Supplies

Other Supplies

Attachment 3. Outbreak Response Contact List

Contact information for the Division of HIV and STI Programs staff can be found on our website:
https://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2982-518781--,00.html

Name/Contact Information	Position	Organization
Joneigh Khaldun KhaldunJ@michigan.gov	Chief Deputy for Health Chief Medical Executive	MDHHS
Jennifer Smith SmithJ32@michigan.gov	Public Information Office (PIO)	MDHHS
Linda Scott ScottL12@michigan.gov	Bureau Director	MDHHS Bureau of EMS, Trauma and Preparedness
Jennifer Lixey Terrill LixeyTerrillJ@michigan.gov	Healthcare and Public Health Policy Specialist and Emergency Management Coordinator	MDHHS Bureau of EMS, Trauma and Preparedness
Katie Macomber MacomberK@michigan.gov	Division Director	MDHHS Bureau of Health and Wellness, Division of HIV and STI Programs
Kris Tuinier TuinierK@michigan.gov	STI Section Manager	
Mary-Grace Brandt BrandtM4@michigan.gov	STI/HIV Surveillance Section Manager	
Tiffany Henderson HendersonT1@michigan.gov	Regional Epidemiologist Unit Manager	MDHHS Bureau of Epidemiology and Population Health, Division of Communicable Diseases

Attachment 4: Outbreak Response Team Coordination Meeting

The Logistics Lead/Liaison will schedule the initial Outbreak Response Team (ORT) Coordination meeting as soon as it has been determined that a true outbreak is occurring. The Local Health Department/State Lead will facilitate this meeting to brief all parties on the current outbreak situation, and ensure that the ORT completes actions included in the agenda and checklist (included).

Agenda

Introductions:

- Name and position of each ORT member

Briefing on the Current Outbreak Situation:

- Discuss overview of outbreak situation-what defines an outbreak
- Discuss overview of local area and systems
 - Local patient population
 - Locations where high-risk activity occurs
 - Local Community Based Organizations that may be valuable partners
 - Local surveillance and disease control procedures, including surveillance data and case management, explanation/review of local case-finding mechanisms and resources, computer systems, and hard-copy record keeping
 - Listing of local health care provider resources, including local clinic and provider types, hours of operation and patient referral procedures
 - Lines of communication with the local media per the Joint Information Center's recommendation

Discussion:

- Assess resources, including what is available and what will be needed
 - Hours of operation, patient referral procedures of public clinics, and alternate health providers
 - Surge capacity
 - Mutual aid requests and anticipated requests for additional resources
- Plan control measures, including those that can be implemented immediately
 - Logistics of the testing campaign
 - Social and medical Interventions
- Review ORT roles and responsibilities, including chain of command for each role
 - Assess whether other individuals other than the ORT will need to be involved in the response
- Assess need for additional training, focusing on following areas:
 - Case, partner and cluster (i.e. non-sexual social contacts) interviewing
 - Forms and procedures for documenting case, partner, and cluster information
 - Diagnostic testing and phlebotomy
 - Data entry and analysis
 - Include flow of data with sample algorithm
- Modify appropriate timeline for the completion of assigned tasks for each team member (Microsoft Excel: *HIV OB Response Timeline*)

- Discuss communication plan (per Communications Liaison)
- Plan for after-action report/evaluation
- Identify case prioritization
 - Establish priority criteria for determining which order patients will be interviewed and counseled.
 - Consider HIV status, viral load, profile of partners (e.g., adolescent or female with a known or suspected pregnancy), pregnant females testing positive for STI, persons testing positive for an STI
- Review confidentiality protocol
 - Review who has access to which data and how it will be securely shared between ORT partners
 - Sign Oath of Confidentiality Form
 - Sign Data Use Agreement Form to assure adherence to all local, state and federal regulations
 - Review confidentiality measures including:
 - Only collecting identifying information that is essential.
 - Using the established system for secure transmission of data (i.e., DCH file transfer, shared server, fax, etc.)

