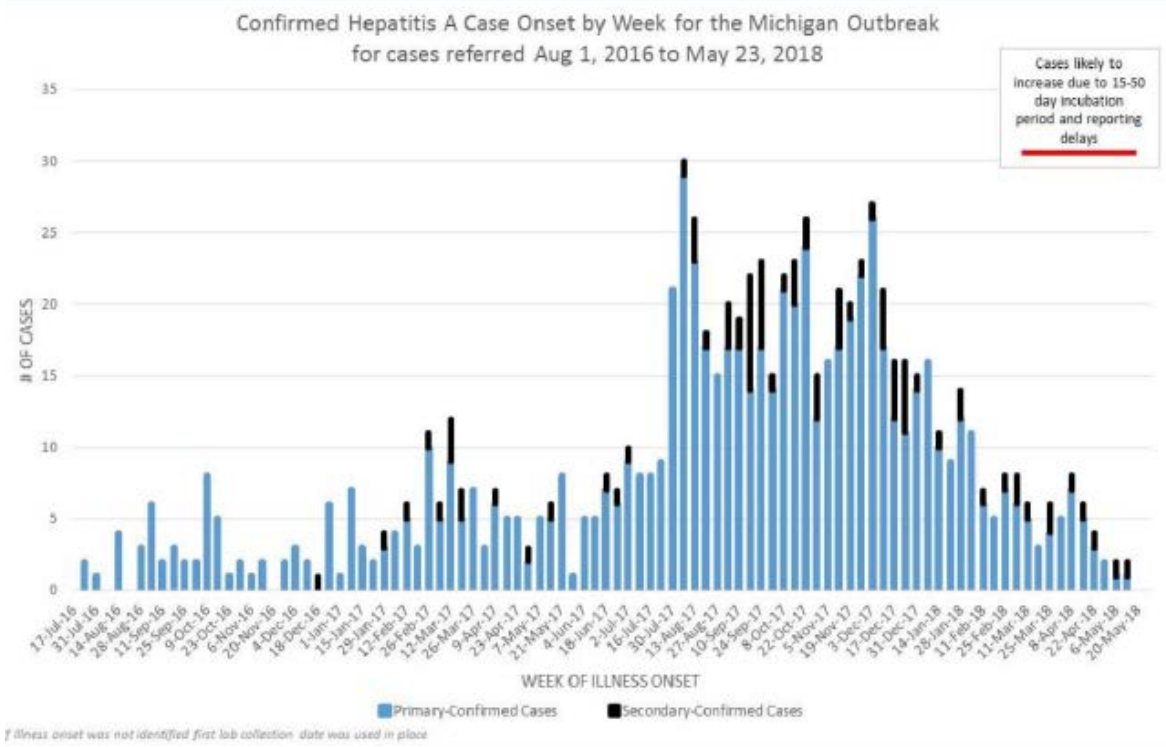
Domain 6: Strengthen Biosurveillance

Situational Awareness & Epi Update

BETP
Bureau of EMS, Trauma & Preparedness
2018 LHD & Tribal EPC Annual Meeting
Treetops Resort Gaylord, MI

