Hepatitis A in Boston
BPHC Board Meeting

October 17, 2018

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BOSTON PUBLIC HEALTH COMMISSION

HAV – General Information

- Vaccine-preventable illness transmitted primarily via person-to-person through the fecal-oral route.
- 70% of adults are symptomatic.
  - Fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, dark urine, and jaundice.
- Average incubation (period between exposure and appearance of symptoms) = 28 days (range: 15–50 days)
- Infectious period
  (period during which an infected person can transmit a pathogen to a susceptible host) = 2 weeks prior to becoming symptomatic until 1+ weeks after symptoms develop.
  - Prolonged period of infectivity prior to symptom onset contributes to difficulty in identifying exposures and controlling transmission.
- Illness typically acute and self-limited; however, among >50 years of age and populations with underlying medical conditions (e.g., hepatitis B and C infections, chronic liver disease), infection can lead to fulminant hepatitis resulting in death.
- Symptoms usually last <2 months; ~10%–15% have prolonged or relapsing disease for up to 6 months.

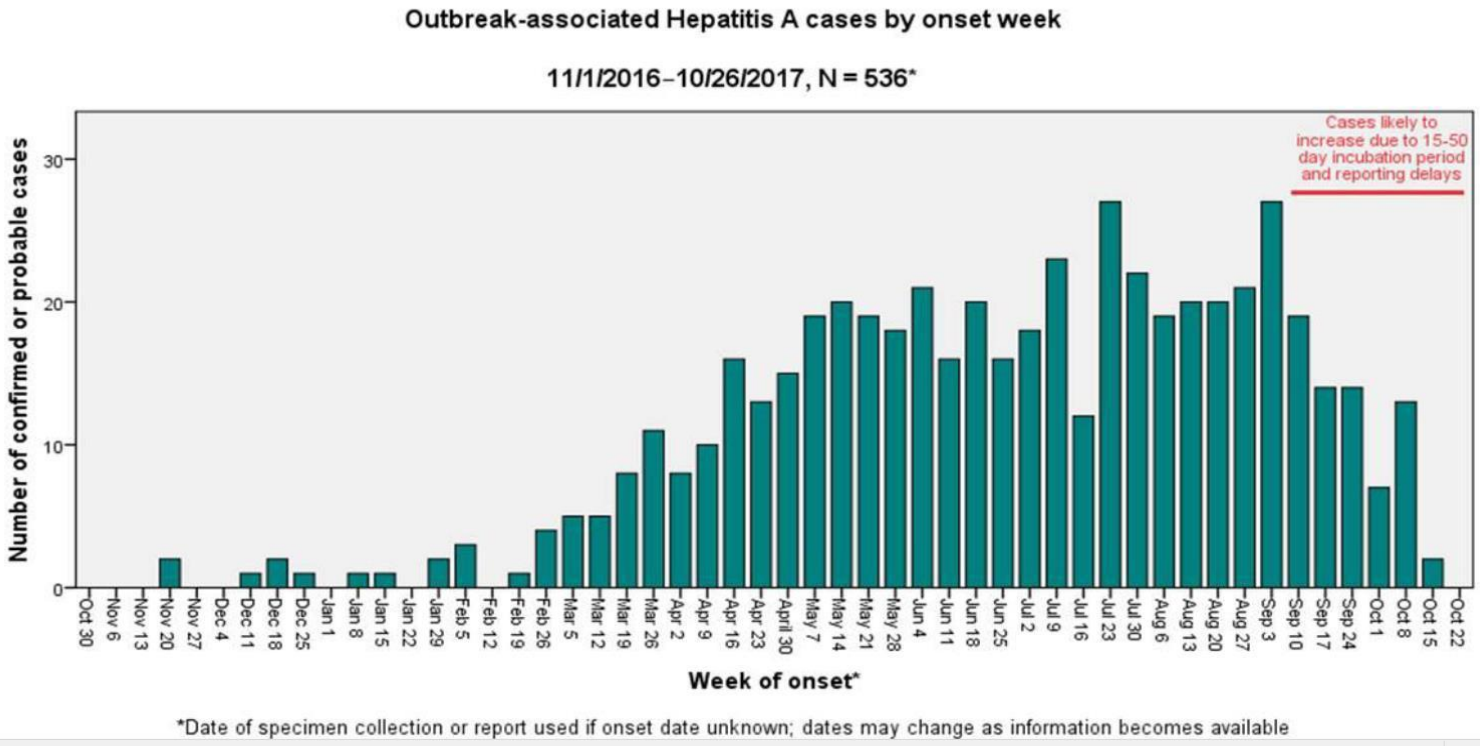
HAV – General Information

- HAV can live outside the body for months, depending on environmental conditions.
- HAV requires high cooking temperatures to kill. However, virus can still be spread from cooked food contaminated after cooking. Freezing does not inactivate HAV.
- HAV vaccine is >94% effective in preventing infection. Good hand hygiene plays an important role in preventing spread.

HAV Clusters – United States, 2017

- Several recent large U.S. outbreaks affecting people experiencing homelessness and those with substance use disorder, especially people who inject drugs.
  - On September 1, 2017, the San Diego County Health and Human Services Agency declared a local health emergency in response to an HAV outbreak unprecedented in size and severity which began November 2016.
