

Communicable Disease Recognition and Reporting

Brian Hartl, MPH

Epidemiologist

Communicable Disease Unit



Kent County Health Department

Objectives

- How infections are spread
- Types of illnesses
 - Symptoms to look for
 - Exclusion Recommendations
- Disease Reporting

How Infections Are Spread

- **Fecal-oral:** Contact with human stool
- **Respiratory:** Contact with droplets from the nose, throat and mouth.
- **Direct skin to skin contact:** Contact with infected skin or contaminated items
- **Bloodborne:** Contact with blood or body fluids

Myths and Facts

- Myth: You are more likely to spread germs by kissing and hugging rather than shaking hands.
- Fact: Unless people wash their hands EACH TIME they cough or sneeze, they are more likely to spread germs with their hands



Wash Your Hands Properly and Often!!!!

Examples of illnesses

- **Fecal-oral:** Hepatitis A, *Salmonella*, *E. coli*, Norovirus, *Shigella*
- **Respiratory:** Influenza, Meningitis, Whooping Cough, Colds
- **Direct skin to skin contact:** (rash like illnesses): Scabies, Chicken Pox, Impetigo, MRSA, pink eye, lice
- **Bloodborne:** Hepatitis B, Hepatitis C, HIV

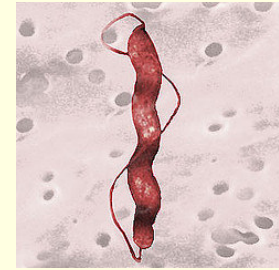
Gastrointestinal Illness



Symptoms To Look For

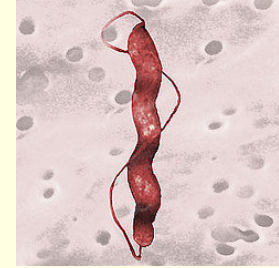
- Stomach cramps
- Diarrhea (with or without blood)
- Nausea/vomiting
- Fatigue
- Fever

Campylobacter



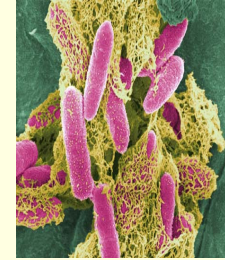
- The most common cause of bacterial gastroenteritis in the U.S.
- A very small number of organisms (fewer than 500) can cause illness in humans
- Contact with infected pets (especially puppies and kittens) or farm animals
- Almost all raw poultry is contaminated with campylobacter
- Unpasteurized milk also a common source

Campylobacter



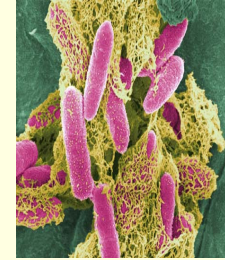
- Spread from person to person is unusual
- Exclusion Recommendation: 48 hours after treatment initiated or until asymptomatic, whichever is shorter

E. Coli O157:H7



- The major source for human illnesses is cattle
- Ingestion of contaminated food or water
- Contaminated unpasteurized items such as raw milk or cider pose a greater risk
- Bloody diarrhea
- Also non O157:H7 shiga-toxin producing strains (STEC)

E. Coli O157:H7



- Person to person spread through poor hand washing and contamination
- Exclusion Recommendation: Until 2 successive negative stool samples (collected 24 hours apart and not sooner than 48 hours after last dose of antimicrobials) or until 10 days after symptoms end
- Exclusion applies to children and staff

Salmonella



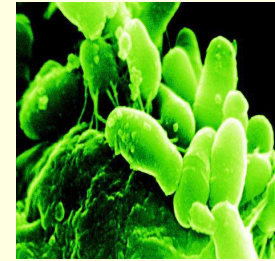
- Salmonellosis is more common in the summer than winter
- Inadequately cooked food (poultry, eggs)
- Children are the most likely to get salmonella. The rate of diagnosed infections in children less than five years old is about five times higher than the rate in all other persons
- Young children, the elderly, and the immunocompromised are the most likely to have severe infections
- CDC estimates that 74,000 cases of Salmonella per year are associated with exposure to reptiles or amphibians (directly or indirectly)
- Nationwide outbreaks associated with veggie snacks, jalapeño peppers, peanut butter, and eggs.

