



# Kentucky Department for Public Health

## KY17-089 - Acute Hepatitis A Outbreak Weekly Report

### Morbidity and Mortality Weekly Report (MMWR) Week 32, 2018

#### August 5, 2018 – August 11, 2018

**Brief Description of Outbreak:** In November 2017, the Kentucky Department for Public Health (DPH) identified an outbreak of acute hepatitis A. The increase in cases observed in Kentucky was well over the 10-year average of reported hepatitis A cases, and several cases have been infected with hepatitis A virus (HAV) strains genetically linked to outbreaks in California, Utah, and Michigan. Similar to hepatitis A outbreaks in other states, the primary risk factors have been illicit drug use and homelessness. A contaminated food source has not been identified, and HAV transmission is believed to have occurred through person-to-person contact. Below is a weekly and cumulative update on the outbreak.

In accordance with 902 KAR 2:020, cases of acute hepatitis A should be reported within 24 hours.

The case definition used for outbreak-associated acute hepatitis A cases is available upon request.

**Table 1: Summary of Outbreak-Associated Acute Hepatitis A Cases\***

Update for Week 32:		Total Case Counts: 8/1/2017 – 8/11/2018:	
Number of new cases (n=66):	Confirmed <sup>^</sup> - 0 Probable - 38 Suspected - 28	Total number of cases (n=1425):	Confirmed <sup>^</sup> - 477 Probable - 612 Suspected - 336
Number of counties with new cases:	27	Total number of counties with cases:	83 (69% of KY counties)
Number of individuals with specimens submitted for genotyping where results are available:	41	Number of individuals with specimens submitted for genotyping where results are available:	506 (35.5%)
Number of cases with genotype IB among those with genotype testing:	38	Total number of cases with genotype IB among those with genotype testing:	461 (91% of those tested)
Number of Hospitalizations:	40	Total Number of Hospitalizations:	809 (57%)
Number of deaths Reported <sup>†</sup> :	1	Total number of deaths reported <sup>†</sup> :	9 (<1%)

\* Cases are reported based on date of specimen collection

<sup>^</sup> Cases are generally confirmed weeks after submission for testing, so will only be reflected in total case counts.

<sup>†</sup> Deaths are defined as any outbreak-associated acute hepatitis A case with documentation of hepatitis A as a contributing factor to the individual's death.

**Table 2: Cumulative Distribution of Cases by County**

<b>KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases, by County, August 1, 2017 – August 11, 2018*^#</b>					
<b>County</b>	<b>Total number of cases reported</b>	<b>Number of confirmed cases</b>	<b>Number of probable cases</b>	<b>Number of suspected cases</b>	<b>Incident Rate per 100,000 population</b>
Adair	2	0	1	1	10.3
Allen	9	0	7	2	43.0
Anderson	5	0	3	2	22.2
Ballard	9	3	2	4	112.0
Barren	1	1	0	0	2.3
Bath^	1	0	1	0	8.1
Bell	3	0	1	2	11.2
Boone	9	0	7	2	6.9
Bourbon	2	0	2	0	10.0
Boyd	155	79	42	34	323.1
Boyle	3	0	1	2	10.0
Breathitt	1	0	1	0	7.7
Bullitt	51	25	19	7	63.6
Butler	3	0	1	2	23.4
Campbell	11	1	8	2	11.9
Carlisle	1	0	1	0	20.6
Carroll	1	0	0	1	9.3
Carter	117	28	66	23	431.0
Casey	1	1	0	0	6.3
Christian	1	1	0	0	1.4
Clark	2	0	2	0	5.5
Clay	3	0	1	2	14.7

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,  
by County, August 1, 2017 – August 11, 2018\*<sup>^</sup>#**

<b>County</b>	<b>Total number of cases reported</b>	<b>Number of confirmed cases</b>	<b>Number of probable cases</b>	<b>Number of suspected cases</b>	<b>Incident Rate per 100,000 population</b>
Daviess	2	0	1	1	2.0
Edmonson	1	0	1	0	8.2
Elliott	9	0	2	7	119.6
Estill	1	0	1	0	7.0
Fayette	7	2	3	2	2.2
Fleming	3	0	0	3	20.8
Floyd	14	0	7	7	38.6
Franklin	11	0	8	3	21.8
Gallatin <sup>^</sup>	1	0	1	0	11.4
Garrard	3	0	1	2	17.1
Grant	13	3	6	4	52.0
Grayson	7	2	4	1	26.6
Greenup	53	21	18	14	149.2
Hardin	24	7	5	12	22.2
Harrison	1	0	1	0	5.3
Hart	1	0	1	0	5.3
Henry	7	1	4	2	43.7
Hickman	1	0	0	1	22.1
Hopkins	1	0	0	1	2.2
Jackson	2	0	1	1	14.9
Jefferson	584	268	218	98	75.7
Jessamine	1	0	0	1	1.9
Johnson	9	0	4	5	39.8

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,  
by County, August 1, 2017 – August 11, 2018\*<sup>^</sup>#**

<b>County</b>	<b>Total number of cases reported</b>	<b>Number of confirmed cases</b>	<b>Number of probable cases</b>	<b>Number of suspected cases</b>	<b>Incident Rate per 100,000 population</b>
Kenton	15	2	11	2	9.1
Knott	2	0	2	0	13.1
Knox	2	0	1	1	6.4
Laurel	12	0	9	3	19.9
Lawrence	4	1	1	2	25.4
Leslie	2	0	0	2	19.4
Lincoln	3	1	0	2	12.3
Logan	1	0	1	0	3.7
Madison	2	1	0	1	2.2
Magoffin <sup>^</sup>	1	0	1	0	8.0
Marion	4	2	1	1	20.6
Marshall	2	0	1	1	6.4
Martin	6	0	3	3	52.4
McCracken	6	2	1	3	9.2
Meade	9	1	1	7	32.0
Menifee	7	0	5	2	108.4
Metcalfe	1	0	1	0	9.9
Montgomery	40	2	28	10	143.2
Morgan	1	0	1	0	7.6
Nelson	14	3	6	5	30.7
Ohio	5	0	2	3	20.7
Oldham	7	3	2	2	10.5
Owen <sup>^</sup>	1	0	1	0	9.3

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,  
by County, August 1, 2017 – August 11, 2018\*^#**

<b>County</b>	<b>Total number of cases reported</b>	<b>Number of confirmed cases</b>	<b>Number of probable cases</b>	<b>Number of suspected cases</b>	<b>Incident Rate per 100,000 population</b>
Pendleton	1	0	1	0	6.9
Perry <sup>^</sup>	1	0	0	1	3.8
Pike	4	0	4	0	6.8
Powell	2	0	2	0	16.2
Pulaski	1	0	1	0	1.6
Rowan	20	0	12	8	81.6
Russell	1	0	0	1	5.6
Shelby	19	5	11	3	40.1
Simpson	4	0	4	0	22.1
Spencer	4	3	1	0	21.6
Taylor	15	2	11	2	58.9
Warren	17	5	10	2	13.2
Washington	2	0	1	1	16.5
Whitley	39	1	22	16	107.7
Wolfe	1	0	0	1	13.8
<b>Total Number of Cases:</b>	<b>1425</b>	<b>476</b>	<b>613</b>	<b>336</b>	<b>32.0</b>

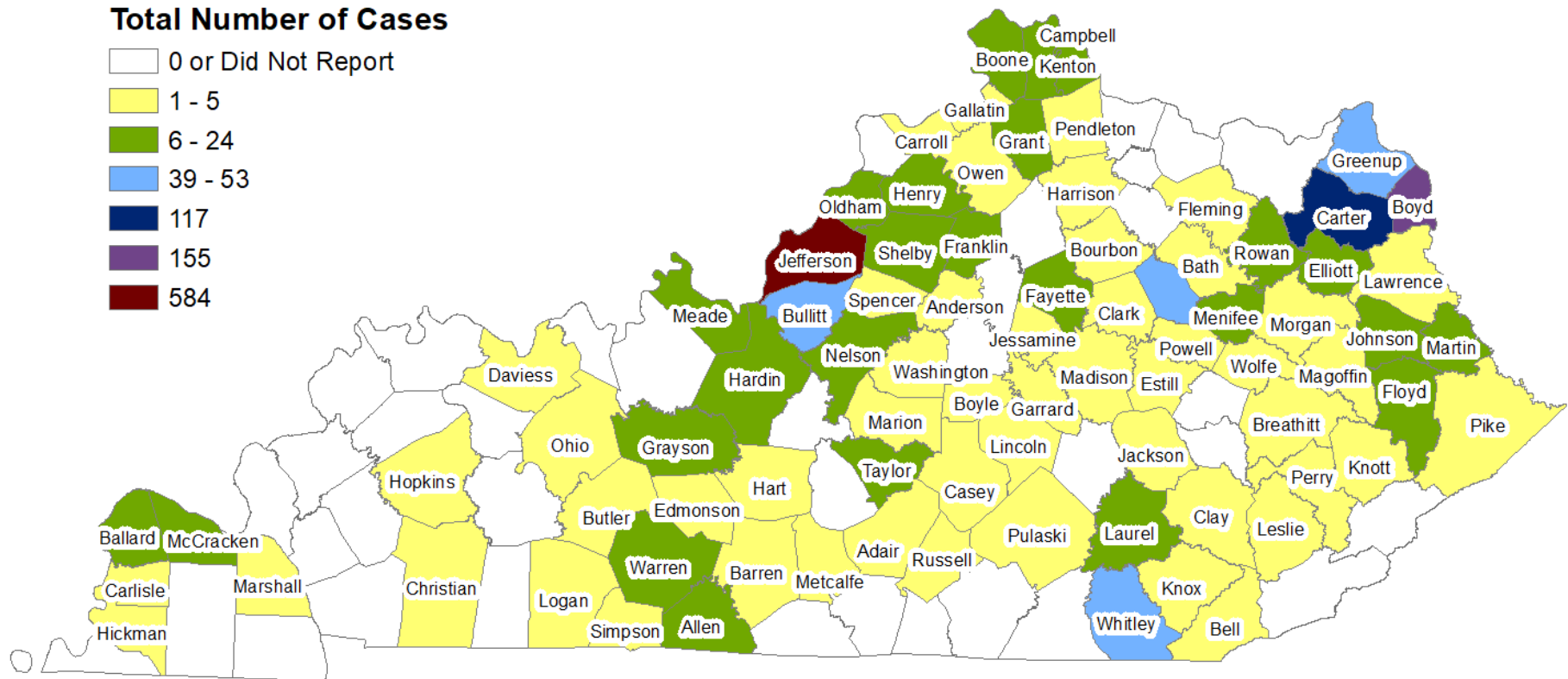
\* Cases are reported based on date of specimen collection.

<sup>^</sup> Denotes a county where cases have not been previously identified.

# As genotyping results become available, cases may be excluded if they do not meet the outbreak case definition. Cases in the following counties have been excluded from the outbreak case count this week: None.

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

**KY17-089 Distribution of Outbreak-Associated Acute Hepatitis A Cases by County, August 1, 2017 - August 11, 2018**

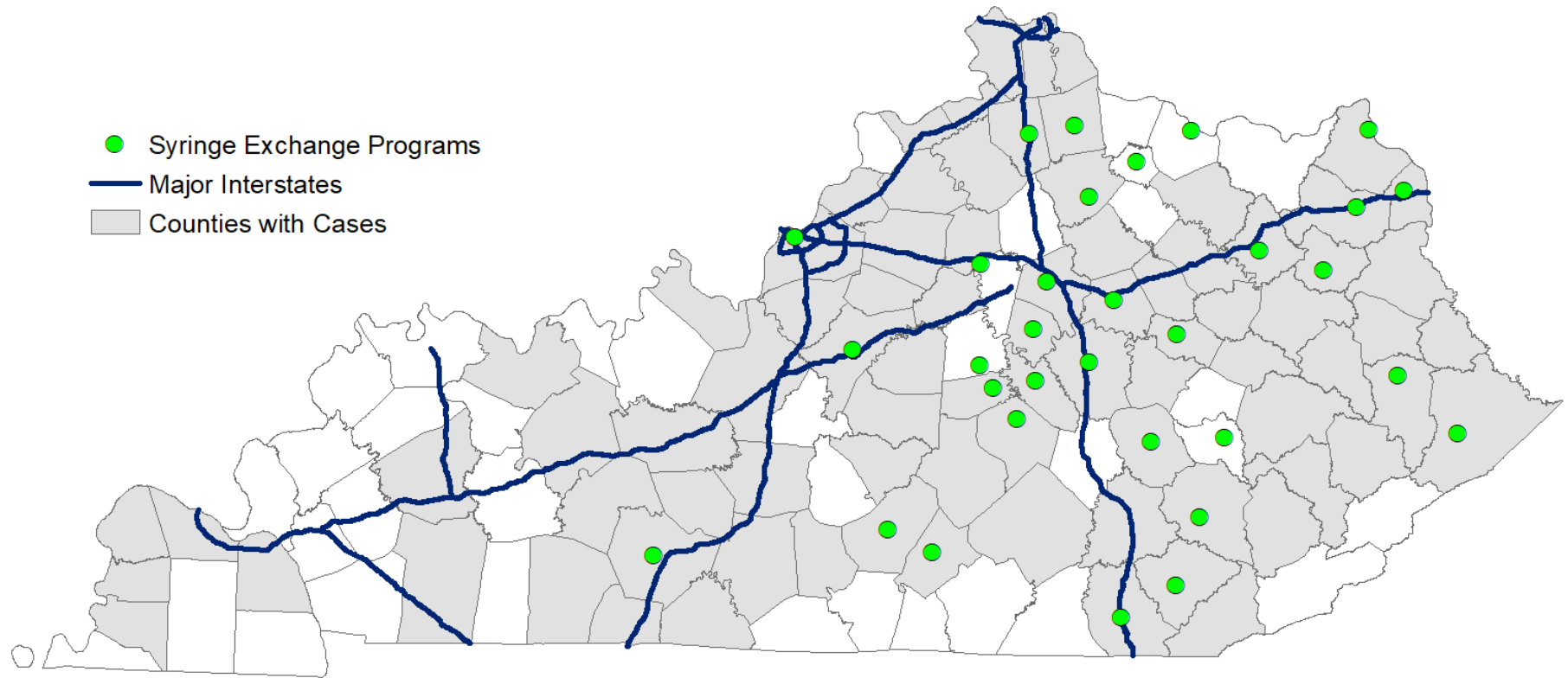


**n =83 counties with outbreak-associated cases**

**Counties where cases have not previously been identified: Bath, Gallatin, Magoffin, Owen, Perry.**

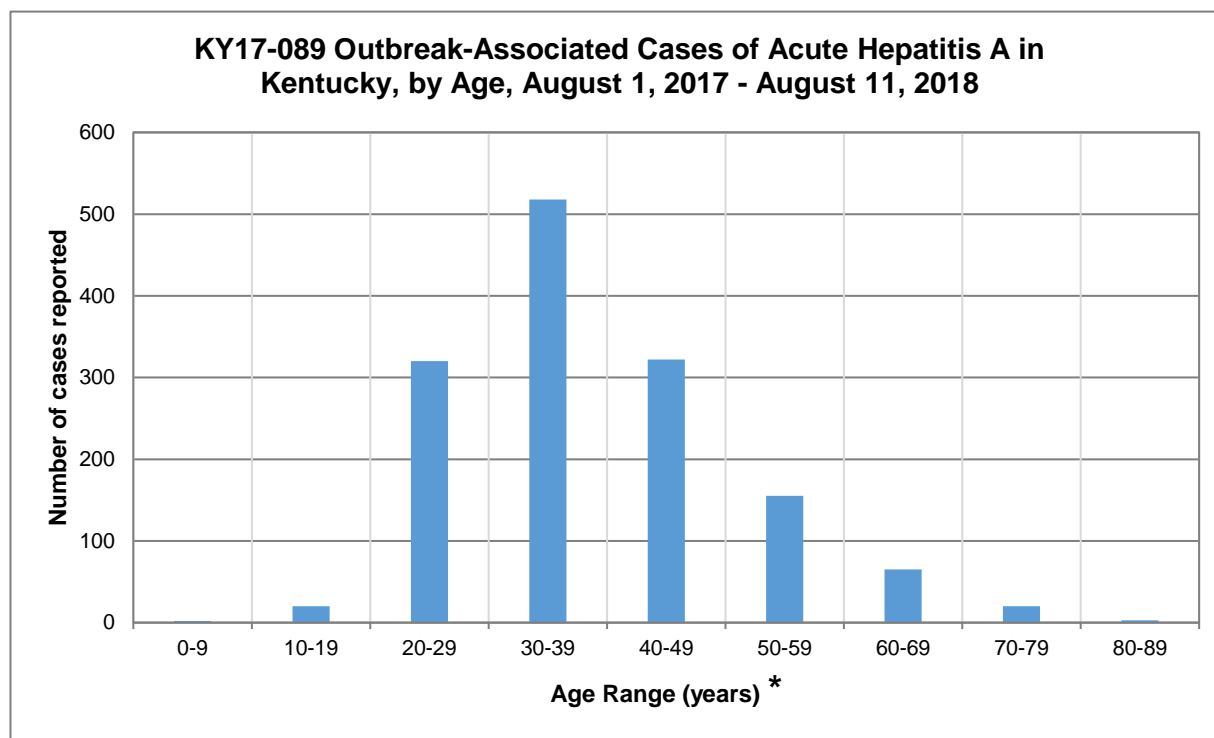
**Figure 2: Major Interstates and Syringe Exchange Programs in Counties Reporting Outbreak-Associated Cases**

**KY17-089 Major Interstates and Syringe Exchange Programs In  
Counties Reporting Outbreak-Associated Acute Hepatitis A Cases,  
August 1, 2017 - August 11, 2018**



Major Interstates include I-24, I-264, I-265, I-275, I-471, I-64, I-65, I-69, I-71, I-75, Martha Lane Collins Bluegrass Parkway, and Wendell H Ford Western KY Parkway

**Figure 3: Outbreak-Associated Cases by Age**



\* The mean age of cases is 38.3 years, and the median age is 36.0 years.

**Table 3: Frequent Risk Factors of Outbreak-associated Cases**

KY17-089 Risk Factors of Outbreak-Associated Acute Hepatitis A Cases, August 1, 2017 – August 11, 2018 <sup>#^</sup>	
Risk Factor	Number of Cases Reporting Risk Factor (n=1167) <sup>* †</sup>
Homelessness + No Illicit Drug Use	15 (1.3%)
Illicit Drug Use + No/Unk Homelessness	713 (61%)
Homelessness + Illicit drug use	157 (13.5%)
No Outbreak-Related Risk Factors	261 (22%)

\* Risk factor information is unavailable for 258 (18.1%) of all outbreak-associated cases.

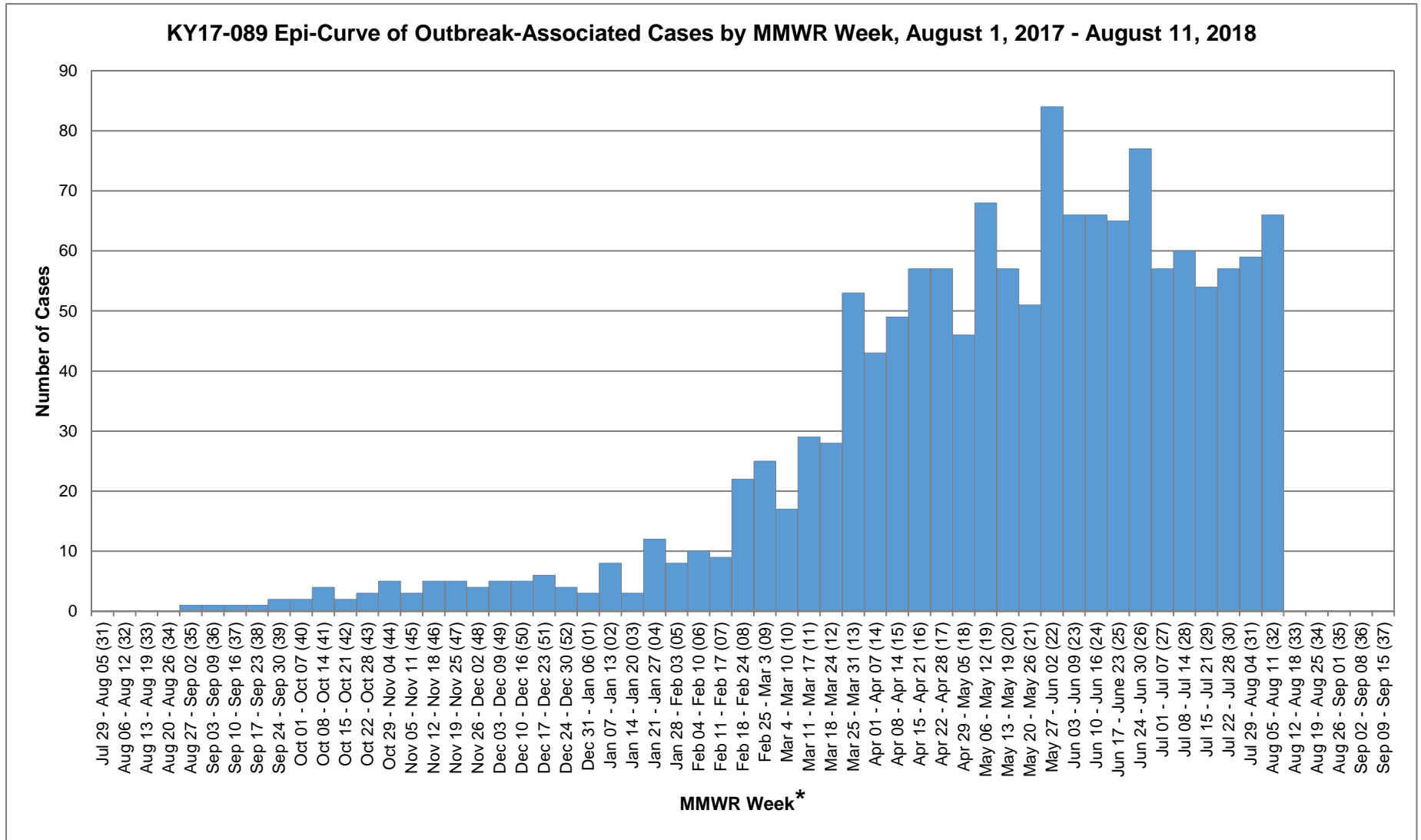
† The categories below do not add up to the total number in this count due to other possible risk factor combinations not shown in the table.

# 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.

^ 27 MSM cases have been reported. Of those, 7 have reported no other risk factors.

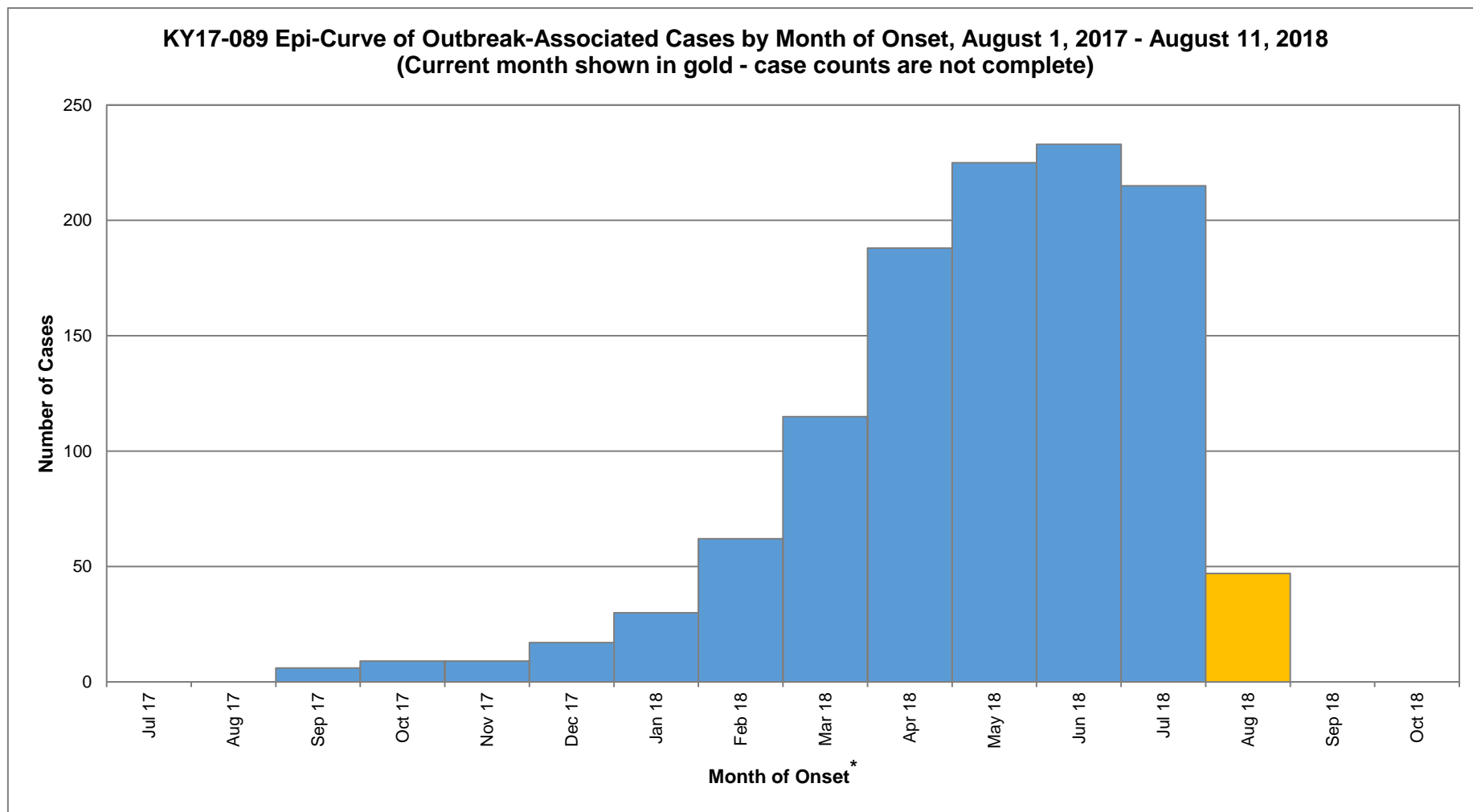


**Figure 4: Epidemic-curve (Epi-Curve) of Outbreak-Associated Cases**



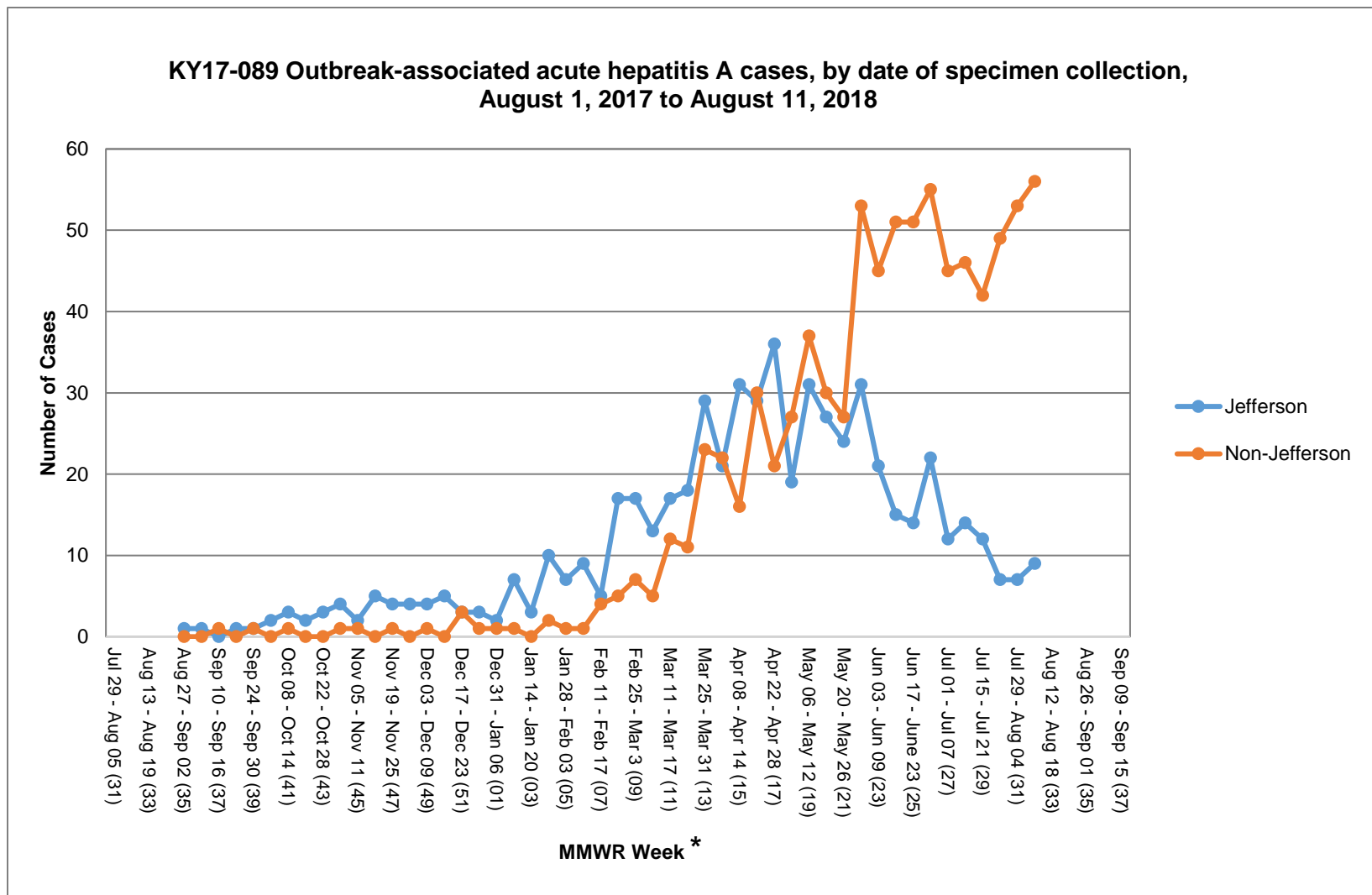
\* MMWR weeks are based on date of specimen collection.

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



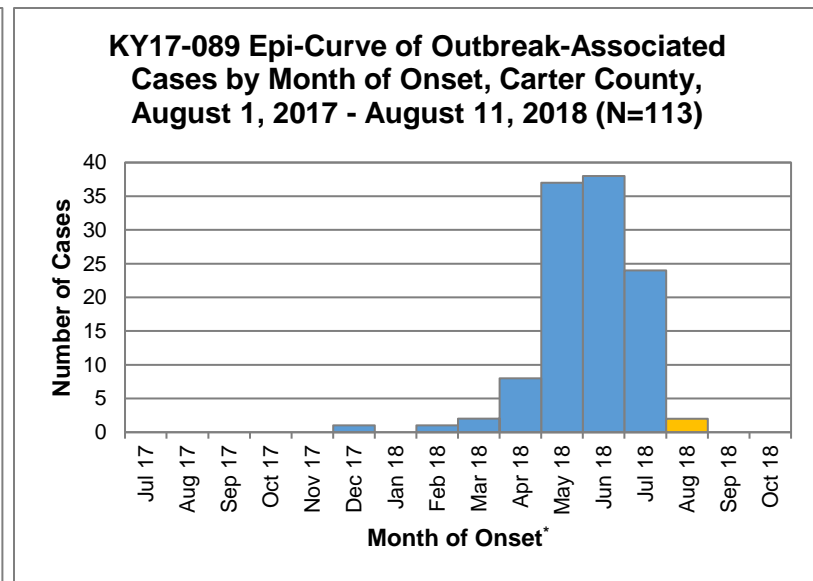
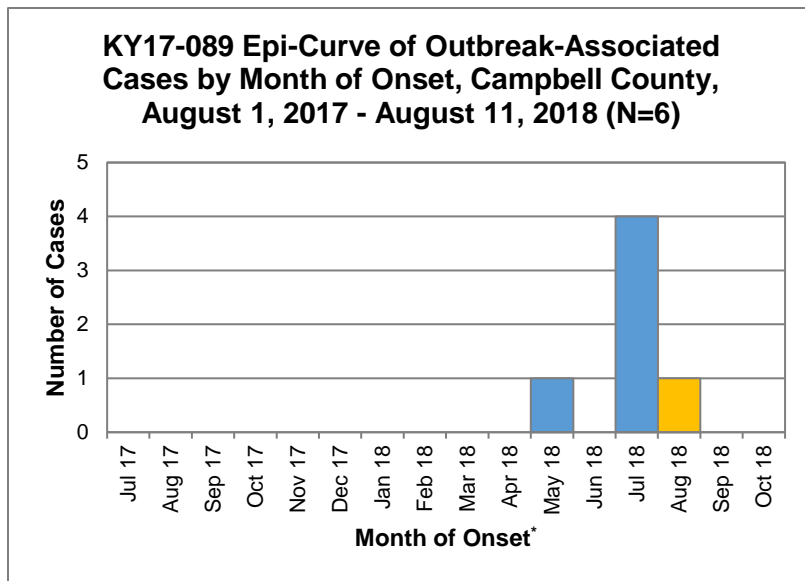
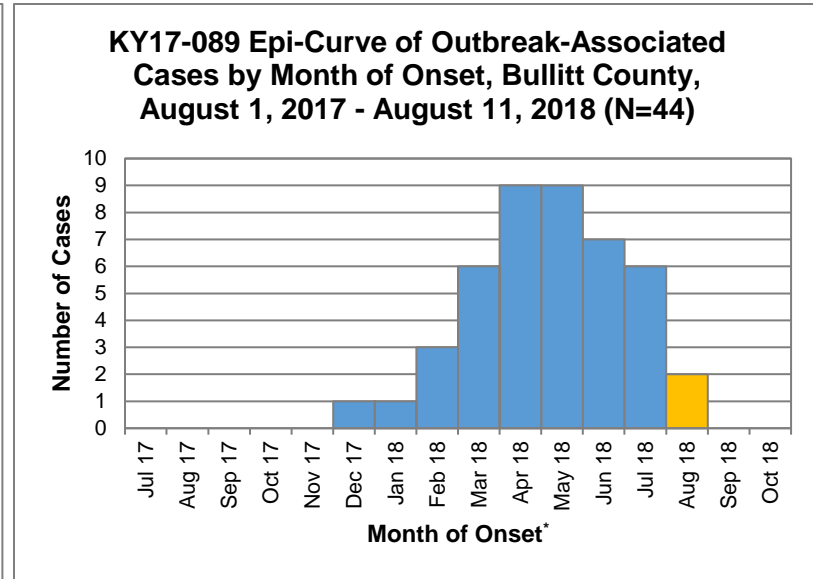
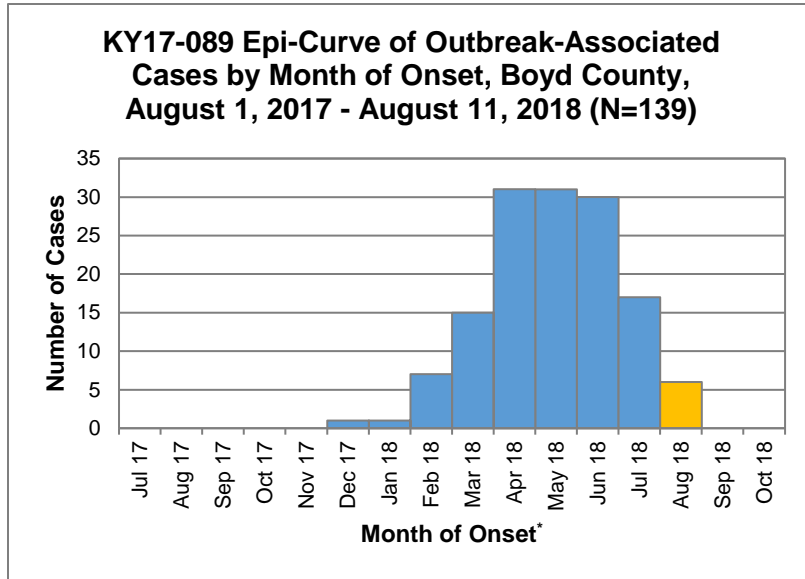
\* Date of onset has been reported for 81.1% (or 1156/1425) of cases.

Figure 6: Case Count Comparison of acute hepatitis A cases, Jefferson County versus Non-Jefferson Counties

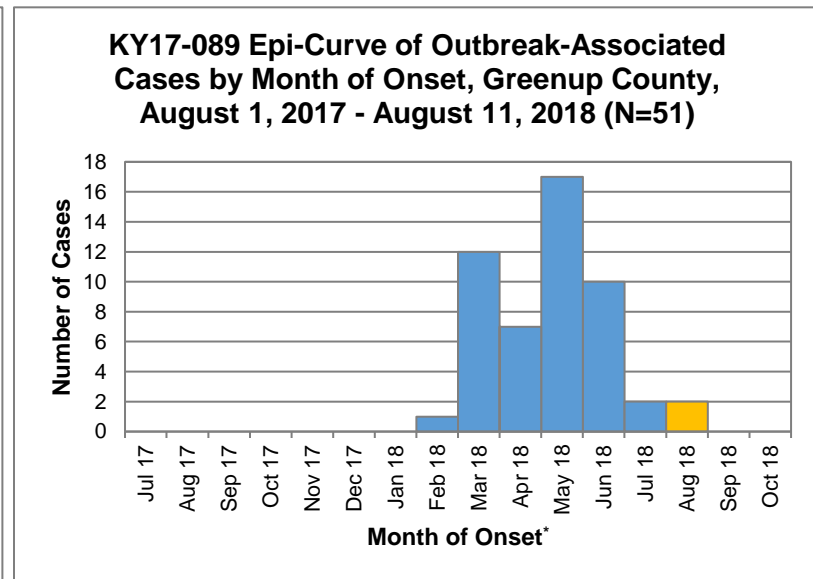
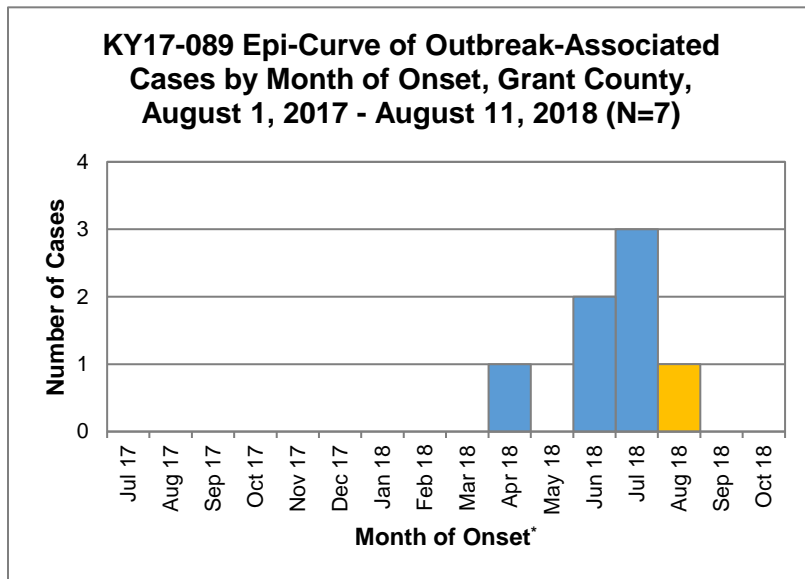
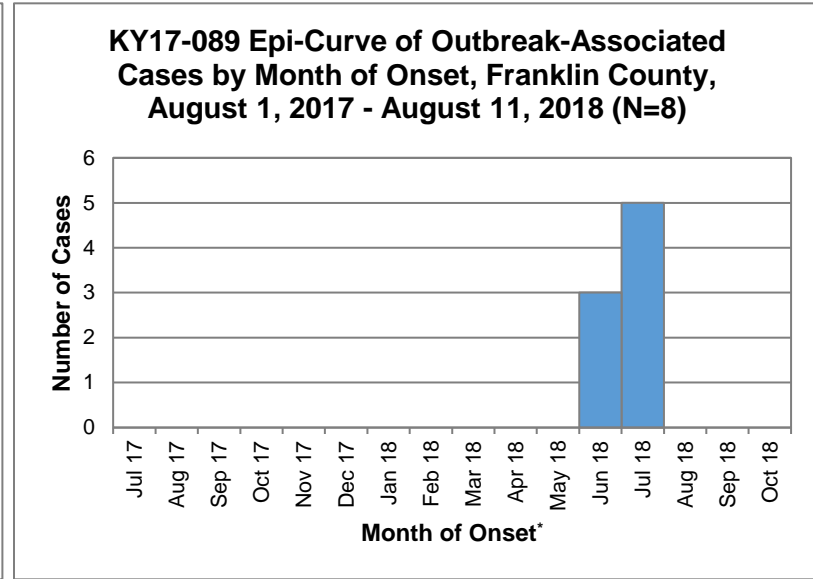
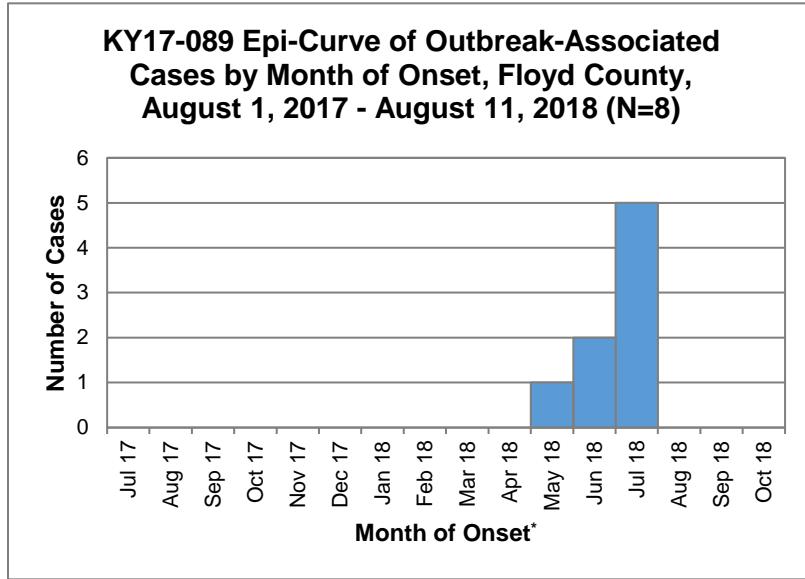


\* MMWR weeks are based on date of specimen collection.

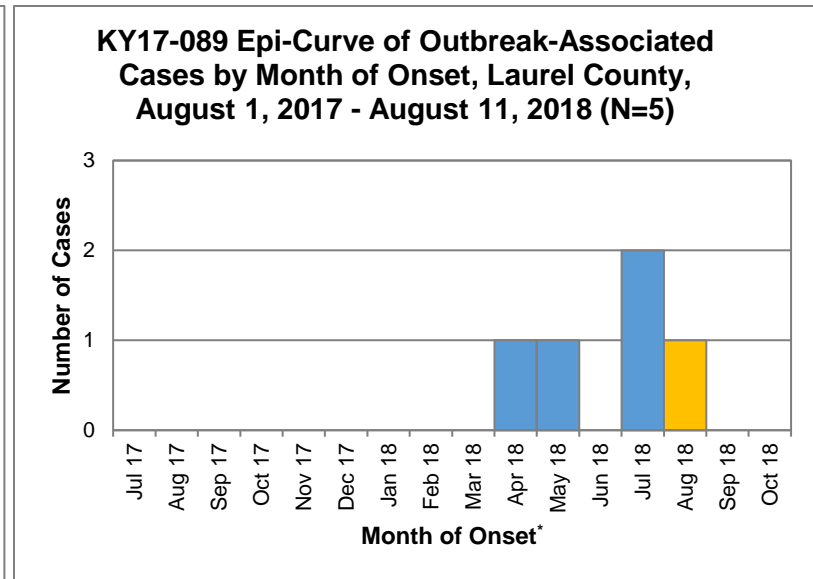
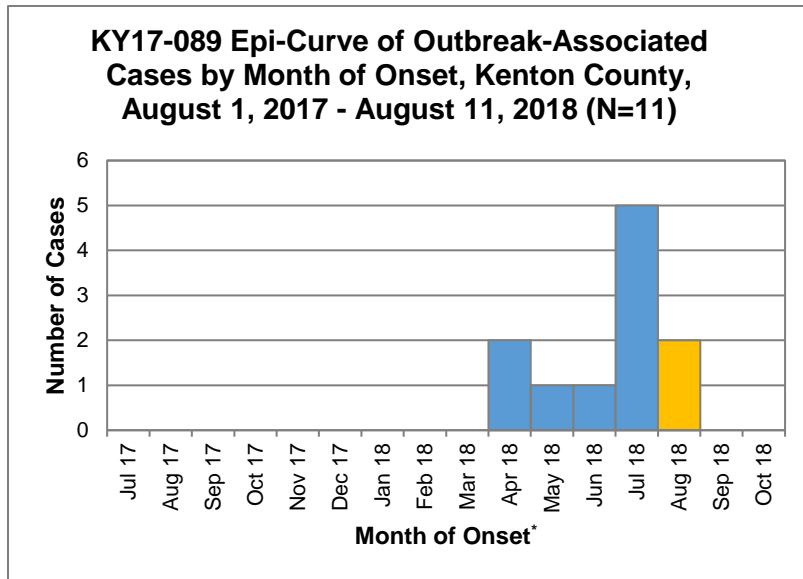
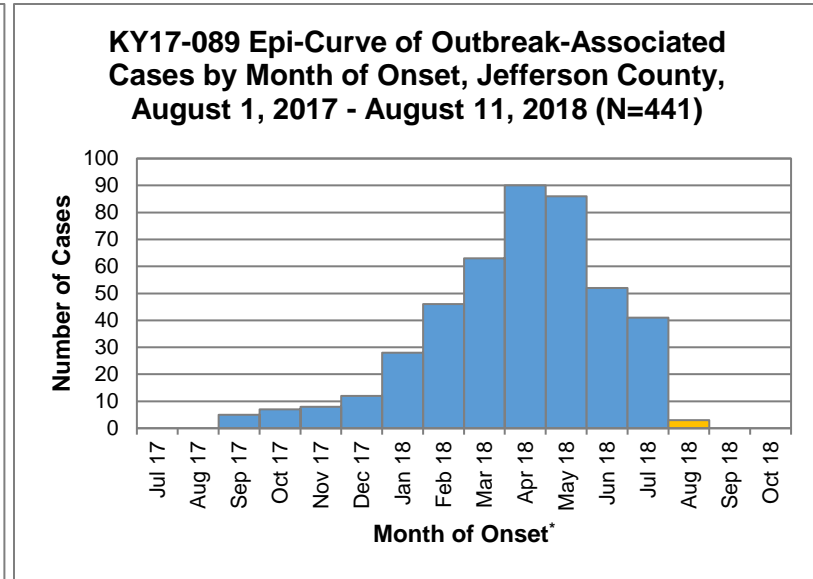
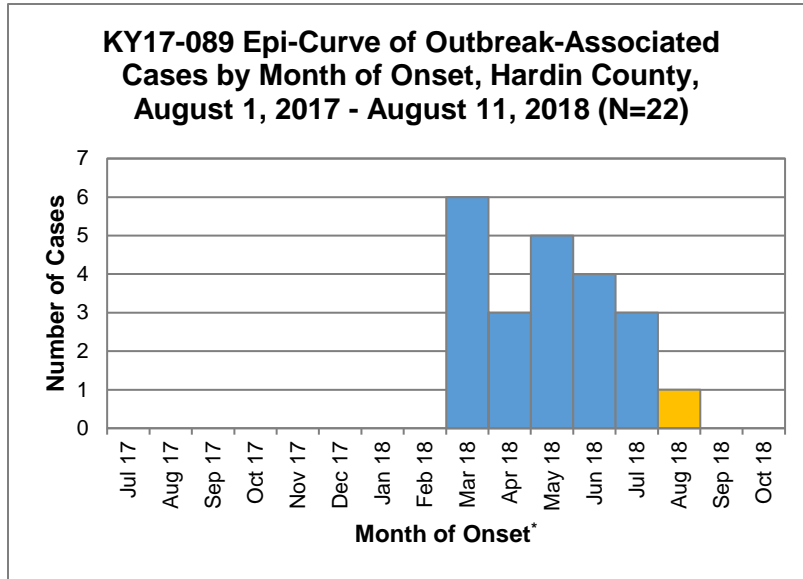
**Figures 7-10: Epidemic-curves (Epi-Curves) of Outbreak-Associated Cases in Counties with at least 10 reported cases, by Month of Onset (Counties Boyd, Bullitt, Campbell, and Carter Counties)**