Domain 6: Strengthen Biosurveillance Current Outbreaks - Statewide

Hepatitis A Outbreak – Michigan, 2016-2018



837 cases
671 (80%) hospitalized
27 (3%) deaths

www.michigan.gov/hepatitisAoutbreak

Domain 6: Strengthen Biosurveillance Current Outbreaks - Statewide

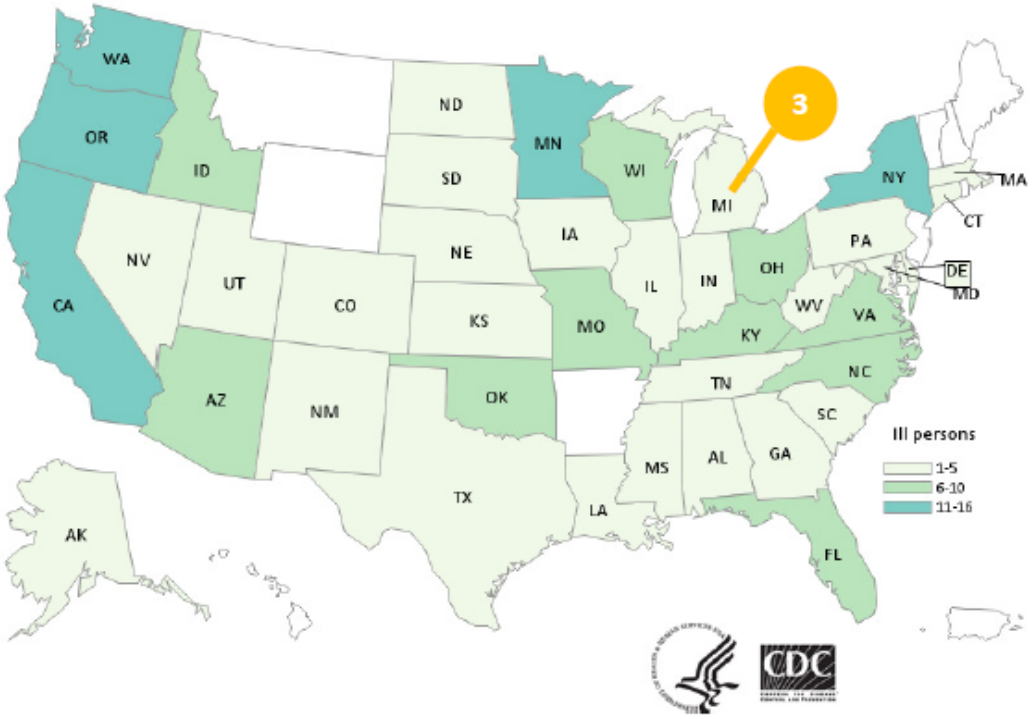
Hepatitis A Outbreak Epidemiology

- 65% male, median age 40 yrs (<1-90)
- 378 (50%) Substance abuse
- 101 (13%) Homeless/transient living
- 75 (15%) Men who have sex with men
- 58 (8%) Correctional facility inmates
- 23 (3%) Healthcare workers
- 35 (5%) Food workers

Domain 6: Strengthen Biosurveillance Current Outbreaks - National

Salmonella Infections Linked to Kratom

- 199 cases
- 41 states
- 38% hospitalized
- No reported deaths
- Onset Jan 11 – May 8
- 52% male
- Median age 38 years (<1-75)
- Serotypes
  - I 4,[5],12:b:-
  - Javiana
  - Okatie
  - Thompson
  - Weltevreden



As of May 24, 2018

Domain 6: Strengthen Biosurveillance Current Outbreaks - National

What is kratom?

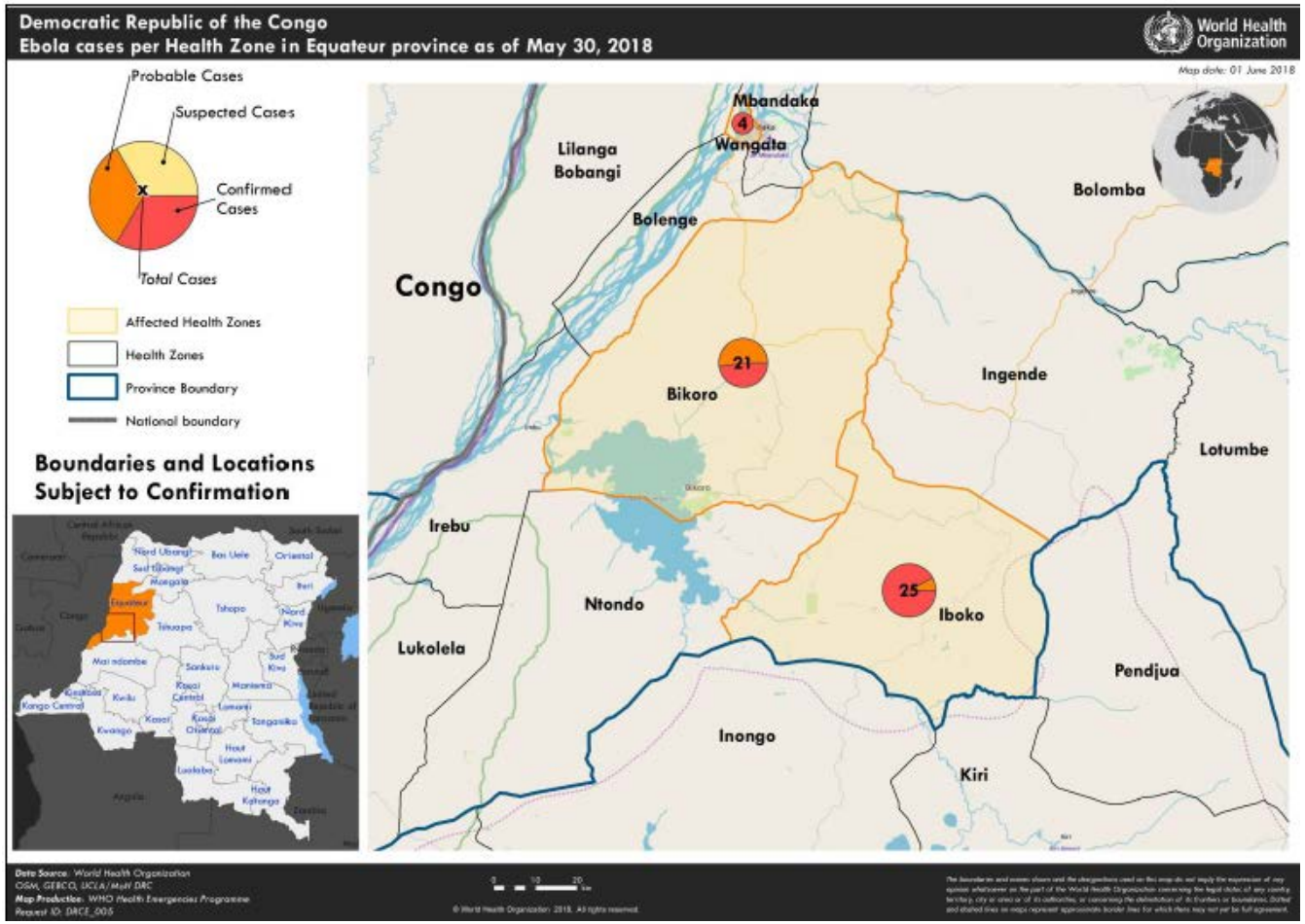
- Tropical tree native to Southeast Asia, with leaves that can have psychoactive effects
- Currently legal in MI
- Consumed in pills, powders, leaves
- Purchased at retail locations and online