Salmonella



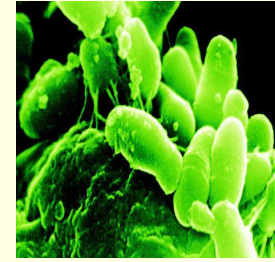
- Infants pose a greater risk of transmission
- Exclusion recommendation: until diarrhea stops

Shigella



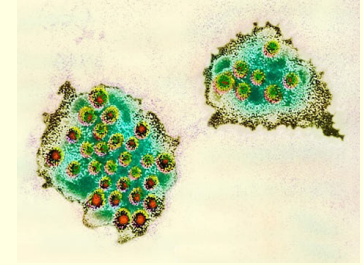
- Humans are the only reservoir for the bacteria
- Very small infectious rate. 10-100 organisms can cause infection
- Children in daycare centers and nurseries are most at risk for infection
- Disease occurs worldwide with no seasonal incidence

Shigella



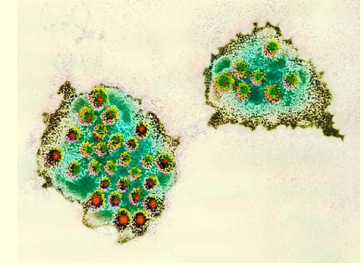
- Exclusion Recommendation: until 2 negative successive stool samples or after completion of 5 days of antibiotics.
- Applies to children and staff

Norovirus



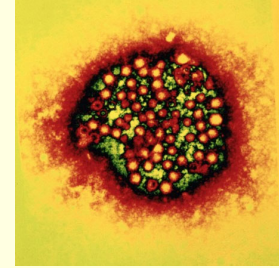
- Most common cause of non-bacterial GI outbreaks
- Small number of viral particles required to cause illness
- Incubation period: 24-48 hours
- Illness duration: 24-48 hours
- High rate of secondary transmission
- Be aware of “public vomiting incidents”
- Bleach-based solution required for cleanup

Norovirus



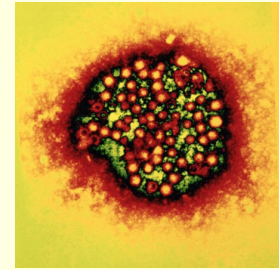
- Exclusion Recommendation: until 48 hours after symptoms stop
- KCHD will assist with epidemiologic investigation, including specimen collection and testing, and provide guidance on cleaning

Hepatitis A



- Long incubation period (28-30 days)
- Symptoms: Fever, lack of appetite, nausea, abdominal discomfort, jaundice
- Childhood infection is asymptomatic or mild
- Transmission most effective one week prior and a few days after onset of jaundice
- Prolonged viral excretion (up to 6 months) has been documented in infants and children

Hepatitis A



- Exclusion Recommendation: Exclude until 7 days after onset of illness
- Post-exposure prophylaxis (with vaccine or immune globulin) for un-immunized close contacts

Respiratory Illness



Symptoms to Look For

■ **Respiratory**

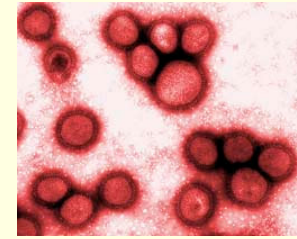
- Runny nose
- Sneezing
- Coughing
- Headache
- Fever
- Sore throat
- Difficulty breathing
- Shortness of breath
- Pain or tightness in chest
- Swelling of the sinuses

A Cold or the Flu?

