



Hepatitis A Outbreak in SE Michigan

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What is Hepatitis A virus (HAV)?

Picornavirus – outbreak strain subgenotype1b

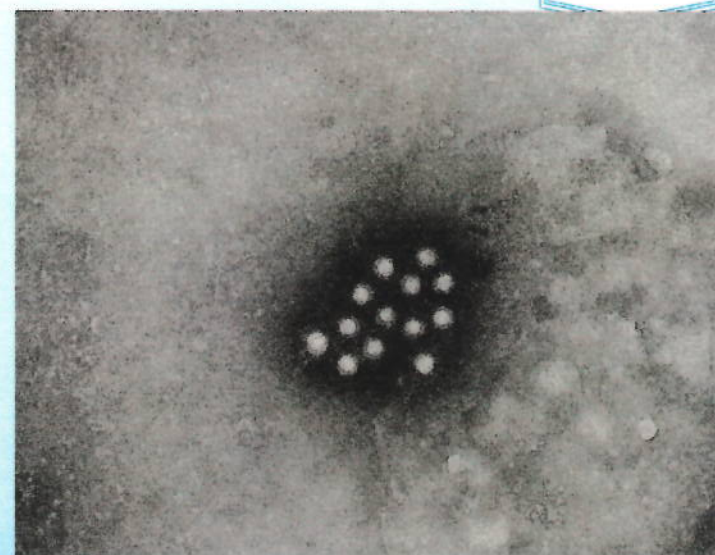
- Humans (& non-human primates) are only natural host
- Stable at low pH and in freezing to moderate temps
- Inactivated by high temps ($>185^{\circ}\text{F}$), formalin, chlorine, bleach

Development of the Disease

- HAV survives gastric acid in stomach
- Replicates in the liver and is excreted in feces
- Low infectious dose (10-100 virus particles)
 - highly contagious; acute infection

Incubation

- Illness can appear 15-50 days after exposure (Average 28 days)



CDC: PHIL 2739



How Does It Spread?

Ingestion of fecal matter, *even in microscopic amounts*, from:

Touching objects or
eating food that
someone with hepatitis
A infection handled

Close, person-to-
person contact with a
person who is infected

Use of recreational
drugs, whether
injected or not

Sexual contact with
someone who has a
hepatitis A infection





What Are The Symptoms?



Fever



Fatigue



Nausea



Loss of Appetite



Jaundice



Stomach Pain



Vomiting



**Dark Urine, Pale Stools,
and Diarrhea**

Not all people infected with hepatitis A experience illness. Most hepatitis A infections in children younger than age 6 are not accompanied by symptoms. Older children and adults are at risk for severe hepatitis A disease.

Can Hepatitis A Infection Be Treated?



There is no anti-viral drug treatment

Supportive care is needed, sometimes in the hospital:
fluids, rest, nutrition

Serologic testing is needed to confirm the diagnosis.
10-15% of persons have prolonged or relapsing symptoms.
Older age and chronic liver disease increase disease severity and risk of death.
If liver failure (fulminant) develops, it may require liver transplant.



Hepatitis A in Southeast Michigan, Since 8/1/16



Large increase in monthly cases

Initial cases include persons with substance abuse disorder, homelessness, transient living, incarcerated, MSM, food workers