  - The majority of persons infected were experiencing homelessness and/or SUD. As of July 4, 2018, a total of 590 cases have been identified, including 408 (68%) hospitalizations, and 20 (3.4%) deaths. There were additional large clusters in Los Angeles and Santa Cruz Counties.
  - Indiana, Kentucky, Michigan, Tennessee, Utah and West Virginia have also reported outbreaks of HAV since March 2017.

HAV – San Diego, 2016-2017



HAV – Initial Response

- **Following Case #1**, BPHC collaborated with Boston Healthcare for the Homeless Program (BHCHP) to increase HAV vaccine delivery to shelter clients; BPHC's AHOPE program increased education and outreach efforts.
  - Focus on downtown encampments and Engagement Center
  - ISD and BPHC (Env, IDB) inspected the EC; ISD performed food service evaluation; cleaning/disinfection recommendations provided, particularly re porta-potties and increasing access to mobile hand washing unit; hand hygiene education

HAV – Initial Response

- **Following Case #2**, outreach efforts expanded to address the highly transient and fluid nature of these overlapping high risk populations.
  - Enhanced cleaning/sanitation efforts initiated at all BPHC BHR, BRS, and BHCHP sites including AHOPE, PAATHS, Engagement Center, The Boston Night Center, The Barbara McInnis House, and all Boston shelters.
  - Active education and outreach to clients expanded including efforts to reach the unsheltered homeless population through BPHC and BHCHP street teams and mobile units including the Kraft Center's CareZONE van, BHCHP's Pine Street Shelter van.
  - Coordinated efforts to increase HAV coverage for all BHCHP clients as well as increase vaccine delivery among non-clients.
  - Increase awareness among hospital ED's providers and Lemuel Shattuck Hospital to assess HAV vaccine status and offer vaccine to all susceptible persons.