- In general, flu symptoms are more severe than cold symptoms
- The flu usually starts very suddenly with a high fever, chills, body aches and tiredness

Symptoms	Influenza	Cold
Fever	Usual, high (100-102, sometimes higher)	Rare
Headache	Common	Rare
General Aches/Pains	Usual, often severe	Slight
Fatigue/Weakness	Usual, can last up to 3 weeks	Sometimes
Extreme Exhaustion	Usual, at the beginning of illness	Never
Stuffy, runny nose	Sometimes	Common
Sneezing	Sometimes	Usual
Sore throat	Sometimes	Common
Cough	Common, can become severe	Common, hacking
Chest Discomfort	Common	Mild to moderate

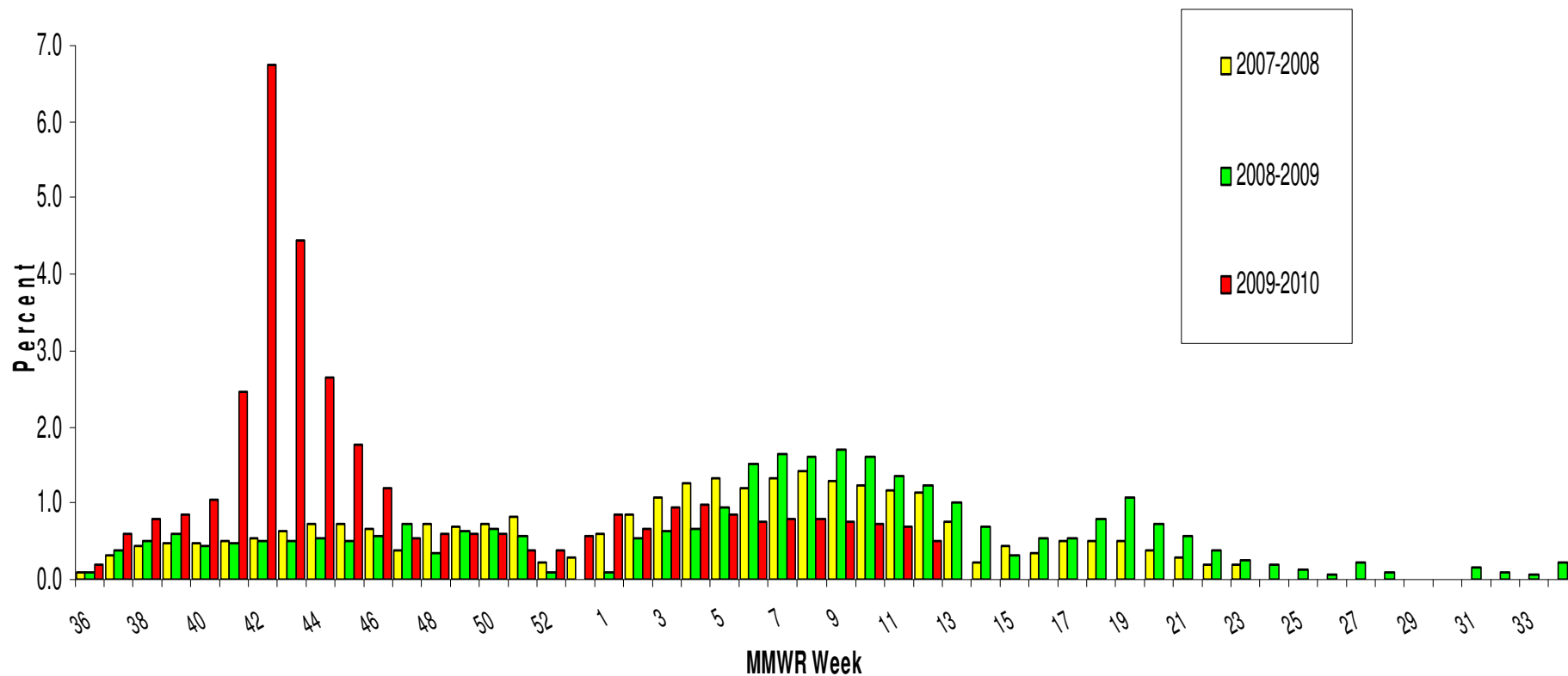
Influenza



- Illness more severe for very young, elderly, or those with pre-existing health conditions
- Yearly, 5-20% of population get the flu
- Annually causes >200,000 hospitalizations in the US
- ~24,000 deaths yearly in US (90% in those >65 years old)
- Exacerbates other conditions (like asthma)
- Exclusion Recommendations: until fever-free for 24 hours w/o use of medications

Influenza-Like Illness

Percentage of School & Daycare Center Attendees With Influenza-like Illness* as Reported to the Kent County Health Department



* Influenza-like Illness (ILI) is defined as any child with pneumonia or fever and any of the following symptoms: sore throat, cough, generalized aching in the back or limb muscles. **Vomiting and diarrhea alone is NOT respiratory flu.**

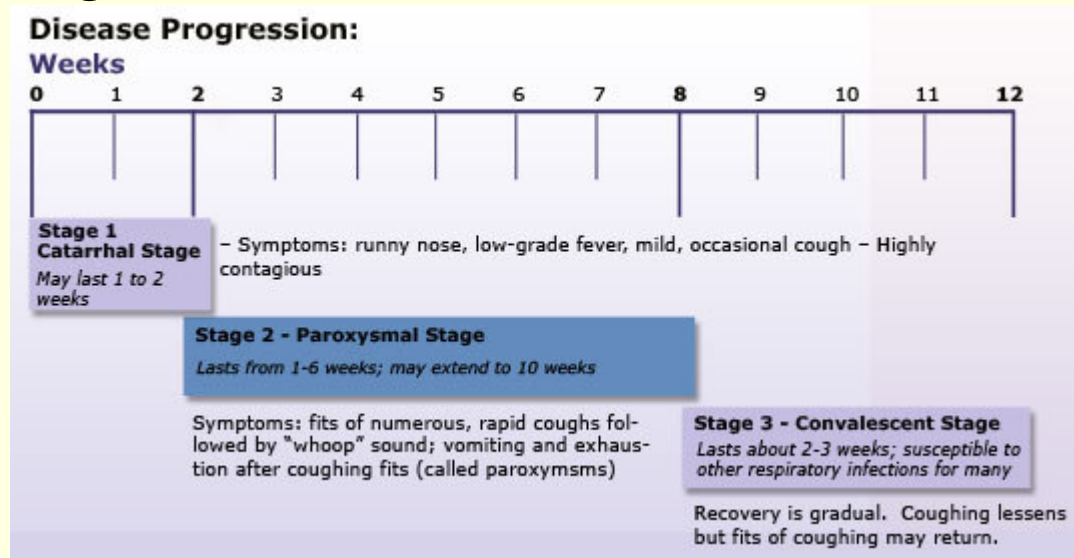
Meningitis – Viral vs. Bacterial

- Similar Presentations
 - Headache, stiff neck, photophobia, fever
- Similar treatment upon presentation to HCP
 - Will begin antibiotic therapy until bacterial is ruled out
 - Spinal tap
- Concerned if culture reveals evidence of *Neisseria meningitidis* or *Haemophilus influenzae* type b (Hib)
 - Gram negative stain
 - Positive culture
- KCHD will perform contact tracing and arrange for post-exposure prophylaxis (PEP)

Pertussis



- Highly contagious
- Three stages of cough
- First stage similar to the common cold, but is the stage at which patients are most contagious



Pertussis



- Can cause serious complications in infants and young children, especially those not fully vaccinated
- 50% of those less than 1 require hospitalization
- KCHD performs contact tracing and arranges PEP
- Recent outbreaks

Pertussis



- Exclusion Recommendation: until completed 5 days of antibiotic treatment.
- Cases who do not receive treatment should be isolated for 3 weeks after onset of paroxysmal cough or until the end of cough (whichever is 1st)
- Household/close contacts require post-exposure treatment
- Inadequately immunized household contacts under 7 may be excluded for 3 weeks after last exposure or until 5 days of treatment completed



Rash Illness



Symptoms To Look For

- Redness on skin
- May or may not itch
- May or may not have a fever.
- A rash without a fever is **GENERALLY** not a reason to keep a child home.

Common Rashes

Chicken Pox



Measles



Common Rashes

Fifth's Disease



Hand Foot & Mouth Disease



Common Rashes: Ringworm



Common Rashes: Scabies



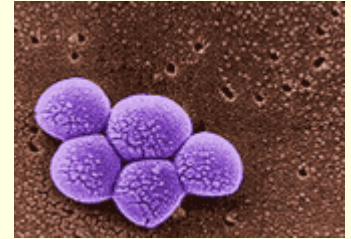
Common Rashes: Impetigo



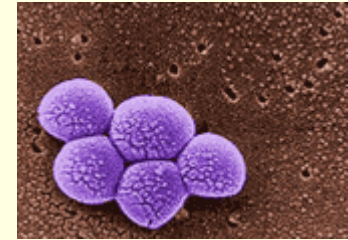
Exclusion Recommendations

- Chickenpox
 - Until lesions are dry and crusted. Usually 5 days in unimmunized children or 1-4 days in previously immunized children.
- Fifth's Disease – Exclude while fever present
- Hand, Foot and Mouth – Exclude while fever present
- Ringworm
 - Until begin treatment with prescription medication
- Scabies
 - Until 24 hours after treatment initiated
- Impetigo
 - Until 24 hours after treatment initiated

MRSA

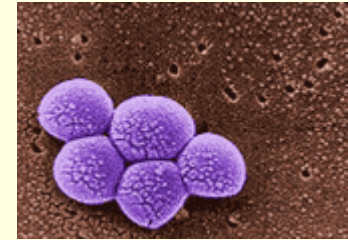


MRSA



- A few MRSA cases in school are not unusual
- Minor skin infections
- Easily treated
- Death in children from CA-MRSA is rare
- Transmission is usually person-to-person
- Hygiene and hand-washing are key

MRSA

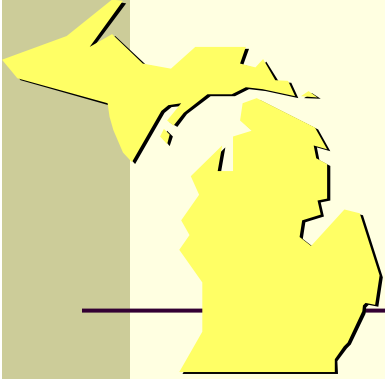


- Do NOT need to close school
- Do NOT exclude infected child if wound can remain covered and dry
- Usually not necessary for mass notification of parents/staff
- If there are 3 or more related cases in a school, contact KCHD



Disease Reporting





Michigan's Communicable Disease Rules

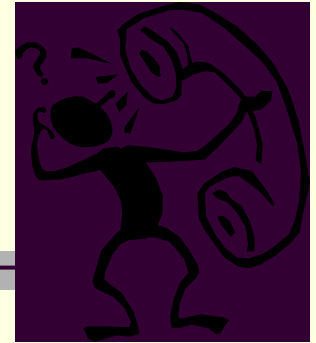
Michigan's communicable disease rules are promulgated under the authority conferred on the Department of Community Health by section 5111 of Act. No. 368 of the Public Acts of 1978, as amended, being 333.511 of the Michigan Compiled laws.

Suspected violations of these rules will be reported to the appropriate licensing boards of the responsible health care professional.

These rules can be found at:

http://www.michigan.gov/documents/hlth_care_prof_guide_167371_7.pdf

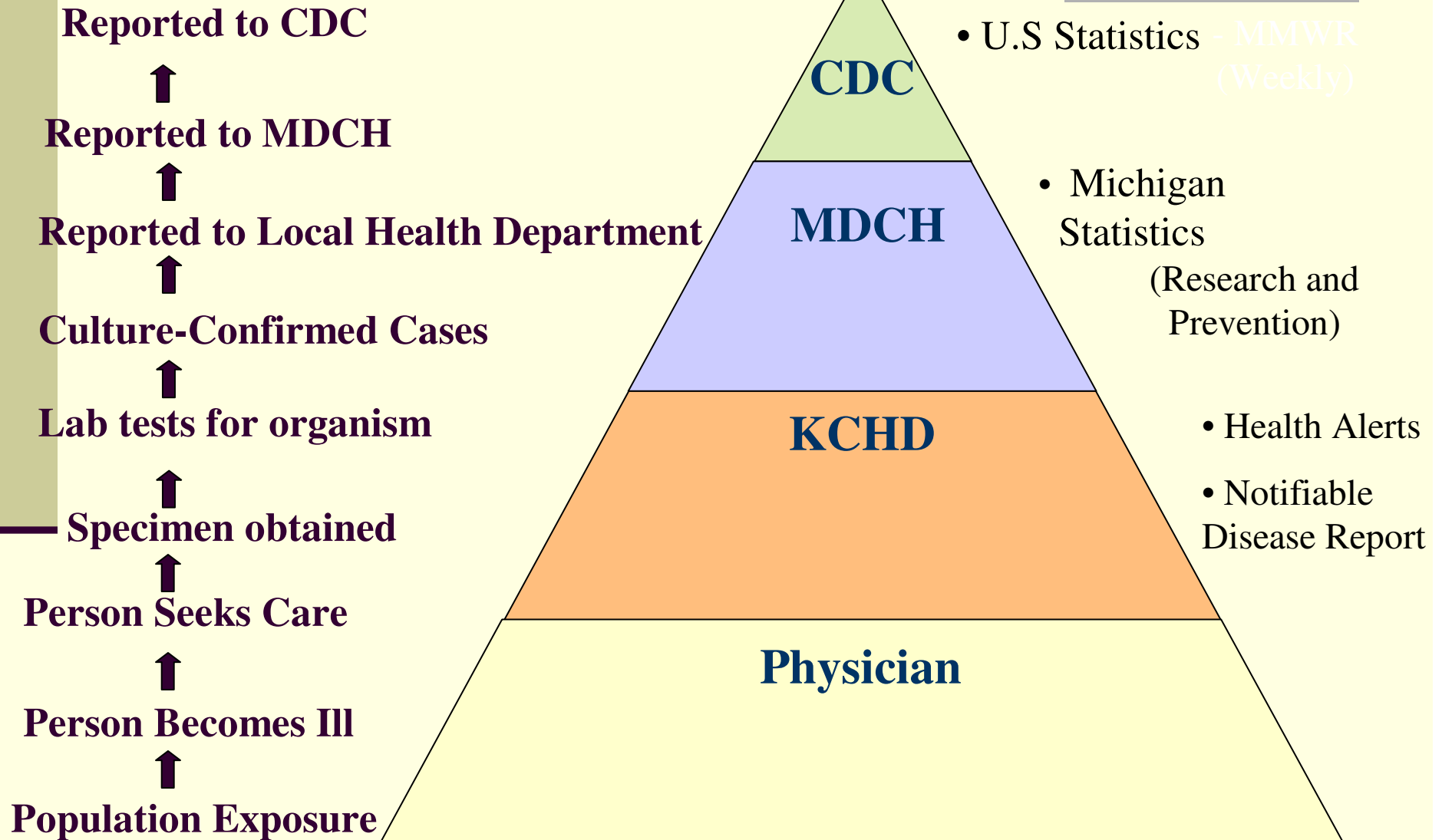
Who Should Report?



- Physicians, clinical laboratories, primary and secondary schools, childcare centers, and camps **are required to report** the occurrence or suspected occurrence of any disease, condition or infection as identified in the Michigan Communicable Disease Rules (R325.171 *et al.*)

Assist with Local, State, and National and International Disease Surveillance

World Health Organization



Michigan Disease Surveillance System



Department of Community Health



[Case Investigation](#)

[System Administration](#)

[Reports](#)

[Help](#)

[Logout](#)

[Cases](#)

[New Case](#)

[Aggregate Cases](#)

[Searches](#)

[New Search](#)

[Case Definitions](#)

[Alert Rules](#)

Displaying results 1-10 of 40 found

[\[< First\]](#) [1](#) [2](#) [3](#) [4](#) [\[Next >>\]](#) [\[Last >\]](#)

Case Listings

Referral Date

Sort

All Open Investigations

Search

Export

Help

Investigation Status	Disease	Patient Name	Referral Date	Investigator	Jurisdiction	
Active	Botulism - Foodborne	ROBERT SMITH	11/21/2003	USER, SUPER	Oakland County	Edit
New	Anthrax	JEAN SIMMONS	11/21/2003	USER, SUPER	Statewide	Edit
New	Cholera	JOEY TRIBBIANI	11/21/2003	USER, SUPER	Ingham County	Edit
New	Typhoid Fever	TIFFANY TYPHOID	11/21/2003	USER, SUPER	Allegan County	Edit
New	Streptococcal Toxic Shock	MIGHTY MOUSE	11/21/2003	ADMIN, LHJ	Berrien County	Edit
New	Botulism - Foodborne	JAMES COLLINS	11/24/2003	USER, SUPER	Oakland County	Edit
New	Brucellosis	JAMES LEE	11/24/2003	CLERICAL, LHJ	Washtenaw County	Edit
New	Salmonellosis	CHERYL MCDIARMID	11/24/2003	USER, SUPER	Ingham County	Edit
New	Salmonellosis	MICHAEL POPOVICH	11/24/2003	USER, SUPER	Detroit City	Edit
New	Salmonellosis	BRAD CARLSON	11/24/2003	ADMIN, LHJ	Washtenaw County	Edit

[\[< First\]](#) [1](#) [2](#) [3](#) [4](#) [\[Next >>\]](#) [\[Last >\]](#)

School Reporting

- **Aggregate Numbers**
 - Influenza-Like Illness
 - Gastrointestinal Illness
- **Individual Cases**
 - Meningitis – Viral and Bacterial
 - Measles
 - Pertussis
 - Hepatitis A
 - Chickenpox
- **Clusters**
 - Gastrointestinal Illness
 - Rash Illness/Skin Infections
 - Respiratory Illness

Kent County Reporting Form

Section 1: Basic Information

Michigan School Building Weekly Report of Communicable Disease

According to the State of Michigan Public Health Code (Public Act 368, of 1978 as amended), THE LOCAL HEALTH DEPARTMENT SHALL BE NOTIFIED IMMEDIATELY OF THE OCCURRENCE OF COMMUNICABLE DISEASE (ESPECIALLY RASH-LIKE ILLNESSES WITH FEVER). In addition to immediate notification by telephone at **616.632.7228**, please include all occurrences on this form and fax to **616.632.7085** before 11 AM on Friday.



SECTION 1. Please print clearly and complete in full. Your ID Number is your State ID number that begins with "41".

Week Ending ____ / ____ /200__ School _____ ID Number _____

Date: _____ Submitted by: _____ Title: _____ E-Mail: _____

Telephone: _____ Fax: _____ Enrollment: _____ NOTHING TO REPORT

NOTE: State of Michigan Reporting Form is also acceptable

Reporting Form

Section 2 – Aggregate Numbers

SECTION 2. Indicate the NUMBER of cases of each illness. These D

Flu Types	Number Of Cases	Definition
Influenza Like Illness (Respiratory flu)		Any child with pneumonia <u>or</u> fever and any of the following symptoms: sore throat, cough, generalized aching in the back or limb muscles. Vomiting and diarrhea alone is NOT respiratory flu.
Gastrointestinal Illness (Stomach flu)		Any child with vomiting and/or diarrhea. ONLY
Unknown "Flu"		Parent reports "my child has the flu", no symptom information available.

Reporting Form

Section 3: Specific Information

SECTION 3. List all confirmed or suspected cases of communicable diseases, including: Chickenpox, Measles, Rubella (German Measles), Mumps, Hepatitis, Pertussis (Whooping Cough), *Haemophilus influenzae* type B, Encephalitis and Meningitis or other—please specify. Please attach additional sheets as needed.

Also report within 24 hours the unusual occurrence or outbreak of any disease or infection.