No common source of infection identified



Michigan Hepatitis A 2016-2018 Outbreak Summary

Epi Summary for Hepatitis A Cases in Michigan (City of Detroit, Clinton, Genesee, Ingham, Macomb, Oakland, Shiawassee, & Wayne)** for Confirmed Cases Referred August 1, 2016 – September 26, 2018†									
	2 nd Half CY2016	1 st Half CY2017	2 nd Half CY2017	Q1 CY2018	Q2 CY2018	Jul-18	Aug-18	Sept-18	Total
Total # of Cases (by Onset)	58	138	495	118	51	14	18	4	896
# Primary Confirmed Cases w/ Outbreak Strains	21	73	314	76	36	10	13	0	543
# Primary Confirmed Cases w/out sequencing	36	51	125	32	10	3	4	4	265
# Secondary Confirmed Cases	1	14	56	10	5	1	1	0	88
Female, n (%)	20 (34.5)	49 (35.5)	171 (34.5)	42 (35.6)	17 (33.3)	6 (42.9)	4 (22.2)	2 (50.0)	311 (34.7)
Hospitalized, n (%)	50 (86.2)	117 (84.8)	392 (79.2)	91 (77.1)	45 (88.2)	10 (71.4)	12 (66.7)	3 (75.0)	720 (80.4)
Min Age (years)	24	21	<1	2	18	28	27	48	<1
Max Age (years)	83	86	90	87	85	59	70	75	90
Median Age (years)	44.5	42.5	40	37.5	36	36	41	50	40
Deaths, n (%)	4 (6.9)	9 (6.5)	11 (2.2)	2 (1.7)	1 (2.0)	0 (0.0)	1 (5.6)	0 (0.0)	28 (3.1)
Data below excludes secondary cases									
No Substance Abuse + No Homeless/Transient Living, n (%)	32 (56.1)	38 (30.6)	184 (41.9)	37 (34.3)	14 (30.4)	5 (38.5)	5 (29.4)	2 (50.0)	317 (39.2)
Documented Substance Abuse, n (%)	19 (33.3)	77 (62.1)	211 (48.1)	63 (58.3)	28 (60.9)	8 (61.5)	10 (58.8)	1 (25.0)	417 (51.6)
Homeless/Transient Living, n (%)	10 (17.5)	25 (20.2)	47 (10.7)	16 (14.8)	8 (17.4)	4 (30.8)	2 (11.8)	0 (0.0)	112 (13.9)
History of Hepatitis B, n (%)	3 (5.3)	4 (3.2)	9 (2.1)	5 (4.6)	4 (8.7)	2 (15.4)	1 (5.9)	0 (0.0)	28 (3.5)
History of Hepatitis C, n (%)	10 (17.5)	39 (31.5)	125 (28.5)	21 (19.4)	12 (26.1)	3 (23.1)	3 (17.6)	2 (50.0)	215 (26.6)
Men Who Have Sex with Men (MSM), n (%) -Data includes only male cases	1 (2.7)	3 (3.7)	57 (18.9)	13 (18.3)	2 (6.3)	0 (0.0)	1 (7.7)	0 (0.0)	77 (14.1)
Correctional Facility Inmates, n (%)	1 (1.8)	8 (6.5)	40 (9.1)	6 (5.6)	8 (17.4)	1 (7.7)	1 (5.9)	0 (0.0)	65 (8.0)
Healthcare Worker, n (%)	1 (1.8)	1 (0.8)	15 (3.4)	3 (2.8)	3 (6.5)	0 (0.0)	0 (0.0)	0 (0.0)	23 (2.8)
Food Worker, n (%)	2 (3.5)	4 (3.2)	22 (5.0)	6 (5.6)	3 (6.5)	0 (0.0)	2 (11.8)	0 (0.0)	39 (4.8)
Cases Lost to Follow-up, n (%)	14 (24.6)	41 (33.1)	85 (19.4)	13 (12.0)	3 (6.5)	2 (15.4)	2 (11.8)	1 (25.0)	161 (19.9)

*Also includes cases from Allegan, Bay, Clare, Hillsdale, Huron, Ionia, Kent, Leelanau, Lenawee, Newaygo, Schoolcraft & Van Buren Counties and a MDOC Facility (Jackson County) that were found to have the outbreak strain when sequenced but do not meet the criteria to be an outbreak jurisdiction.