Additional announcements and information:

-

Future Meeting Logistics:

The Logistics Lead/Liaison will arrange for ORT coordination meetings to occur daily throughout the outbreak response, or until the (State/Local) Health Department Lead decides that meeting frequency can decrease to twice per week. The LHD/State Lead will facilitate these daily meetings. Consider necessary meeting arrangements, such as a call-in number for those working off-site as well as room reservations when scheduling the meeting logistics. Examine resource availability, case prioritization and timeline at every scheduled meeting.

- Time:
- Location:

Action Items:

-

Meeting Action Items/Minutes

Overview Of Outbreak Situation

Outbreak Situation

Overview Of Local Area & Systems

Local patient population
Locations where high-risk activity occurs
Local CBOs that may be valuable partners
Local surveillance and disease control procedures (surveillance data and case management, explanation/review of local case-finding mechanisms and resources, computer systems, and hard-copy record keeping)
Listing of local health care provider resources, including local clinic and provider types, hours of operation and patient referral procedures
Lines of communication with the local media per JIC's recommendation

Resource Assessment

Available resources
Needed resources
Hours of operation, patient referral procedures of public clinics, and alternate health providers
Surge capacity
Mutual aid requests and anticipated requests for additional resources

Case-Finding & Control Measures

Testing Campaign (hours of operation, staff requirements, testing requirements, access to refrigerators or coolers, other resources that will be available, location, etc.)
Immediate control measures
Future control measures

ORT Roles & Responsibilities

ORT roles and responsibilities
Assessment of whether other individuals other than the ORT will need to be involved in the response

Additional Training Assessment

Case, partner and cluster (i.e. non-sexual social contacts) interviewing
Forms and procedures for documenting case, partner, and cluster information
Diagnostic testing and phlebotomy
Data entry and analysis (Including flow of data with sample algorithm)

Timeline For The Completion Of Assigned ORT Tasks

Modification appropriate timeline for the completion of assigned tasks for each team member

Communication Plan (Per Communications Liaison)

Implementation communication plan (per Communications Liaison)

After-Action Report/Evaluation

Plan for after-action report/evaluation

Case Prioritization

Established priority criteria for determining which order patients will be interviewed and counseled.
Consideration of viral load, profile of partners (e.g., adolescent or female with a known or suspected pregnancy), pregnant females testing positive for STI/HIV, persons testing positive for an STI

Confidentiality

Review which ORT members have access to which data and

how it will be securely shared
between ORT partners
Oath of Confidentiality Form
Data Use Agreement Form to
assure adherence to all local,
state and federal regulations
Review of confidentiality
measures including only
collecting identifying
information that is essential.
Use of the established system
for secure transmission of data
(i.e., DCH file transfer, shared
server, fax, etc.)

DRAFT

Attachment 6: Long-Term Recovery Plan Michigan STI Outbreak

Michigan Department of Health and Human Services
(Insert Date)
(Insert Director Name or Author Name)

Media Contact: (Insert Name)
(Insert Phone Number)
(Insert Email Address)

Briefing Document

- Current Investigation Statistics
- Continuum of Care
- Community Outreach Center Services Summary
- Goals
- Transition Planning Elements
- STI Treatment
- HIV Clinical Care for County Jail
- Mental Health, Behavioral Health, and Addiction Services
- Continuation of Community Outreach Center
- Bureau of Motor Vehicles
- Department of Workforce Development
- Immunizations
- Vital Records
- Primary Care
- HIV/HCV Testing
- Syringe Service Program
- Disease Intervention
- Care Coordination
- Public Relations/ Education Campaign
- Capacity Building for MDHHS Infectious Disease Response
- Transportation
- Overdose Intervention
- Coordinating Partners
- Media List