Name	Phone & Address	Date of Birth	Sex	Grade	Date First Absent	Disease	Diagnosed by: Dr., parent, teacher

Table

On-Line Reporting

- Reports can also be submitted on-line
- Call 632-7228 to obtain a username and password for the on-line system or find the registration form at:

http://www.accesskent.com/Health/HealthDepartment/CD_Epid/pdfs/Online_Registration_Form.pdf

On-line Reporting Form – Part 1

Communicable Disease Reporting

Michigan School Building Weekly Report of Communicable Disease to Kent County Health Department

Part 1 - Please report the total number of cases of each illness in this section. These cases do not need to be reported by student. Click **Next Page** below to report specific cases of communicable diseases.

Week Ending: / /

School: Kent County Admin School ID: Submitted by: Mary Lutzke Title: Epidemiologist
 Phone: (616)362-7237 Fax: (616)632-7084 E-Mail: mary.lutzke@kentcounty.org

* Enrollment:

* Nothing to Report:

* Did school close this week due to excessive absences? Yes No

Please Indicate the NUMBER of cases of each illness. These DO NOT need to be listed individually in the following section.

Flu Types	Number of Cases	Definition
* Influenza Like Illness (Respiratory Flu)	<input type="text"/>	Any child with pneumonia or fever AND any one of the following symptoms: sore throat, cough, generalized aching in the back or limb muscles. Vomiting and/or diarrhea alone are NOT typical symptoms of respiratory flu.
* Gastrointestinal Illness (Stomach Flu)	<input type="text"/>	Any child with vomiting and/or diarrhea.
* Unknown Influenza ("Flu")	<input type="text"/>	Parent reports "my child has the flu", no symptom information available.

Number of absences due to Asthma, or "Breathing Problems":

Strep Throat	<input type="text"/>	Pink Eye (conjunctivitis)	<input type="text"/>	Head Lice	<input type="text"/>
Scarlet Fever	<input type="text"/>	Fifth Disease	<input type="text"/>	Impetigo	<input type="text"/>

On-line Reporting Form - Part 2

Communicable Disease Reporting

Michigan School Building Weekly Report of Communicable Disease to Kent County Health Department

Part 2 - Click **Add Another** to enter another case. Click **Finish** after entry of the last case.

According to the state of Michigan Public Health Code (Public Act. 368, of 1978 as amended), *the local health department immediately of the occurrence of communicable disease (especially rash - like illnesses with fever).* Please include all occurrences.

List all confirmed or suspected cases of communicable diseases, including: Chickenpox, Measles, Rubella (German Measles), Hepatitis, Pertussis (Whooping Cough), *Haemophilus Influenza* type B, Encephalitis and Meningitis or other - please specify.

**In case of unusual occurrences, call the Health Department immediately at: (616)632-7228
Also report within 24 hours the unusual occurrence or outbreak of any disease or infection.**

First Name:		Last Name:		
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Street:		City:	Zip:	
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Phone:				
<input type="text"/>	-	<input type="text"/>	- <input type="text"/>	
Age:	Sex:	Grade:	Date First Absent:	Diagnosed by:
<input type="text"/>	M <input type="radio"/> F <input type="radio"/>	Daycare <input type="text"/>	6 <input type="text"/> / 13 <input type="text"/> / 2005 <input type="text"/>	Doctor <input type="text"/>
Disease:		If other, please describe:		
Chicken Pox <input type="text"/>		<input type="text"/>		
<input type="button" value="Add Another"/>		<input type="button" value="Finish"/>	<input type="button" value="Reset"/>	

Reporting Clusters

- Signs and symptoms
- Duration of illness
- Number of Cases (students and staff)
- Total students/staff in facility
- Date of symptom onset
- Location of cases (i.e. same class, grade, or wing)
- Name, DOB and grade of those ill

Use of a line list may be helpful.

Where to Get More Information

- Kent County Health Department
 - (616) 632-7228
 - www.accesskent.com/health
- Centers for Disease Control and Prevention (CDC) website:
 - www.cdc.gov