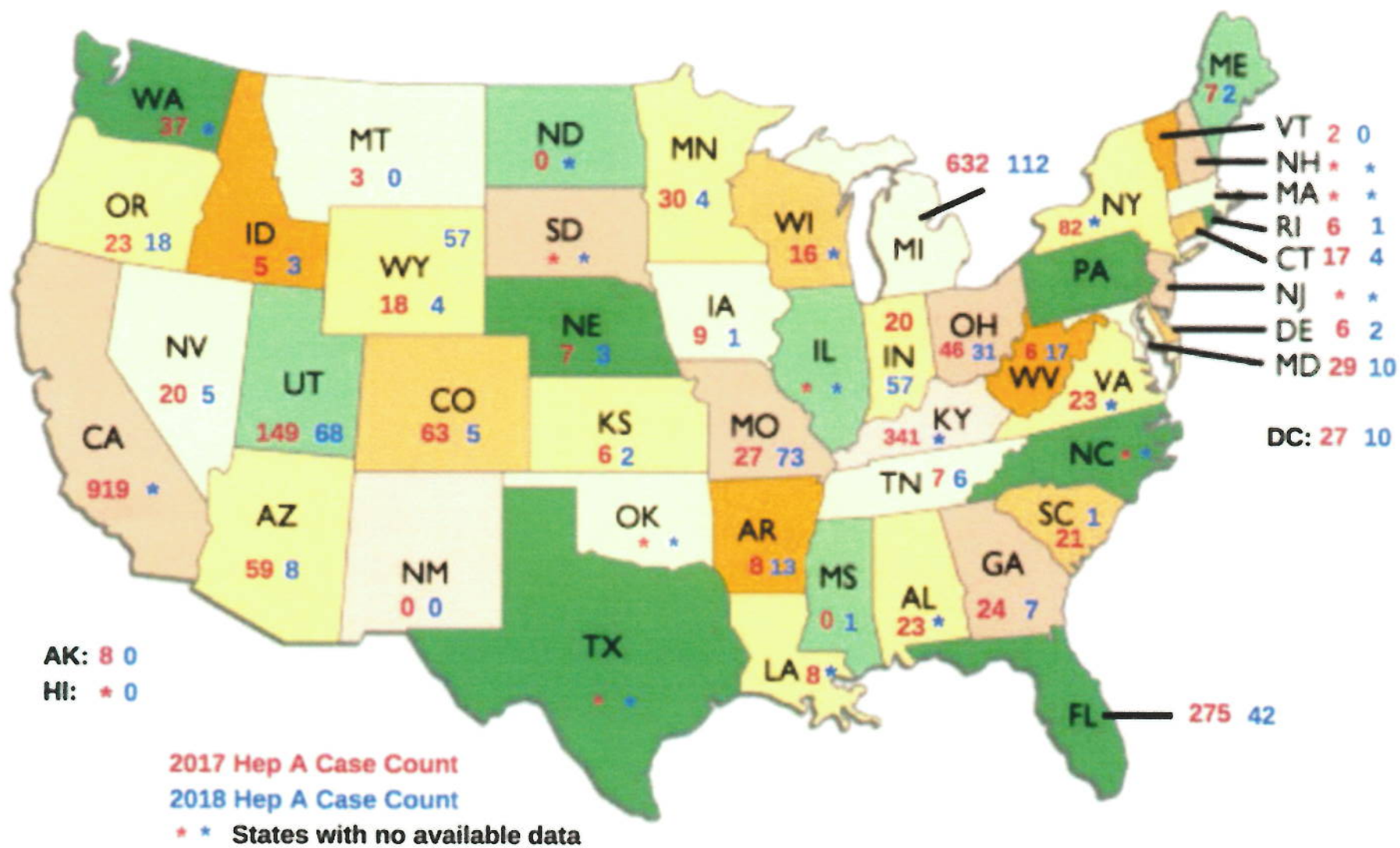
† Includes cases from counties that have met the criteria to be removed as an outbreak jurisdiction. That includes the counties of Calhoun (7 cases), Eaton (5 cases), Grand Traverse (4 cases), Gratiot (3 cases), Isabella (8 cases), Lapeer (7 cases), Livingston (6 cases), Mecosta (2 cases), Midland (3 cases), Monroe (18 cases), Saginaw (4 cases), Sanilac (6 cases), and St. Clair (33 cases), and Washtenaw (19 cases).

* Analysis excludes cases that have been sequenced and found to be PCR Negative, have a different strain from the outbreak strains, or have international travel in the 2-6 weeks prior to illness onset.

City of Detroit	173	173
Allegan	2	2
Bay	1	1
Calhoun	7	7
Clare	1	1
Clinton	6	6
Eaton	5	5
Genesee	28	28
Grand Traverse	4	4
Gratiot	3	3
Hillsdale	1	1
Huron	1	1
Ingham	28	28
Ionia	1	1
Isabella	8	8
Kent	3	3
Lapeer	7	7
Leelanau	1	1
Lenawee	1	1
Livingston	6	6
Macomb	222	222
Mecosta	2	2
Midland	3	3
Monroe	18	18
Newaygo	1	1
Oakland	120	120
Saginaw	4	4
Sanilac	6	6
Schoolcraft	1	1
Shiawassee	20	20
St. Clair	33	33
Van Buren	1	1
Washtenaw	19	19
Wayne	157	158
Other*	1	1
Total	895	896

*Jackson MDOC







Strategies to Stop the Spread

- Identifying the Populations at Risk
- Prevention
 - Outreach
 - Education
 - Vaccination
- Response
 - PEP
 - Protecting Key Personnel

Prevention: Vaccination





Featured Successes

- 8,464 adult Hep A outbreak vaccinations administered
- 131 Episodic Out-of-Clinic Events
- DHD Partnerships to Create Sustainable Vaccination Opportunities
 - DMC
 - VAMC
 - St. John
 - HFHS
 - FQHCs