Domain 6: Strengthen Biosurveillance
Current Outbreaks – International

Ebola Outbreak – Democratic Republic of Congo

- Outbreak declared May 8, 2018
- Case Count: 53
- Deaths: 25
- Located in:
  - Bikoro, Iboko
  - Mbandaka

Domain 6: Strengthen Biosurveillance
Current Outbreaks – International



Domain 6: Strengthen Biosurveillance

- As defined by Homeland Security Presidential Directive 21:
- Biosurveillance involves active data-gathering with appropriate analysis and interpretation of biosphere data that might relate to disease activity and threats to human or animal health – whether infectious, toxic, metabolic, or otherwise, and regardless of intentional or natural origin – to achieve early warning of health threats, early detection of health events, and overall situational awareness of disease activity

Domain 6: Strengthen Biosurveillance

- PHEP awardees must ensure coordination among preparedness, laboratory, and epidemiology programs through the following activities to strengthen biosurveillance.
  - Conduct laboratory testing
  - Conduct epidemiological surveillance and investigation
  - Detect emerging threats and injuries
- Domain 6 Associated Capabilities:
  - Capability 12: Public Health Laboratory Testing
  - Capability 13: Public Health Surveillance and Epidemiological Investigation
- Domain 6 Performance Measures
  - 12.1, 12.2, 12.5, 12.6, 12.7, 12.11, 12.14, 12.15
  - 13.1, 13.2

Domain 6, Capability 12: Public Health Laboratory Testing

Definition:

- Public health laboratory testing is the ability to conduct rapid and conventional detection, characterization, confirmatory testing, data reporting, investigative support, and laboratory networking to address actual or potential exposure to all-hazards.
- Hazards include chemical, radiological, and biological agents in multiple matrices that may include clinical samples, food, and environmental samples (e.g., water, air, and soil).
- This capability supports routine surveillance, including pre-event or pre-incident and post-exposure activities.

Domain 6, Capability 13:
Public Health Surveillance & Epidemiologic Investigation

Definition:

- Public health surveillance and epidemiological investigation is the ability to create, maintain, support, and strengthen routine surveillance and detection systems and epidemiological investigation processes, as well as to expand these systems and processes in response to incidents of public health significance

Domain 6: Strengthen Biosurveillance

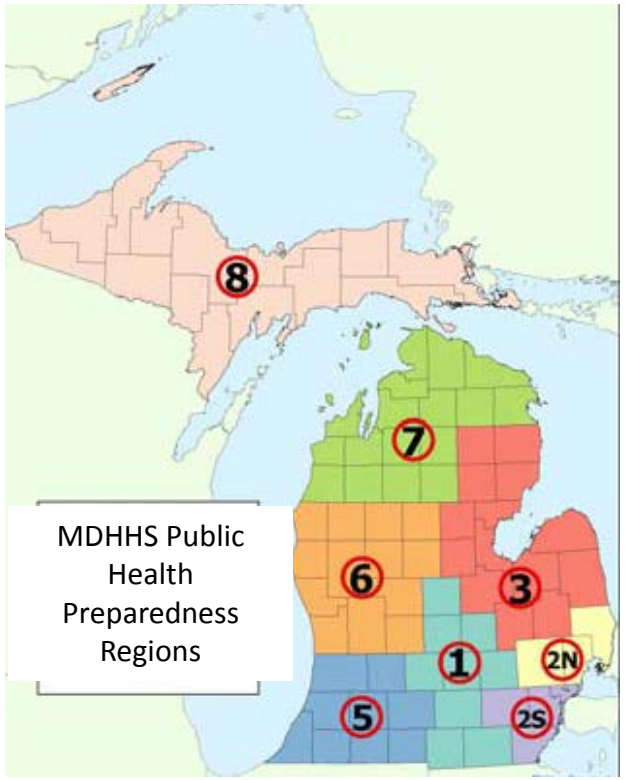
MDHHS Support

- Non-infectious Disease Surveillance and Support
  - Environmental Health
    - Non-confidential surveillance data for non-infectious conditions on the Michigan Tracking Data Portal (public) including annual summaries on health effects from metals, carbon monoxide, pesticides, and other environmental exposures
    - Receive, process, store, and transmit electronic blood lead lab reports to LHDs
    - Surveillance on populations exposed to chemical releases in incidents of PH surveillance
    - EH emergency responders participate in events or exercises after receiving training in Hazwoper, the MDHHS chemical emergency surveillance response plan, and operations of the CHECC
    - Emerging issues include Vapor Intrusion and PFAS
  - Radiation Preparedness (Epi component)
    - Coordinate MDHHS KI Dispensing Program with MDHHS EMC
    - Preparedness Epidemiologist participation on NARR workgroup