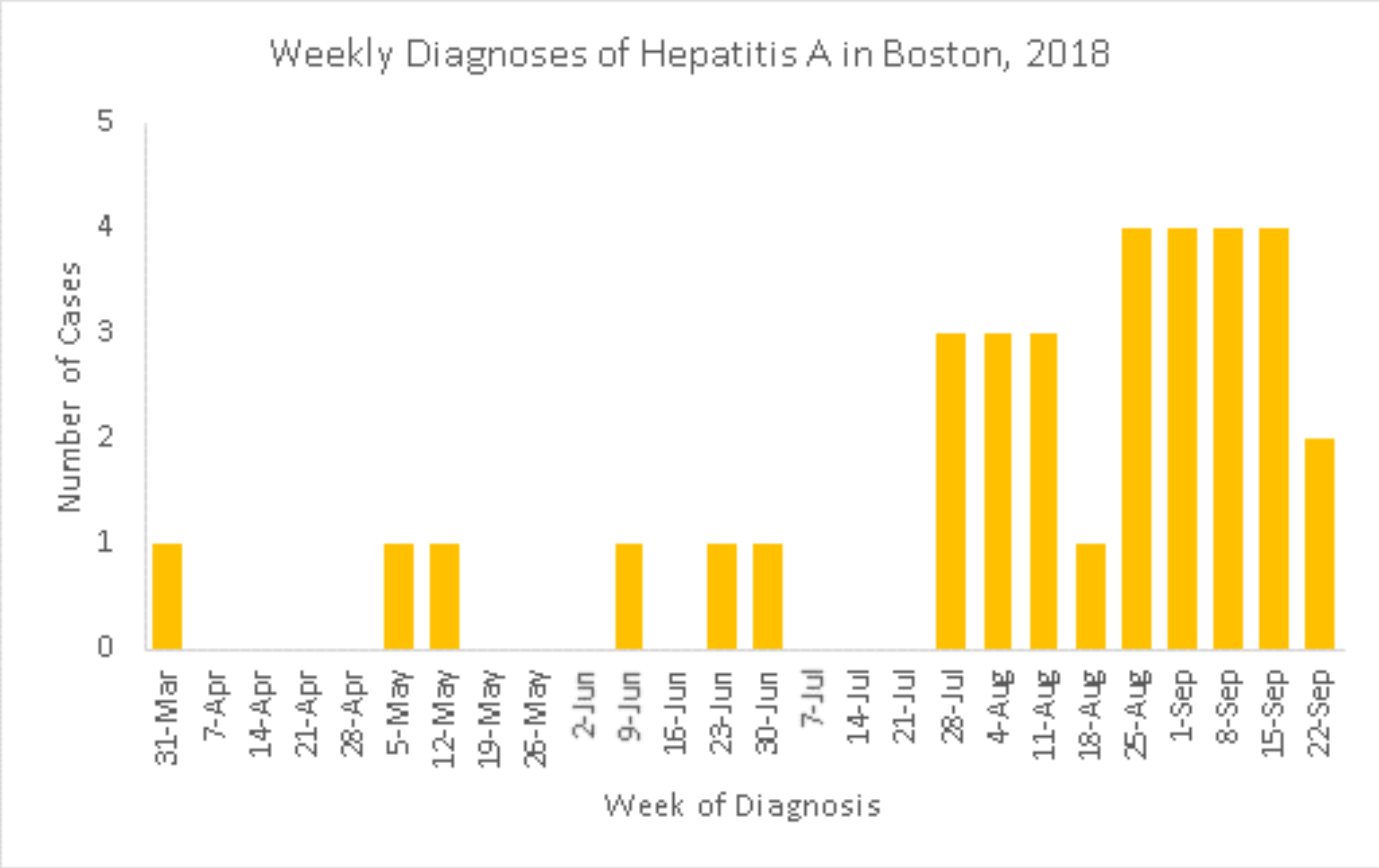
HAV – Initial Response

- **Following Case #3**, multi-stakeholder conf call with BPHC (IDB, OPHP, BHS, BRS, AHOPE, CIB-Env); MDPH; BHCHP including Pine Street Shelter; Emergency Preparedness Directors at MGH, BMC, Tufts to review current preparedness strategies.
  - Identified current capacity and gaps; discussed increase use of mobile units re vaccine delivery particularly for unsheltered homeless; increased vaccine outreach and delivery efforts at shelters; MDPH offered vaccine supply and potential purchase of additional supply; discussed difficulty of delivering vaccine at hospital EDs
  - Provided 3 HAV vaccine clinics at WM and AHOPE
  - Joint HAV Advisory by BPHC/MDPH July 31, 2018

HAV Cluster – Boston, April 2018

- Since April 3, 2018, 44 cases of acute HAV infection have been reported in Boston among people experiencing homelessness and/or SUD, particularly IDU.
  - Non-travel associated; first case in food handler reported last week
  - Unique genotype not found in other outbreaks across the country
  - 98 cases reported total in MA, majority reported from Suffolk (45%), Plymouth (14%), Middlesex (8%), and Worcester (8%) Counties.
- In 2003-2005, Massachusetts reported >1,000 cases of HAV (Boston = 136)
  - 2/3 of cases were in individuals experiencing homelessness, SUD, incarceration.
  - Large scale vaccination, education and control efforts were required to control the outbreak.