Communications

Michigan Health Alert Network (MIHAN) Messages

Press Releases

Letters

- [Letter to Healthcare Workers](#)
- [Letter to Healthcare Workers and LHDs](#)
- [Letter to Medicaid Providers](#)
- [DHD Letters to Providers](#)
- [DHD Newsletter to Providers](#)

Presentations & Partnerships to Distribute Outreach Materials





Hepatitis A Outbreak Website

MDHHS
Michigan Department of Health & Human Services

Assistance Programs | Adult & Children's Services | Safety & Injury Prevention | Keeping Michigan Healthy | Doing Business with MDHHS | Inside MDHHS

Keeping Michigan Healthy

MDHHS > KEEPING MICHIGAN HEALTHY > CHRONIC DISEASES > HEPATITIS

Hepatitis A Southeast Michigan Outbreak

Public health officials and the Michigan Department of Health and Human Services (MDHHS) are continuing to see an elevated number of hepatitis A cases in the City of Detroit, and counties of Lapeer, Livingston, Macomb, Monroe, Oakland, St. Clair, Sanilac, Washtenaw, and Wayne.

Since the beginning of the outbreak in August 2016, public health response has included increased healthcare awareness efforts, public notification and education, and outreach with vaccination clinics for high-risk populations. No common sources of food, beverages, or drugs have been identified as a potential source of infection. Transmission appears to be through direct person-to-person spread and illicit drug use. Those with history of injection and non-injection drug use, homelessness or transient housing, and incarceration are thought to be at greater risk in this outbreak setting. Notably, this outbreak has had a high hospitalization rate.

Southeast Michigan Hepatitis A Outbreak Cases and Deaths as of October 18, 2017*
*Table will be updated weekly by 4:00pm each Friday

Cases	Hospitalizations	Deaths
431	346 (80.7%)	17 (4.2%)

Please note: Affected jurisdictions include City of Detroit, and Lapeer, Livingston, Macomb, Monroe, Oakland, St. Clair, Sanilac, Washtenaw & Wayne Counties. Table does not include all reported hepatitis A cases in the region; only those that are identified as outbreak-related. More descriptive data on the current outbreak can be found within the [Comprehensive Summary](#). Data are provisional and subject to change.

Announcements

Behavioral Health & Developmental Disability

Chronic Diseases

Arthritis

Asthma

Cancer

Cardiovascular

Dementia

Diabetes

Disability Health

Health Disparity Reduction and Minority Health

Hepatitis

HIV/STD

Influenza

Lead Poisoning

Tobacco

Communicable & Chronic Diseases

Health Statistics & Reports

In support of efforts, MDHHS has a website for the hepatitis A outbreak that has important and timely information, available at:

www.mi.gov/hepatitisAoutbreak

- The website contains a brief case count, hospitalized cases, and deaths for an at-a-glance review that is updated **each** Friday.
- A Comprehensive Summary with case demographics and risk profiles is also available along with communication documents and educational materials available for download.

Printed Materials (Over 10,000 Distributed)



What is happening in Michigan?
There is a large outbreak of Hepatitis A virus in our communities. Since August 1, 2016, over 300 people have been sick with Hepatitis A. 14 people have died. The majority of people sick with Hepatitis A live in Southeast Michigan, but recently Hepatitis A has spread outside of this area to other parts of our state. Many people in the current outbreak are at risk for a more serious illness, with nearly 1 in every 10 people hospitalized after getting sick.

People have become sick after:

- injecting drugs or using street drugs (including pain killers)
- close contact with someone who has Hepatitis A
- going to jail
- playing for sex or sex
- eating food from a

What do I do if a friend or family member is sick?
If you, your friend, or a family member becomes sick, please go to a health care provider.

Get tested
The health care provider will also be able to help you decide if you need to go to the hospital. If your test is positive, the local health department will talk with you about how you may have been exposed to Hepatitis A.

The local health department will also need to know who has been in close contact with you to offer them vaccination or an immune boost for protection.

More information on hepatitis A
Call your health care provider, your local health department, or go to:

Michigan Department of Health and Human Services (MDHHS)
www.michigan.gov/hepatitisAoutbreak

Centers for Disease Control and Prevention (CDC)
www.cdc.gov/hepatitis

Help stop the spread of hepatitis A in Michigan communities

Don't wait!
If you or a loved one have a history of substance abuse, please reach out to a health care provider to discuss ways you are at higher risk for hepatitis A and how you can prevent the disease.