Domain 6: Strengthen Biosurveillance

MDHHS Support

- Epi Surveillance and Outbreak Assistance
  - Protocol Development (internal and guidance)
- Support Personnel
  - On-call staff
  - Preparedness Epidemiologist
    - Biological, Chemical, Radiological, and Natural Disaster Response Guidelines and Plans along with MDHHS EMC
    - CHECC EpiDesk Planning and Operations Coordinator
    - Represent BEPH in the CSTE Disaster Epi Workgroup
    - MDHHS lead for conducting CASPERs
  - Regional Epidemiology Unit



MDHHS Public Health Preparedness Regions

Domain 6: Strengthening Biosurveillance

Michigan Surveillance Systems

- Michigan Disease Surveillance Systems (MDSS)
  - System updates
  - On-boarding Electronic Laboratory Reporting
  - Future additions: Electronic Death Reporting, Electronic Case Reporting
- Michigan Syndromic Surveillance System (MSSS)
  - Syndromic Categories
  - EpiAlerts
  - Special Surveillance
- Outbreak Management System (OMS)
  - Electronic system to manage outbreak-level information for routine outbreaks and monitoring events

Domain 6: Strengthen Biosurveillance MDSS

MDSS TEST APPLICATION
Department of Community Health

Case Investigation | Logout

Cases
New Case
New Aggregate Cases
Searches
New Search
New Aggregate Search
Disease Specific Search
Search Field Records
Case Definitions
Alert Rules
Display Supplemental Forms
User Profile
User Directory

Displaying
[|< First]

Case Li
Investigat Status
New
Active
Active
New
Active
New
New
New
Active

Help
Edit
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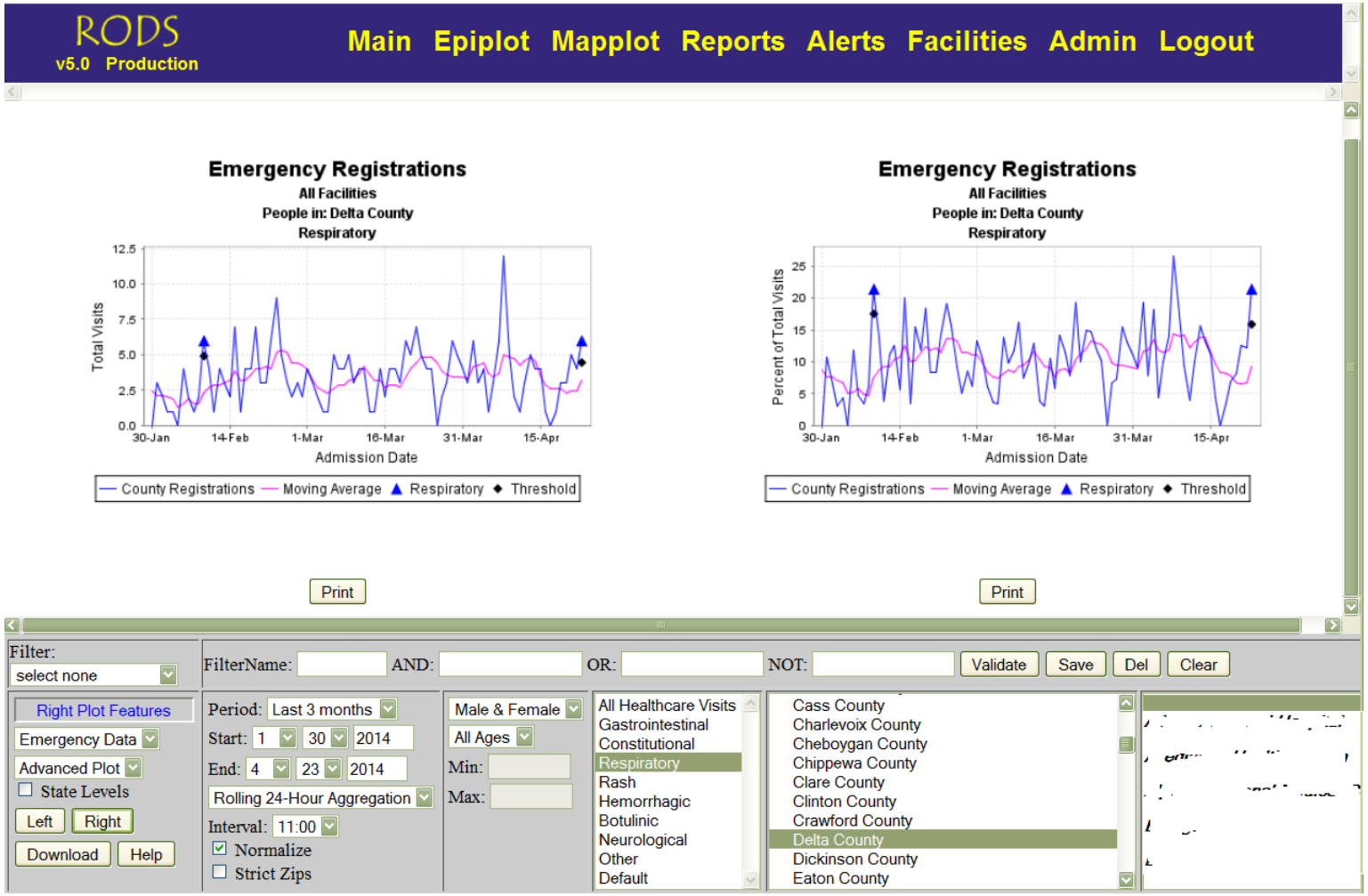
High Risk Food Exposure

Ask about the following specific food exposures for the 7 days prior to onset. If multiple exposures are identified, list additional details in other food history or comments sections.