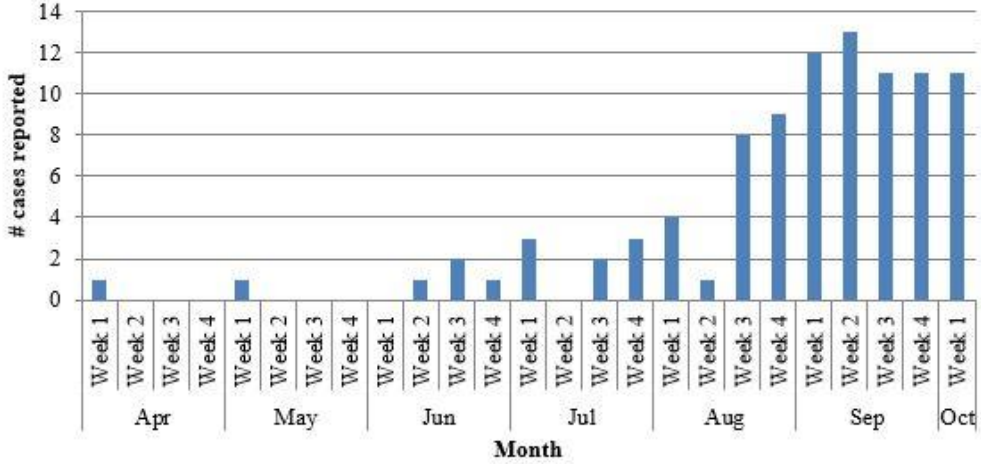
HAV, Boston 2018 – Epidemiological Curve



HAV Boston Case Characteristics, 10/15/18

	#	%
Total Cases	44	
Median Age	33.5	
Age range	26 to 61	
% Male	30	68
Currently Experiencing Homelessness	34	77
Link to Homeless Community	7	16
No link to Homeless Community	3	7
Known to be current PWID	20	45
Food Handler	1	2

HAV Massachusetts Case Characteristics, 10/15/18



Cases occurring in October Week 2 and later excluded. Data for more recent weeks may be incomplete due to diagnosis and reporting delays.
Data source: MDPH Bureau of Infectious Disease and Laboratory Sciences. Data as of 10/12/2018 and subject to change.

	2017 cases	2018 non-outbreak cases	2018 outbreak cases
Number of cases	53	51	98
Demographics			
Gender	64% male	73% male	60% male
Age: median (range)	36 (5-85)	52 (22-90)	32 (21-78)
Race			
Asian	6%	4%	1%
Black	6%	4%	3%
White	49%	53%	77%
Other	4%	8%	10%
Unknown	36%	31%	9%
Ethnicity			
Hispanic	2%	6%	8%
Non-Hispanic	47%	49%	75%
Unknown	51%	45%	17%
Coinfections			
Hepatitis B*	2%	0%	4%
Hepatitis C*	2%	4%	78%
HIV	2%	2%	7%

*Includes confirmed and probable cases.
Percentages may not add to 100 due to rounding.

Overall Response Objectives

Maintain ongoing **situational awareness** for leadership, media, and healthcare providers regarding the spread of Hepatitis A within the City of Boston.

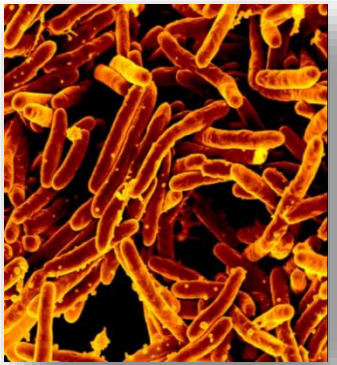
Develop and implement a **vaccination plan** that will decrease the transmission of Hepatitis A within the at-risk population.

Provide guidance and resources related to **hygiene and sanitation** to help mitigate the transmission of Hepatitis A.

Provide coordinated **incident management** across BPHC, City of Boston agencies and external partners through the Medical Intelligence Center (MIC).

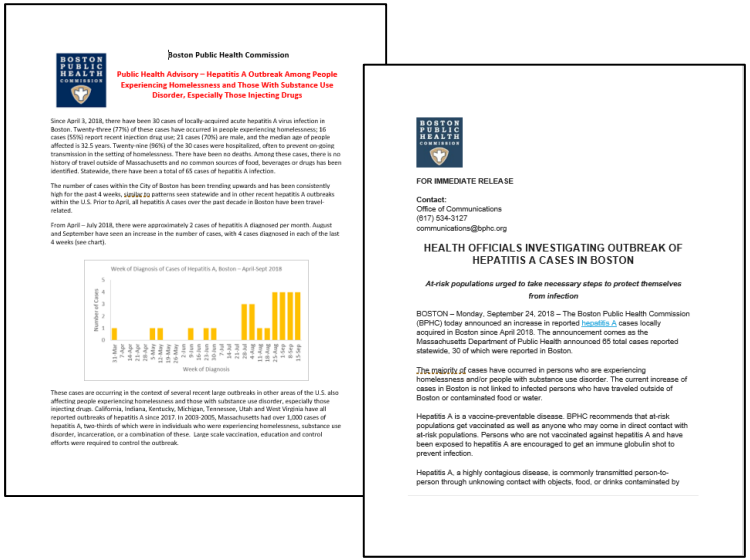
Medical Intelligence Center

- Public Health and Healthcare Coordination
  - Coordinates public health and healthcare response and recovery for all external partners
- Department Operations Center (DOC)
  - Coordinates response and recovery for BPHC programs



Situational Awareness

- Coordinate **information sharing** and **decision making**
  - PH Advisories
  - Press Release
  - Conference Calls



Boston Public Health Commission

Public Health Advisory – Hepatitis A Outbreak Among People Experiencing Homelessness and Those With Substance Use Disorder, Especially Those Injecting Drugs

Since April 3, 2018, there have been 30 cases of locally-acquired acute hepatitis A virus infection in Boston. Twenty-three (77%) of these cases have occurred in people experiencing homelessness; 16 cases (55%) report recent injection drug use; 21 cases (70%) are male, and the median age of people affected is 32.5 years. Twenty-nine (96%) of the 30 cases were hospitalized, often to prevent on-going transmission in the setting of homelessness. There have been no deaths. Among these cases, there is no history of travel outside of Massachusetts and no common sources of food, beverages or drugs has been identified. Statewide, there have been a total of 65 cases of hepatitis A infection.

The number of cases within the City of Boston has been trending upwards and has been consistently high for the past 4 weeks, similar to patterns seen statewide and in other recent hepatitis A outbreaks within the U.S. Prior to April, all hepatitis A cases over the past decade in Boston have been travel-related.

From April – July 2018, there were approximately 2 cases of hepatitis A diagnosed per month. August and September have seen an increase in the number of cases, with 4 cases diagnosed in each of the last 4 weeks (see chart).

Week of Diagnosis of Cases of Hepatitis A, Boston – April-Sept 2018

Number of Cases

Week of Diagnosis

These cases are occurring in the context of several recent large outbreaks in other areas of the U.S. also affecting people experiencing homelessness and those with substance use disorder, especially those injecting drugs. California, Indiana, Kentucky, Michigan, Tennessee, Utah and West Virginia have all reported outbreaks of hepatitis A since 2017. In 2003-2005, Massachusetts had over 1,000 cases of hepatitis A, two-thirds of which were in individuals who were experiencing homelessness, substance use disorder, incarceration, or a combination of these. Large scale vaccination, education and control efforts were required to control the outbreak.

FOR IMMEDIATE RELEASE

Contact:
Office of Communications
(617) 534-3127
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HEALTH OFFICIALS INVESTIGATING OUTBREAK OF HEPATITIS A CASES IN BOSTON

At-risk populations urged to take necessary steps to protect themselves from infection

BOSTON – Monday, September 24, 2018 – The Boston Public Health Commission (BPHC) today announced an increase in reported hepatitis A cases locally acquired in Boston since April 2018. The announcement comes as the Massachusetts Department of Public Health announced 65 total cases reported statewide, 30 of which were reported in Boston.

The majority of cases have occurred in persons who are experiencing homelessness and/or people with substance use disorder. The current increase of cases in Boston is not linked to infected persons who have traveled outside of Boston or contaminated food or water.

Hepatitis A is a vaccine-preventable disease. BPHC recommends that at-risk populations get vaccinated as well as anyone who may come in direct contact with at-risk populations. Persons who are not vaccinated against hepatitis A and have been exposed to hepatitis A are encouraged to get an immune globulin shot to prevent infection.

Hepatitis A, a highly contagious disease, is commonly transmitted person-to-person through unknowing contact with objects, food, or drinks contaminated by

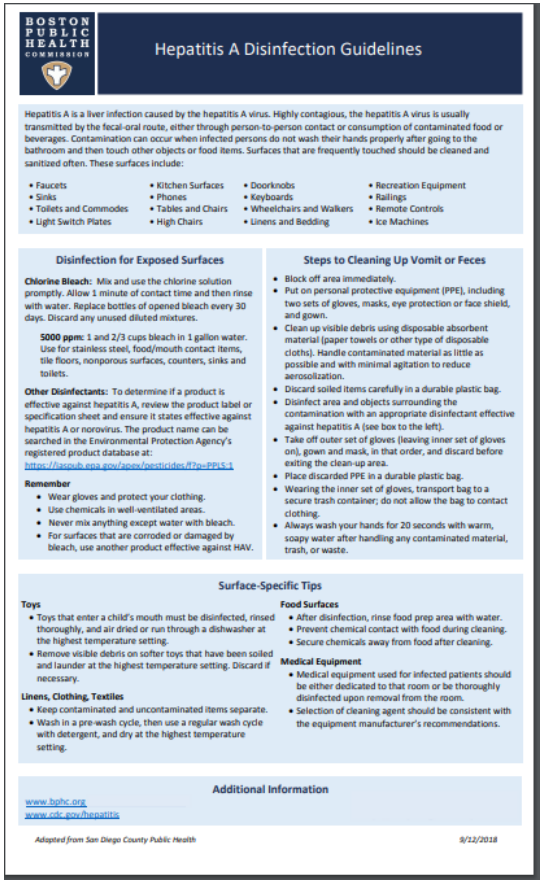
Vaccination Plan

- At-risk population:
  - Unsheltered homeless
  - Individuals experiencing substance use disorders, specifically those that use injection drugs
- Primary at-risk workers:
  - EMS, Campus Police, Facilities
  - Homeless Service Providers
  - Engagement Center Staff
  - Recovery Services Staff

70-80% Vaccination Goal

Hygiene and Sanitation

- Hepatitis A Disinfection Guidelines
  - Enhanced Cleaning at Facilities
  - Personal Protective Equipment
- Posters



BOSTON PUBLIC HEALTH COMMISSION

Hepatitis A Disinfection Guidelines

Hepatitis A is a liver infection caused by the hepatitis A virus. Highly contagious, the hepatitis A virus is usually transmitted by the fecal-oral route, either through person-to-person contact or consumption of contaminated food or beverages. Contamination can occur when infected persons do not wash their hands properly after going to the bathroom and then touch other objects or food items. Surfaces that are frequently touched should be cleaned and sanitized often. These surfaces include:

- Faucets
- Sinks
- Toilets and Commodes
- Light Switch Plates
- Kitchen Surfaces
- Phones
- Tables and Chairs
- High Chairs
- Doorknobs
- Keyboards
- Wheelchairs and Walkers
- Linens and Bedding
- Recreation Equipment
- Railings
- Remote Controls
- Ice Machines

Disinfection for Exposed Surfaces

Chlorine Bleach: Mix and use the chlorine solution promptly. Allow 1 minute of contact time and then rinse with water. Replace bottles of opened bleach every 30 days. Discard any unused diluted mixtures.

5000 ppm: 1 and 2/3 cups bleach in 1 gallon water. Use for stainless steel, food/mouth contact items, tile floors, nonporous surfaces, counters, sinks and toilets.

Other Disinfectants: To determine if a product is effective against hepatitis A, review the product label or specification sheet and ensure it states effective against hepatitis A or norovirus. The product name can be searched in the Environmental Protection Agency's registered product database at: https://iaspub.epa.gov/apex/pesticides/f?p=PPLS:1

Remember

- Wear gloves and protect your clothing.
- Use chemicals in well-ventilated areas.
- Never mix anything except water with bleach.
- For surfaces that are corroded or damaged by bleach, use another product effective against HAV.

Steps to Cleaning Up Vomit or Feces

- Block off area immediately.
- Put on personal protective equipment (PPE), including two sets of gloves, masks, eye protection or face shield, and gown.
- Clean up visible debris using disposable absorbent material (paper towels or other type of disposable cloths). Handle contaminated material as little as possible and with minimal agitation to reduce aerosolization.
- Discard soiled items carefully in a durable plastic bag.
- Disinfect area and objects surrounding the contamination with an appropriate disinfectant effective against hepatitis A (see box to the left).
- Take off outer set of gloves (leaving inner set of gloves on), gown and mask, in that order, and discard before exiting the clean-up area.
- Place discarded PPE in a durable plastic bag.
- Wearing the inner set of gloves, transport bag to a secure trash container; do not allow the bag to contact clothing.
- Always wash your hands for 20 seconds with warm, soapy water after handling any contaminated material, trash, or waste.

Surface-Specific Tips

Toys

- Toys that enter a child's mouth must be disinfected, rinsed thoroughly, and air dried or run through a dishwasher at the highest temperature setting.
- Remove visible debris on softer toys that have been soiled and launder at the highest temperature setting. Discard if necessary.

Linens, Clothing, Textiles

- Keep contaminated and uncontaminated items separate.
- Wash in a pre-wash cycle, then use a regular wash cycle with detergent, and dry at the highest temperature setting.

Food Surfaces

- After disinfection, rinse food prep area with water.
- Prevent chemical contact with food during cleaning.
- Secure chemicals away from food after cleaning.

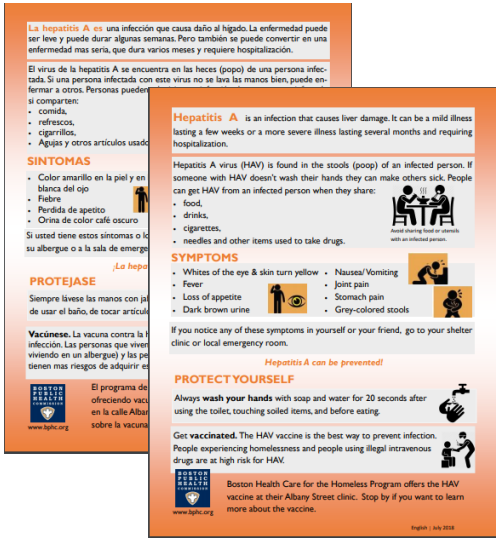
Medical Equipment

- Medical equipment used for infected patients should be either dedicated to that room or be thoroughly disinfected upon removal from the room.
- Selection of cleaning agent should be consistent with the equipment manufacturer's recommendations.

Additional Information

www.bphc.org
www.cdc.gov/hepatitis

Adapted from San Diego County Public Health 9/12/2018



La hepatitis A es una infección que causa daño al hígado. La enfermedad puede ser leve y puede durar algunas semanas. Pero también se puede convertir en una enfermedad mas seria, que dura varios meses y requiere hospitalización.

El virus de la hepatitis A se encuentra en las heces (popo) de una persona infectada. Si una persona infectada con este virus no se lava las manos bien, puede enfermar a otros. Personas pueden
si comparten:
- comida,
- refrescos,
- cigarrillos,
- Agujas y otros artículos usad

SINTOMAS
- Color amarillo en la piel y en blanca del ojo
- Fiebre
- Perdida de apetito
- Orina de color café oscuro

Si usted tiene estos sintomas o lo su albergue o a la sala de emerge

¡La hepa

PROTEJASE
Siempre lávese las manos con ja de usar el baño, de tocar artícul

Vacúnese. La vacuna contra la h infección. Las personas que viven viviendo en un albergue) y las pe tienen mas riesgos de adquirir es

El programa de ofreciendo vacu en la calle Albar sobre la vacuna

www.bphc.org

Hepatitis A is an infection that causes liver damage. It can be a mild illness lasting a few weeks or a more severe illness lasting several months and requiring hospitalization.

Hepatitis A virus (HAV) is found in the stools (poop) of an infected person. If someone with HAV doesn't wash their hands they can make others sick. People can get HAV from an infected person when they share:
- food,
- drinks,
- cigarettes,
- needles and other items used to take drugs.

Avoid sharing food or utensils with an infected person.

SYMPTOMS
- Whites of the eye & skin turn yellow
- Fever
- Loss of appetite
- Dark brown urine
- Nausea/Vomiting
- Joint pain
- Stomach pain
- Grey-colored stools

If you notice any of these symptoms in yourself or your friend, go to your shelter clinic or local emergency room.

Hepatitis A can be prevented!

PROTECT YOURSELF

Always **wash your hands** with soap and water for 20 seconds after using the toilet, touching soiled items, and before eating.

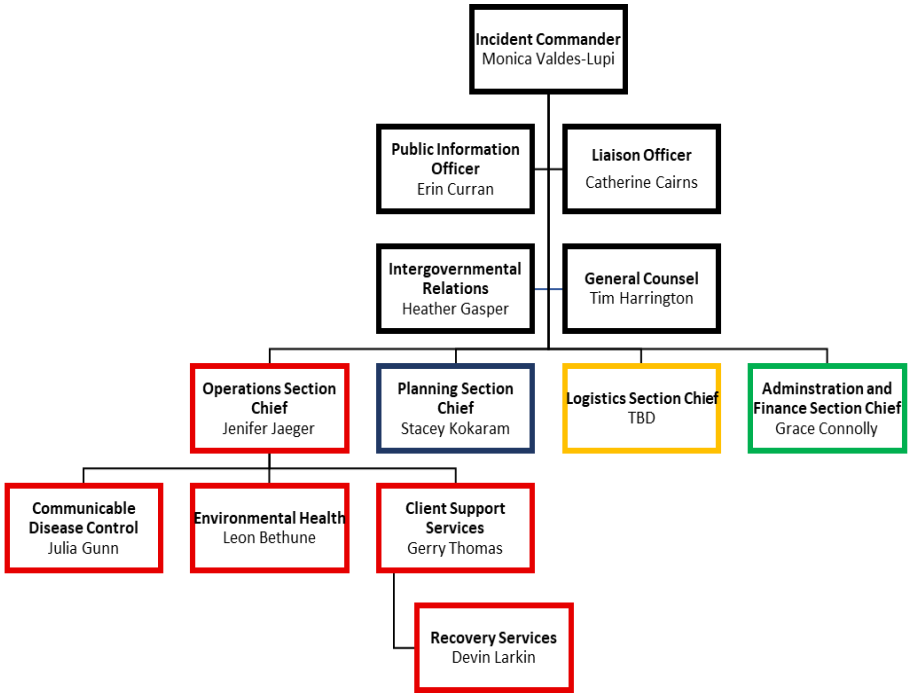
Get **vaccinated.** The HAV vaccine is the best way to prevent infection. People experiencing homelessness and people using illegal intravenous drugs are at high risk for HAV.

Boston Health Care for the Homeless Program offers the HAV vaccine at their Albany Street clinic. Stop by if you want to learn more about the vaccine.

www.bphc.org

English | July 2018

Incident Management



- Established Incident Management Team
- Weekly Coordination Calls
- Weekly BPHC Situation Reports
- Coordination w/the Massachusetts Department of Public Health

Next Steps

- In-person planning session w/partners and providers
  - Lessons Learned
  - Future Planning
- Continue implementation of current Hepatitis A Response Plan

Questions?