Spreadsheet of Health Care Providers

MDHHS Syringe Services Program Toolkit

Attachment 7: Outbreak Monitoring Program Statistical Explanation

STI Monitoring Program
Author: Christine Convery
Date: 03/01/2019

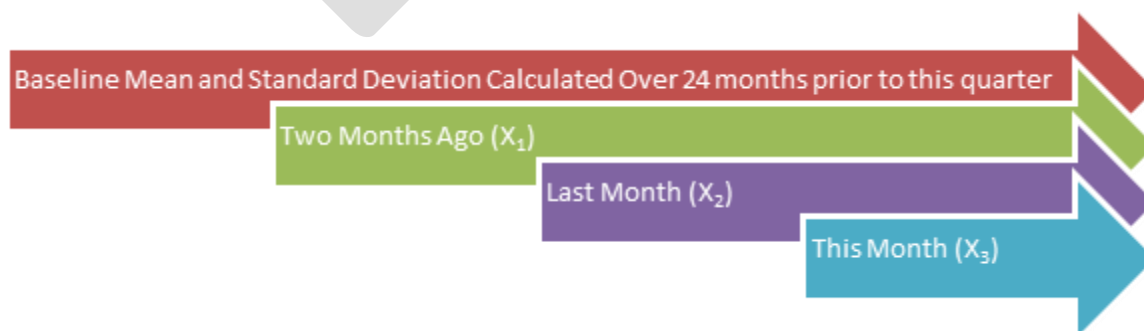
SAS programs and outputs found here: [V:\Surveillance EPI\Epidemiology\Routine Analyses\Morbidity Monitoring](#)

Background & Overview: With the recent outbreak of HIV among IDUs in southern Indiana, and increasing cases of STIs nationwide, there is pressure to more closely monitor new diagnoses on a more frequent basis. The purpose of these programs is to flag any county, city or demographic group demonstrating a change in *the number* of STI diagnoses (note: does not use *rates* or account for underlying population changes). The number of new dx is deemed an acceptable comparison because a) new census data are not available on a quarterly bases and b) the underlying population remains relatively constant over a 2.5 year period (the amount of data reviewed to generate each month's report).

Flagged regional and demographic groups will be reviewed by surveillance staff. Groups of interest will be investigated further, and if deemed appropriate, a special report regarding the flagged group may be released.

Method: Western Electric Rules (WER) are used to flag regional and demographic groups with STI diagnosis changes. WER were created to flag “out of control” points based on the method already in use by HIV Surveillance. These points are found by calculating the mean and standard deviation of the data of interest. The rules are flexible in terms of the user's definition of “out of control”—it may require that multiple consecutive points must fall outside the limit and/or all fall outside the same limit (upper or lower, but not cross the mean), etc.—it's up to the user (see figure at the end of this document). *WER are described on page 3.*

The monthly mean and standard deviation of the two (2) years falling between three (3) and twenty-seven (27) months ago will be the standard against which the preceding three (3) months will be assessed. In the example below, the number of new diagnoses in Q2, Q3, and Q4 of year 3 (X_1 , X_2 , and X_3) will individually be compared to the mean/std dev of new diagnoses occurring between Q2 of year 1 and Q1 of year 3.



A regional or demographic group is flagged as fitting phase criteria if any 1 point (X_1 , X_2 or X_3) is more than 3σ (standard deviations) from the baseline mean.

The same criteria are used to evaluate early syphilis (710, 720, and 730 combined), gonorrhea, chlamydia, and LGV.

Additional special populations may be added to the flagging program as needed, but the baseline flagging programs look at:

- DIS Regions

- LHDs

 - LHD x age group

 - LHD x race

 - LHD x sex

 - LHD x risk

Output: The 11 quarters of HIV diagnosis counts for flagged regional and demographic groups are plotted (if no group was flagged, the output will have a line at 0). A label at the top indicates what the case count is and the legend at the bottom indicates what the population is. A table is also output for every population group with a flag.

Example output: