HEPATITIS A OUTBREAK

KY17-089

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July 31, 2018

The purpose of this briefing is to:

- ❑ List national trends in Multi-state Hepatitis A Outbreak
- ❑ Identify statewide epidemiology of current outbreak
- ❑ Describe Characteristics of Hepatitis A Outbreak KY17-089 in Jefferson County
- ❑ Define Hepatitis A risk factors for infection
- ❑ Discuss local challenges encountered in current KY Outbreak
- ❑ Explain possible solutions to address challenges

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Multi-State HAV Statistics

State	Onset	Cases	Hospitalization Rate	Deaths
Michigan	8/2016	863	695 (81%)	27 (3%)
Utah	1/2017	259	138 (55%)	
California	4/2017	704	461 (65%)	21 (3%)
Kentucky	11/2017	1221	687 (56%)	8 (<1%)
Indiana	11/2017	283	133 (47%)	1
Missouri	9/2017	144	63 (43%)	0
Tennessee	12/2017	98	61 (62%)	0
Ohio	1/2018	156	105 (67%)	0
Arkansas	2/2018	63		
West Virginia	3/2018	629	397 (64%)	2

Updated: 7/24/18 from individual state health department websites, 7/30/18 from KDPH

Figure 1: Geographic Distribution of Outbreak-Associated Cases by County

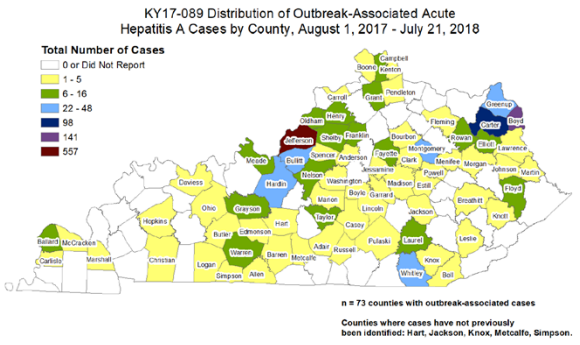

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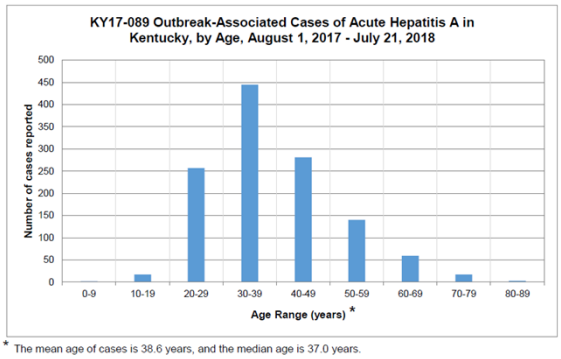
Figure 3: Outbreak-Associated Cases by Age



* The mean age of cases is 38.6 years, and the median age is 37.0 years.

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Table 3: Frequent Risk Factors of Outbreak-associated Cases

KY17-089 Risk Factors of Outbreak-Associated Acute Hepatitis A Cases, August 1, 2017 – July 21, 2018#A	
Risk Factor	**Number of Cases Reporting Risk Factor (n=1007)* †**
Homelessness + No Illicit Drug Use	15 (1.5%)
Illicit Drug Use + No/Unk Homelessness	601 (60%)
Homelessness + Illicit drug use	146 (14.5%)
No Outbreak-Related Risk Factors	224 (22%)

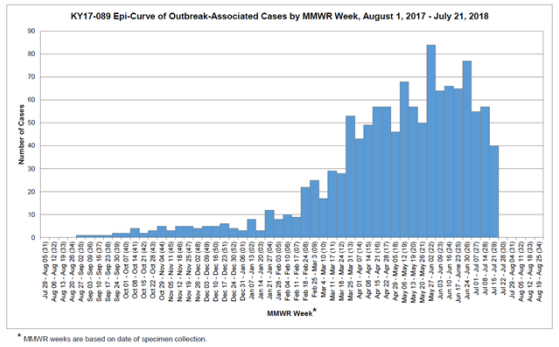
* Risk factor information is unavailable for 214 (17.5%) of all outbreak-associated cases.

† The categories below do not add up to the total number in this count due to other possible risk factor combinations not shown in the table.

At this point in the outbreak, MSM is no longer considered an outbreak-related risk factor. Percentages in this table may have changed due to removing MSM from risk factor combinations.

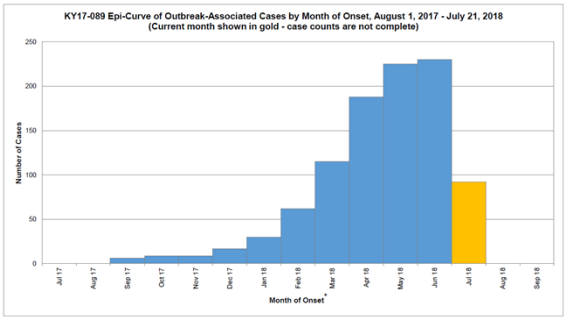
A 21 MSM cases have been reported. Of those, 6 have reported no other risk factors.

Figure 4: Epidemic-curve (Epi-Curve) of Outbreak-Associated Cases



* MMWR weeks are based on date of specimen collection.

Figure 5: Epidemic-curve (Epi-Curve) of Outbreak-Associated Cases by Month of Onset



* Date of onset has been reported for 80.5% (or 983/1221) of cases.

Epidemiological Update

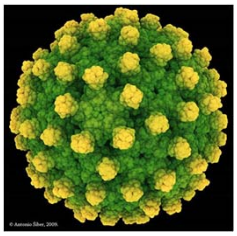
- Illicit Drug Use (62%)
- Homeless (26%)
- MSM (3%)
- Epi-linked: known contact to case (14.5%)
- No known risk factors (14%)
- Corrections (13.5%-76 unique individuals)
- Food Workers (4.4%)
- Health Care Workers (2%)

Jefferson County

Uptick in cases August 2017

Statewide outbreak declared November 21, 2017

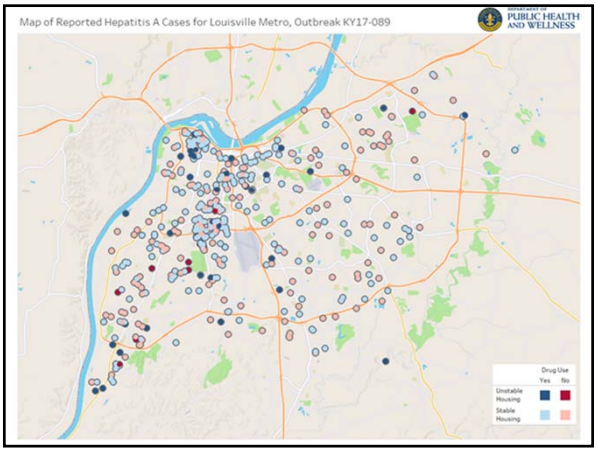
At this time, 560 cases have been confirmed (Jefferson County)*



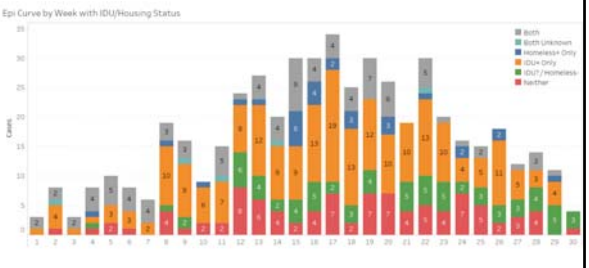
*updated 7-30-2018

Epidemiological Update

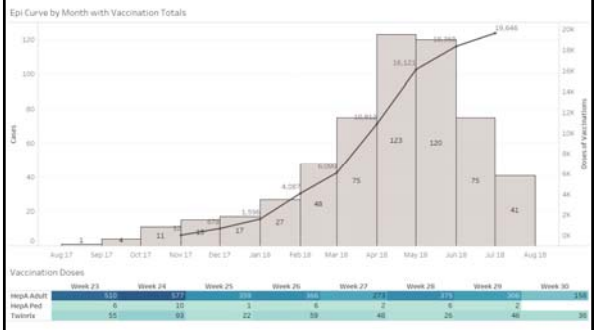
- Hospitalized (62%)
- 65% males/35% females
- Age 10-83 years, average age 39.9 years
- Coinfection with
  - Hepatitis B alone: 5.7%
  - Hepatitis C alone: up to 42.6%
    - HCV RNA +: 7.2%
    - HCV Ab+ (confirmatory testing not available): 35.6%
  - Hepatitis B and C: up to 6.1% (0.7% HBV + and HCV RNA+)



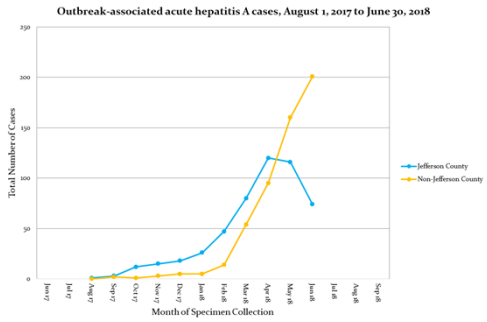
Epidemiological Update



Epidemiological Update



Jefferson vs. Non-Jefferson Co. Cases



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Case Definition

Clinical Description

- An acute illness with a discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain),

AND either

- Jaundice OR
- Elevated serum alanine aminotransferase (ALT) or aspartate aminotransferase (AST) levels.