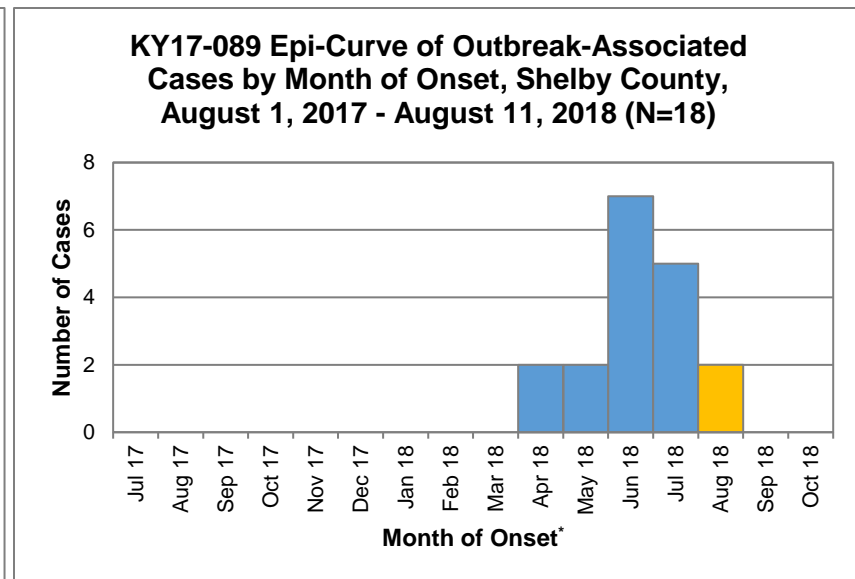
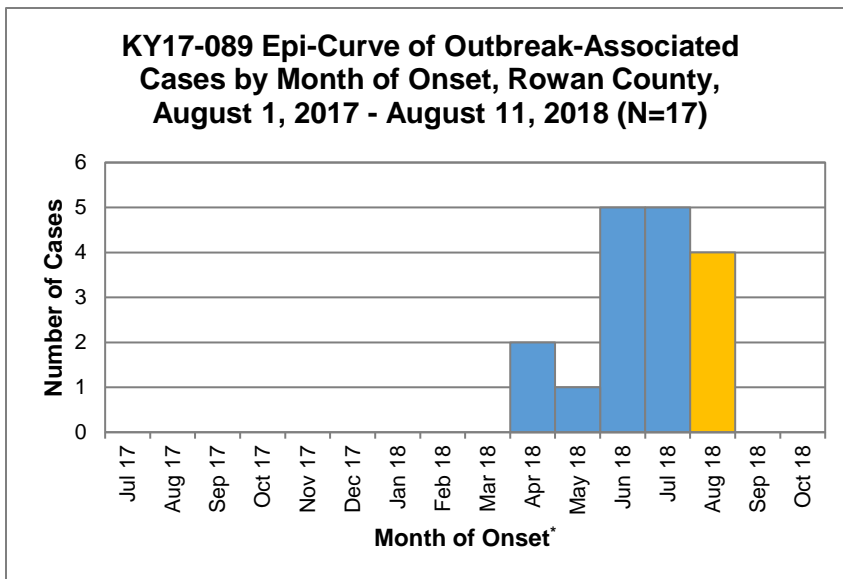
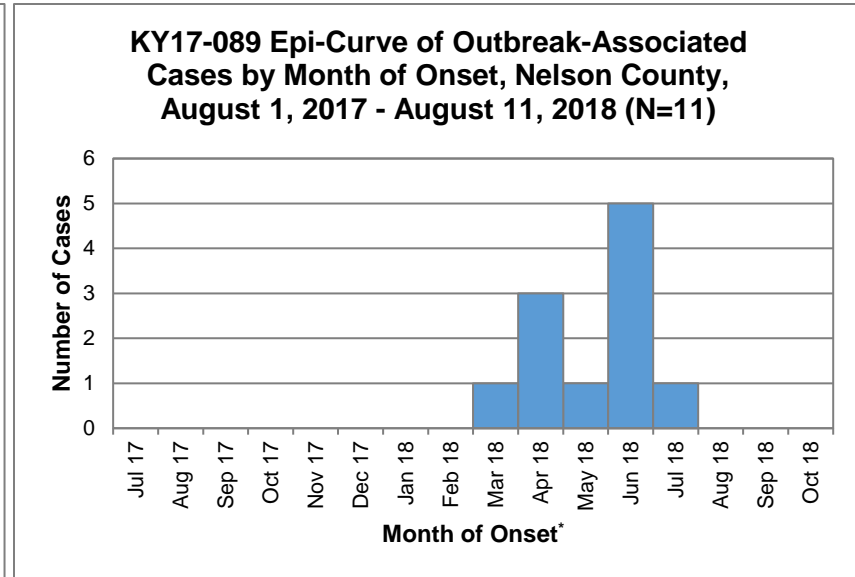
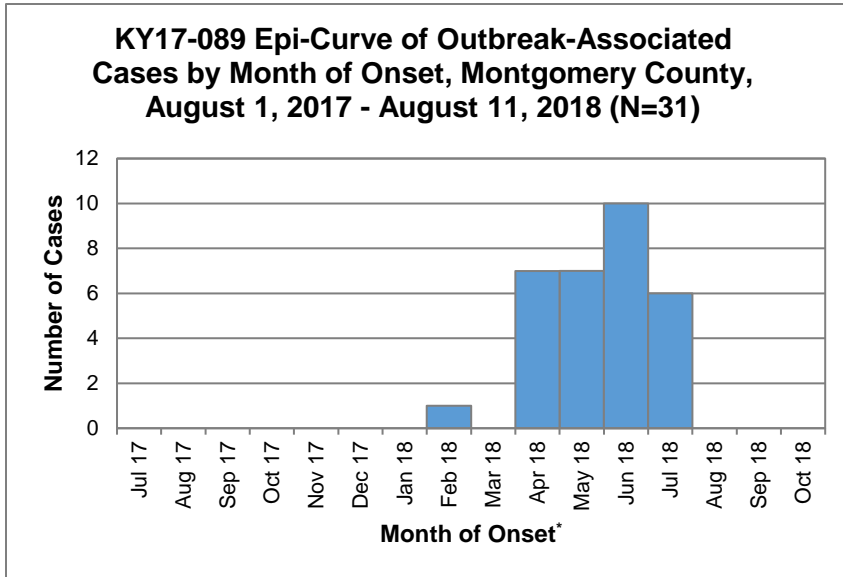
Figures 11-14: Epidemic-curves (Epi-Curves) of Outbreak-Associated Cases in Counties with at least 10 reported cases, by Month of Onset (Counties include Floyd, Franklin, Grant, and Greenup Counties)



Figures 15-18: Epidemic-curves (Epi-Curves) of Outbreak-Associated Cases in Counties with at least 10 reported cases, by Month of Onset (Hardin, Jefferson, Kenton, and Laurel Counties)



**Figure 19-22: Epidemic-curves (Epi-curves) of Outbreak-Associated Cases in Counties with at least 10 reported cases, by Month of Onset (Montgomery, Nelson, Rowan, and Shelby Counties)**



**Figure 23-25: Epidemic-curves (Epi-curves) of Outbreak-Associated Cases in Counties with at least 10 reported cases, by Month of Onset (Taylor, Warren, and Whitley Counties)**