Any raw eggs? ◯ Yes ◯ No ◯ Unknown ◯ Typically eats	If Yes, Describe (brand, type, etc):	If Yes, Where and when purchased:
Any ground meats (turkey, chicken, beef, pork) ◯ Yes ◯ No ◯ Unknown ◯ Typically eats	If Yes, Was the ground meat eaten raw, bloody, or pink? ◯ Yes ◯ No ◯ Unknown ◯ Typically eats	
If Yes, Product details (type, bulk/patties, package size, grind)	If Yes, Where purchased:	If Yes, Date purchased: / If Yes, Date consumed:
Any home-prepared chicken? ◯ Yes ◯ No ◯ Unknown ◯ Typically eats	If Yes, Describe (brand, type, etc):	If Yes, Where and when purchased:
Any frozen chicken items? ◯ Yes ◯ No ◯ Unknown ◯ Typically eats	If Yes, Product details (breaded, pre-browned, stuffed, etc):	If Yes, Where and when purchased:
Deli Style meats (incl. Salami, etc)? ◯ Yes ◯ No ◯ Unknown ◯ Typically eats	If Yes, Describe (brand, type, etc):	If Yes, Where and when purchased:

Domain 6: Strengthen Biosurveillance MSSS



Domain 6: Strengthen Biosurveillance MSSS

Emergency Department Syndromic Surveillance Summary

Statewide and County Specific Activity – Current Trends

	Statewide	Grand Traverse	Benzie	Leelanau	Antrim
Gastrointestinal	Increasing	Stable	Decreasing	Stable	Stable
Constitutional	Stable	Increasing	Stable	Stable	Stable
Respiratory	Stable	Stable	Stable	Stable	Stable
Rash	Decreasing	Stable	Stable	Stable	Stable**
Hemorrhagic	Stable	Stable	Stable	Stable	Stable
Botulism	Stable	Stable	Stable	None	Stable
Neurological	Stable	Increasing	Stable	Increasing	Increasing
Heat-Related	Stable	Stable	Stable	None	Stable

Color Legend

	Responding to high magnitude outbreak / severe situation
	Monitoring due to unusual patterns in data; potential for concurrent disease clusters
	Expected Activity
	Not Concerned

Text Legend

Increasing	Activity increased since last report
Stable	Activity remained stable since last report
Decreasing	Activity decreased since last report
None	No activity since the last report

** indicates that an alert has sounded since our previous report

Emergency Department Syndromic Surveillance Trend Details

Domain 6: Strengthen Biosurveillance Outbreak Management System (OMS)

- Support State & LHDs in centralized, electronic management of outbreak events, based on needs identified during H1N1 & Ebola traveler monitoring
- Support routine investigations, flexible to accommodate dynamic PH responses
- Outbreaks in OMS can be classified as investigations or monitoring
  - Investigation events: administration of outbreak-specific questionnaires
  - Monitoring events: data point collection at the outbreak and individual level
- OMS can aggregate outbreak-specific data for a range of purposes
  - Contact tracing, epidemiologic analyses, inform public health interventions, reporting

Domain 6: Strengthen Biosurveillance Outbreak Management System (OMS)

MDHHS

Michigan.gov

Administration | Contacts | Reports | Logout

- Outbreak List
- New Outbreak
- Import Contacts
- Condition Management
- Questionnaire Management

Outbreak List

Filter | Reset

Sort By: --Sort--

Filter By: --Condition-- --Type-- --Status--

Outbreak Name	Outbreak Type	County	Condition	Outbreak Status	Creation Date	Completion Date
EBOLA-WAYNE-2017	Monitoring	State-Level	Ebola	New	09/14/2017	
EBOLA-STATEWIDE-2017	Monitoring	State-Level	Ebola	New	09/29/2017	
ZOMBIEVIRUS-2017-STATEWIDE	Monitoring	State-Level	Zombie Virus	Active	09/30/2017	
HESSIAN FEVER - 2017 - FRANKENMUTH	Monitoring	Genesee, Lapeer, Oakland, Saginaw	Hessian Fever	New	10/03/2017	
ZOMBIEVIRUS-2017-OAKLAND	Monitoring	Livingston, Oakland	Zombie Virus	Active	10/05/2017	
SWINE FLU-2017-STATEWIDE	Monitoring	State-Level	Influenza	New	10/05/2017	

Contact Name: RICK GRIMES
Outbreak Name: ZOMBIEVIRUS-2017-STATEWIDE
Contact Id: 23898
Start Monitoring Date :09/30/2017
End Monitoring Date : 10/28/2017

1 - 09/30/2017	
Temperature:	98.0
Altered cry:	No
Chills/rigors:	Yes
Coma/stupor:	No
Confusion/altered mental status:	No
Fatigue/lethargy/weakness:	No
Fever:	No
Headache:	Yes
Loss of appetite (anorexia):	No
Malaise:	No
Slurred speech:	No
Sweating:	No
2 - 10/01/2017	
Temperature:	99.0

Edit

Domain 6, Capability 13 Performance Measures

- Select diseases:
  - Shiga toxin producing *E. coli* (STEC)
  - Botulism
  - Tularemia
  - Hepatitis A
  - Measles
  - Meningococcal disease
- 13.1: Percentage of reports of selected reportable diseases received by a public health agency within the awardee-required timeframe
- 13.2: Percentage of reports of selected reportable diseases for which initial public health control measure(s) were initiated within the appropriate timeframe

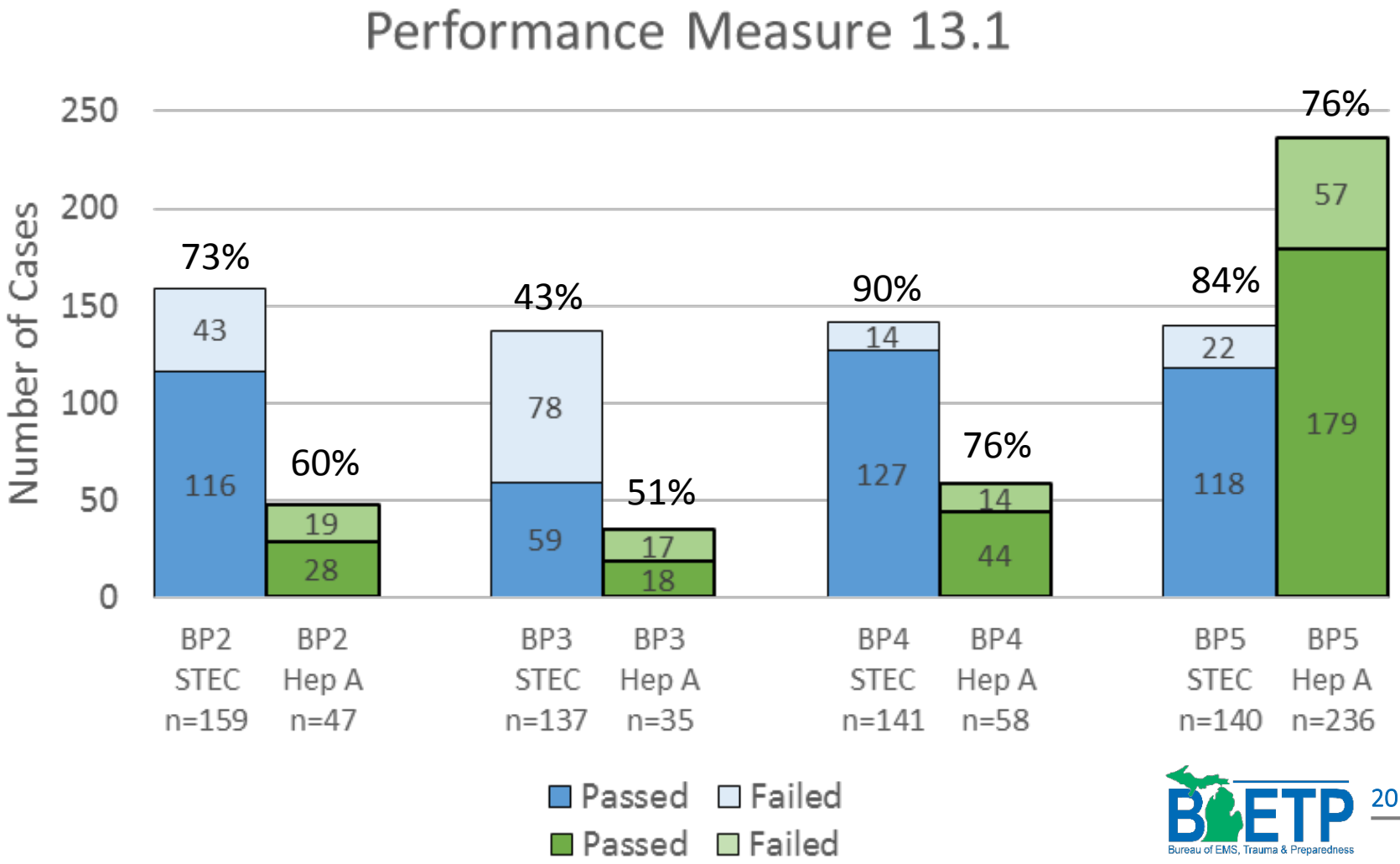
Appendix C: Examples of Public Health Control Measures for the Selected Six Diseases

Disease agent	Example control measures	Initiation timeframe
Botulism	Identification of potentially exposed individuals Identification / recovery of suspected source of infection, as applicable	Within 24 hours of initial case identification
E. coli (STEC)	Contact tracing Education: contacts as applicable Exclusions: child care, food handling as applicable	Within 3 days of initial case identification
Hepatitis A, Acute	Contact tracing Education: contacts Immunization (active/passive) administered or recommended to contacts, as appropriate	Within 1 week of initial case identification
Measles	Contact tracing Education: contacts Immunization (active/passive) administered or recommended for susceptible individuals Isolation: confirmed cases	Within 24 hours of initial case identification
Meningococcal Disease	Contact tracing Education: contacts Prophylaxis administered or recommended for susceptible individuals	Within 24 hours of initial case identification
Tularemia	Identification of potentially exposed individuals Identification of source of infection, as applicable	Within 48 hours Within 48 hours of initial case identification