Laboratory Criteria for Diagnosis

- Immunoglobulin M (IgM) antibody to hepatitis A virus (anti-HAV) positive

Case Classification: Confirmed

- A case that meets the clinical case definition and is laboratory confirmed, OR
- A case that meets the clinical case definition and occurs in a person who has an epidemiologic link with a person who has laboratory-confirmed hepatitis A (i.e., household or sexual contact with an infected person during the 15-50 days before the onset of symptoms)

https://wwwn.cdc.gov/nndss/conditions/hepatitis-a-acute/case-definition/2012/

LMPHW Response Efforts to Date

Location/ category	Total
LMPHW Based OPS	10029
LM Corrections	7133
Community Partners Includes vaccines in Food workers)	61931
Total	79093

Updated: 7/31/18

- Locations: >70 unique locations, most repeated
  - Syringe exchange
  - Homeless shelters and feeding sites
  - Homeless healthcare service providers
  - Substance recovery facilities

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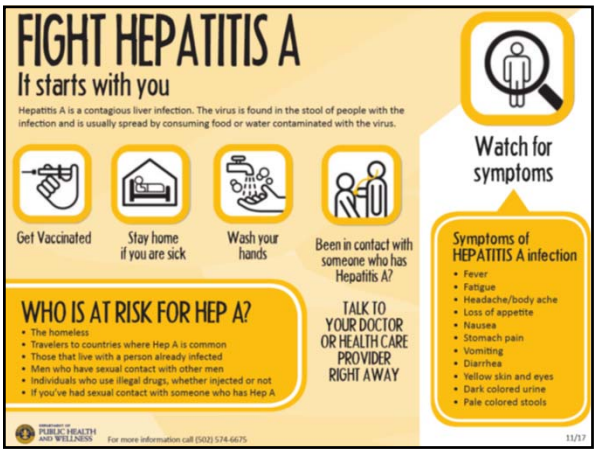
Diagnostic Challenges

- Differential Diagnosis?
  - Hepatitis: viral (already high rates Hep B and C), autoimmune, cholestatic/obstructive, alcoholic, NAFLD/NASH
  - Influenza
  - Viral gastroenteritis
  - Withdrawal (opioid)
- Diagnostic testing
  - IgM not total AB!

Diagnostic Challenges

- Confirming uncertain cases:
  - IgM indeterminate
  - Questionable clinical histories (i.e. no case criteria) in IgM + patients
  - Vaccinated patients with symptoms and positive IgM
  - Patients with recurrent symptoms (6-10%) at 4-16 weeks after initial symptoms (biphasic) or prolonged symptoms
  - Often in those with significant implications for spread (i.e. food worker, correctional inmate)
- Genotype--slow to receive results
- PCR testing availability

Schiff, E. R. (1992). Atypical clinical manifestations of hepatitis A. Vaccine, 10(SUPPL. 1). DOI: 10.1016/0264-410X(92)90534-Q



More Challenges

- Lack of reporting/Delays in reporting
  - Providers unaware of reporting requirement or think lab or hospital does this for them; don't realize we rely on their clinical history for our investigations
  - Individuals no longer at hospital
  - Inaccurate or no contact information
  - Lost to follow up
- Engaging community partners
  - Correctional Facilities
  - Hospital Systems/ERs
- Media influence (sensationalism)
  - Too much urgency / inappropriate focus of concern
  - Lack of urgency

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DEPARTMENT OF PUBLIC HEALTH AND WELLNESS

Response to Challenges

- Stand up Incident Command System (ICS)
- Think creatively
  - Utilize all staff for response, some play bigger role (nurses, food inspectors, epi)
  - Laboratory capability expansion: PCR testing on site
- Provider education: Greater Louisville Medical Society, Grand Rounds
  - Order IgM
  - Improve reporting
  - Vaccinate!
- Communication with community partners
  - Need for quicker reporting
  - Need for isolation of suspected cases (correctional facilities and hospitals)
  - Sanitation
  - Need for vaccination of at-risk individuals (health care workers, food workers)
- Collaboration with community partners
  - Homeless coalition
  - Restaurant industry
  - Corrections
  - Hospital systems