**Protect yourself
Protect others
Get vaccinated**

For information on where to get vaccinated.
Contact your health care provider, your pharmacy, or your local public health department:

Detroit Health Department
Phone: 313-616-4000
<http://www.detroitmi.gov/health>

Macomb County Health Department
Phone: 586-461-5357
www.macombgov.org/health

Oakland County Health Division
Phone: 482-040-0000 or
Email: ocdh@oakgov.com
www.oakgov.com/health

Monroe County Health Department
Phone: 734-240-7880

St. Clair County Health Department
Phone: 810-627-5300
www.stclairmi.gov

Wayne County Department of Health, Veterans & Community Wellness
Phone: 313-222-5079
For additional local health departments
Phone: 313-222-5159

MDHHS
Nov 10/2017

[Brochure – Help stop the spread of hepatitis A in Michigan communities](#)
(updated 10/2017)

**Protect yourself from hepatitis A...
Get vaccinated!**

**Protégese de la hepatitis A...
¡Vacúnese!**

What is hepatitis A?
Hepatitis A is a serious liver disease caused by a virus. The virus is found in the feces (poop) of infected people. If a person has an infection with the hepatitis A virus, it can easily spread from person-to-person and cause liver disease lasting a few weeks to a serious illness lasting many months. In some cases, people can die because of hepatitis A.

¿Qué es la hepatitis A?
La hepatitis A es una enfermedad grave del hígado causada por un virus. El virus se encuentra en las heces (poop) de personas infectadas. Si una persona está infectada con el virus de la hepatitis A, puede transmitirlo fácilmente de persona a persona. La hepatitis A causa una enfermedad en el hígado que puede durar unas cuantas semanas a meses, con el tiempo convirtiéndose en una enfermedad más seria. En algunos casos, las personas pueden morir debido al virus de la hepatitis A.

What Are the Symptoms of Hepatitis A? ¿Cuáles son los síntomas de la Hepatitis A?

Nausea and Vomiting Náusea y Vómito	Stomach Pain Dolor Abdominal	Loss of Appetite Falta de Apetito	Fatigue / Tired Cansancio	Fever Fiebre
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Jaundice (yellowing of the skin or eyes)
Ictericia (Coloración amarillenta de piel u ojos)

Dark urine, pale stools, and diarrhea
Orina oscura, heces blancas, y diarrea

Am I at risk?
You are more likely to be infected with the virus if you:

- have chronic liver disease
- use illegal drugs
- have sex with an infected person
- touch objects or eat food that someone with hepatitis A infection handled

Estoy en riesgo?
Es más probable que se infecte con el virus si:

- si tiene una enfermedad crónica del hígado
- si usa drogas ilegales
- si tiene sexo con una persona infectada
- tocando objetos o comiendo alimentos que alguien con la infección hepatitis A tocó

Vaccine Clinic / Clínica de Vacunas

www.michigan.gov/hepatitisAoutbreak

Aligner with permission from the County of San Diego, created 10/2017

MDHHS

[Poster – Protect Yourself from Hepatitis](#)
(updated 10/2017)

Hepatitis A is in Michigan communities.

Hepatitis A is a liver disease caused by the hepatitis A virus (HAV). Hepatitis A is spread through contaminated food or water and close contact with persons who are infected. Hepatitis A can affect anyone. Frequent hand washing with soap and warm water after using the bathroom, changing a diaper, or before preparing food can help prevent the spread of hepatitis A.

The best way to protect against hepatitis A is to get the hepatitis A vaccine. Talk to your health care provider to get the two doses you need for protection. Most help paying for vaccines? Your local health department or your federally qualified health center may have hepatitis A vaccine available for little cost.

Stop the spread. Get vaccinated today.

www.michigan.gov/health

MDHHS

[Flyer – Hepatitis A is in Michigan communities](#)



Resources

- MDHHS. Hepatitis A Southeast Michigan Outbreak. Retrieved from <http://www.mi.gov/hepatitisAoutbreak>
- CDC. Hepatitis A Information. Retrieved from <https://www.cdc.gov/hepatitis/hav/index.htm>
- CDC. Hepatitis A Vaccination: What Everyone Should Know. Retrieved from <https://www.cdc.gov/vaccines/vpd/hepa/public/index.html>
- CDC. Hepatitis A Questions and Answers for the Public. Retrieved from <https://www.cdc.gov/hepatitis/hav/afaq.htm>
- CDC. MMWR Publications: Hepatitis A. Retrieved from <https://www.cdc.gov/hepatitis/resources/professionals/mmwr.htm>