Domain 6, Capability 13
Performance Measures 13.1

13.1	BP2 (2013-14)	BP3 (2014-15)	BP4 (2015-16)	BP5 (2016-17)
STEC	116/159 (73%)	59/137 (43%)	127/141 (90%)	118/140 (84%)
Hep A	28/47 (60%)	18/35 (51%)	44/58 (76%)	179/236 (76%)
Measles	0/3 (0%)	3/6 (50%)	N/A	N/A
Botulism	N/A	N/A	N/A	N/A
Tularemia	N/A	0/2 (0%)	N/A	N/A
Mening	3/7 (43%)	7/10 (70%)	3/5 (60%)	6/7 (86%)

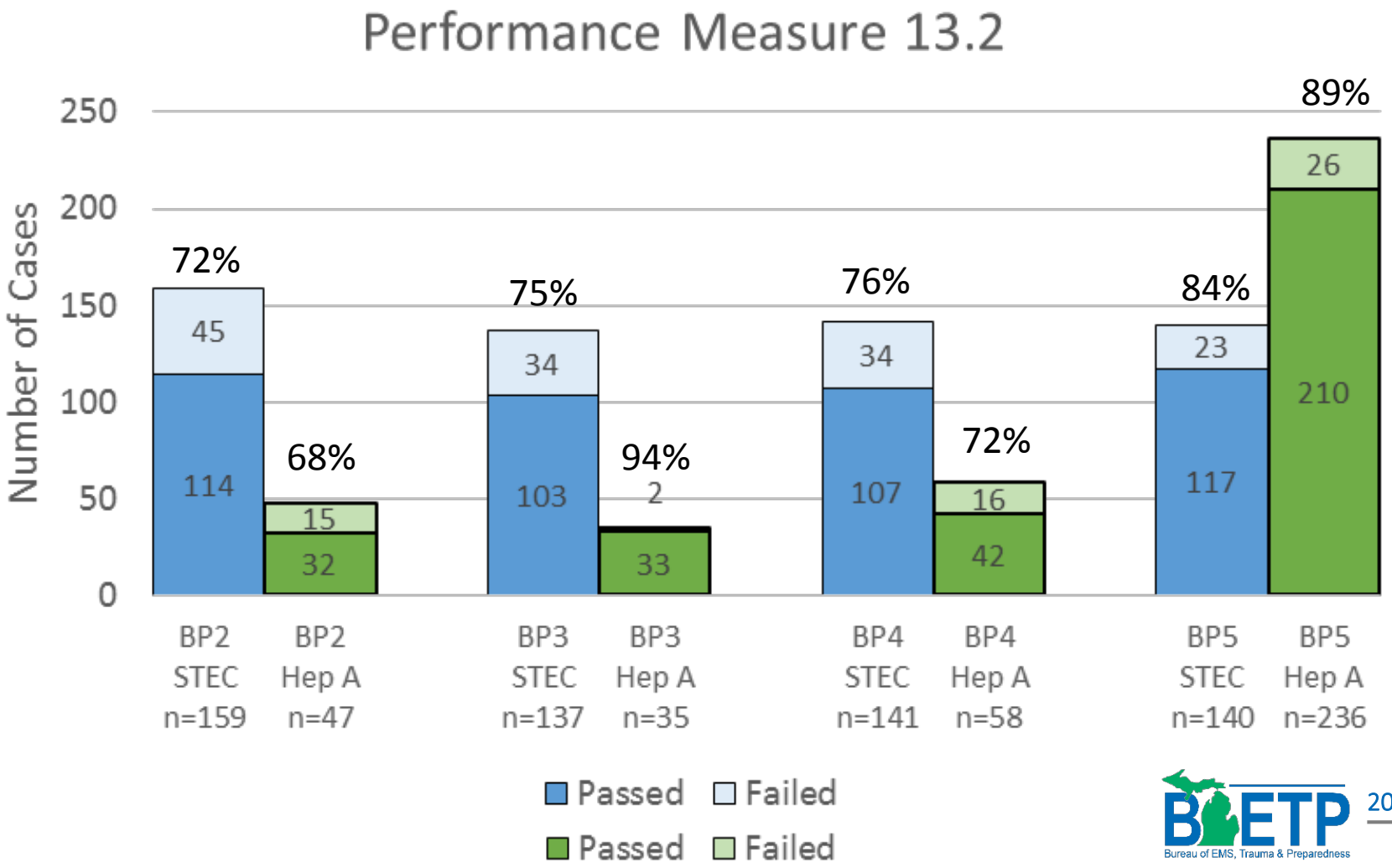
Domain 6, Capability 13
Performance Measures 13.1



Domain 6, Capability 13
Performance Measures 13.2

13.2	BP2 (2013-14)	BP3 (2014-15)	BP4 (2015-16)	BP5 (2016-17)
STEC	114/159 (72%)	103/137 (75%)	107/141 (76%)	117/140 (84%)
Hep A	32/47 (68%)	33/35 (94%)	42/58 (72%)	210/236 (89%)
Measles	3/3 (100%)	4/6 (67%)	N/A	3/3 (100%)
Botulism	N/A	N/A	N/A	N/A
Tularemia	N/A	2/2 (100%)	N/A	1/1 (100%)
Mening	7/7 (100%)	10/10 (100%)	5/5 (100%)	7/7 (100%)

Domain 6, Capability 13
Performance Measures 13.2



Domain 6: Strengthen Biosurveillance

Epi Work Plan

- Epi Work Plan: Enhanced Analysis, Epi-X, MDSS, and MSSS
- PHEP named as an integral part of the Epi Work Plan as of 2010-11
- 1st inclusion of PM 13.1, 13.2 in Epi Work Plan occurred in 2013-14
- 13.1 and 13.2 activities occurred over time, involving LHDs in the process of improving timeliness and appropriate control measures
- Future Epi Work Plan will continue to include 13.1, 13.2 performance measures and may include tasks involving the new OMS

Domain 6: Strengthen Biosurveillance Quick Assessment

- Pre-meeting survey:
  - What's happening at the statewide level
  - Regional epidemiologists are a valued resource
  - What are ways to connect EPCs, CD, EH

Communicable Disease Involvement

- Do you attend any local or regional communicable disease meetings?
- Are you involved in meetings to discuss improving communicable disease reporting?
- Are you involved in meetings to discuss triggers for HANs or Public Notifications?
- Are you involved in the review process for policies and procedures on outbreaks or significant public health responses (CD or EH)?
- If you want more information on communicable disease trends and current outbreaks, would you ask:
  - Health Officer or Medical Director
  - CD colleagues
  - Regional Epidemiologist

Michigan Surveillance Systems

- Prior to this meeting, were you aware of the MDSS (Michigan Disease Surveillance System) and the MSSS (Michigan Syndromic Surveillance System)?
- Does your jurisdiction receive any Special Event Surveillance or do you ever receive summaries of EpiAlerts?

- Prior to this meeting, were you aware of the Outbreak Management System?
- Were you aware that this system could be used for monitoring travelers?

Outbreaks & Public Health Response Exercises

- Have you been involved in an exercise related to an infectious disease outbreak or public health response in the last 5 years?
  - Last 3 years?
  - Last year?

- Are you planning an infectious disease outbreak/response exercise in the next year?

Outbreaks & Public Health Responses

- Have you been involved in an infectious disease outbreak or infectious disease public health response in the last 5 years?
  - Last 3 years?
  - Last year?

- Excluding Hepatitis A, have you been involved in an infectious disease outbreak or public health response in the last year?

- Have you issued a HAN because of an infectious disease outbreak or public health response in the last 3 years?

Epi Work Plan

- Are you aware of the Epi Work Plan?
- Do you coordinate the process with CD colleagues & DEPR?
- Do you actively work on the Epi Work Plan (excluding the Enhanced Analysis)?
- Do you actively work on the Enhanced Analysis of the Epi Work Plan?

BP1 2017-18 Epi Work Plan
Due: August 1, 2018

Introduction

Work plan items continue to be developed in accordance with the Public Health Emergency Preparedness (PHEP) cooperative agreement. Specifically, these items are designed to address the priority Resources Elements found in the four Functions of Capability 13: Public Health Surveillance and Epidemiologic Investigation in the Public Health Preparedness Capabilities: National Standards for State and Local Planning Document. The four Functions are listed below:

1. Conduct public health surveillance and detection
2. Conduct public health and epidemiologic investigations
3. Recommend, monitor, and analyze mitigation actions
4. Improve public health surveillance and epidemiologic investigation systems

The functions are assessed through the following measures:

- **PHEP 13.1**: Proportion of reports of selected reportable diseases received by a public health agency within the awardee-required time frame
- **PHEP 13.2**: Proportion of reports of selected reportable diseases for which public health control measure(s) were initiated within the appropriate timeframe

Next Steps

Group discussion

- What else would you like to receive
- Survey results
- How to collaborate
- Increase transparency

Domain 6: Strengthen Biosurveillance

Activity 1: Conduct Epidemiological Surveillance

- PH Informatics – consider updating systems
  - Enhance PH information system workforce
  - Advance electronic information exchange
- Electronic Death Registry
  - **Must** ensure developing or advancing state-based EDR systems, if using PHEP funds see FOA
- Border Health Surveillance – **must** conduct activities that enhance border health
- Disaster Epidemiology Training – recommended to participate in disaster epi training initiatives (Rapid Response Registry (RRR); Emergency Responder Health Monitoring and Surveillance System (ERHMS), incorporate Assessment of Chemical Exposures (ASTDR/ACE) into training)
- Collaborate with Poison Control Centers

Activity 2: Detect Emerging Threats and Injuries

- CBRNE response plans
- Senior Health Officer Input Letter – must submit, see FOA

Activity 3: Conducting Laboratory Testing

- LRN-B, LRN-C, LRN-C Equipment requirements (level 1 and level 2 labs only)

Questions?

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