



## Kentucky Department for Public Health

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

### Morbidity and Mortality Weekly Report (MMWR) Week 26, 2018

### June 24, 2018 – June 30, 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 homelessness and illicit drug use. 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 26:		Total Case Counts: 8/1/2017 – 6/30/2018:	
Number of new cases (n=58):	Confirmed - 0 Probable - 30 Suspect - 28	Total number of cases (n=1034):	Confirmed - 372 Probable - 423 Suspected - 239
Number of counties with new cases:	21	Total number of counties with cases:	63 (53% of KY counties)
Number of cases with specimens submitted for genotyping where results are available:	28	Number of cases with specimens submitted for genotyping where results are available:	387 (37%)
Number of cases with genotype IB among those with genotype testing:	24	Total number of cases with genotype IB among those with genotype testing:	359 (93% of those tested)
Number of Hospitalizations:	32	Total Number of Hospitalizations:	603 (58%)
Number of deaths Reported <sup>†</sup> :	1	Total number of deaths reported <sup>†</sup> :	7 (<1%)

\* Cases are reported based on date of specimen collection

<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 – June 30, 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	0	2	10.3
Allen	2	0	2	0	9.6
Anderson	3	0	2	1	13.3
Ballard	6	3	2	1	74.6
Barren	1	1	0	0	2.3
Bell	1	0	0	1	3.7
Boone	4	0	4	0	3.1
Bourbon	2	0	2	0	10.0
Boyd	128	57	40	31	266.8
Boyle	2	0	1	1	6.7
Breathitt	1	0	1	0	7.7
Bullitt	42	22	15	5	52.3
Butler	1	0	0	1	7.8
Campbell	4	1	2	1	4.3
Carlisle	1	0	1	0	20.6
Carter	76	15	44	17	280.0
Casey	1	1	0	0	6.3
Christian	1	1	0	0	1.4
Clark	1	0	1	0	2.8
Edmonson	1	0	1	0	8.2
Elliott	3	0	1	2	39.9
Estill	1	0	1	0	7.0

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,  
by County, August 1, 2017 – June 30, 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>
Fayette	5	1	2	2	1.6
Floyd	1	0	1	0	2.8
Franklin	4	0	1	3	7.9
Garrard	2	0	1	1	11.4
Grant	4	2	2	0	16.0
Grayson	6	2	3	1	22.8
Greenup	43	15	16	12	121.1
Hardin	18	5	5	8	16.7
Henry	5	1	2	2	31.2
Hopkins	1	0	0	1	2.2
Jefferson	509	219	199	91	66.0
Jessamine	1	0	0	1	1.9
Johnson	2	0	0	2	8.9
Kenton	5	2	3	0	3.0
Knott	1	0	1	0	6.5
Laurel	4	0	2	2	6.6
Lawrence	4	1	1	2	25.4
Leslie	1	0	0	1	9.7
Lincoln	3	1	0	2	12.3
Madison	2	1	0	1	2.2
Marion	2	2	0	0	10.3
Marshall	1	0	1	0	3.2
Martin	2	0	0	2	17.5

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,  
by County, August 1, 2017 – June 30, 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>
McCracken	4	2	0	2	6.1
Meade	5	1	1	3	17.8
Menifee <sup>^</sup>	1	0	0	1	15.5
Montgomery	30	1	20	9	107.4
Nelson	12	3	5	4	26.3
Ohio	4	0	2	2	16.5
Oldham	6	3	2	1	9.0
Pendleton	1	0	1	0	6.9
Powell	2	0	2	0	16.2
Pulaski	1	0	1	0	1.6
Rowan	8	0	5	3	32.6
Russell	1	0	0	1	5.6
Shelby	11	2	7	2	23.2
Spencer	4	3	1	0	21.6
Taylor	5	0	3	2	19.6
Warren	14	3	9	2	10.9
Washington	1	0	0	1	8.2
Whitley	14	1	4	9	38.7
<b>Total Number of Cases:</b>	<b>1034</b>	<b>372</b>	<b>423</b>	<b>239</b>	<b>23.2</b>

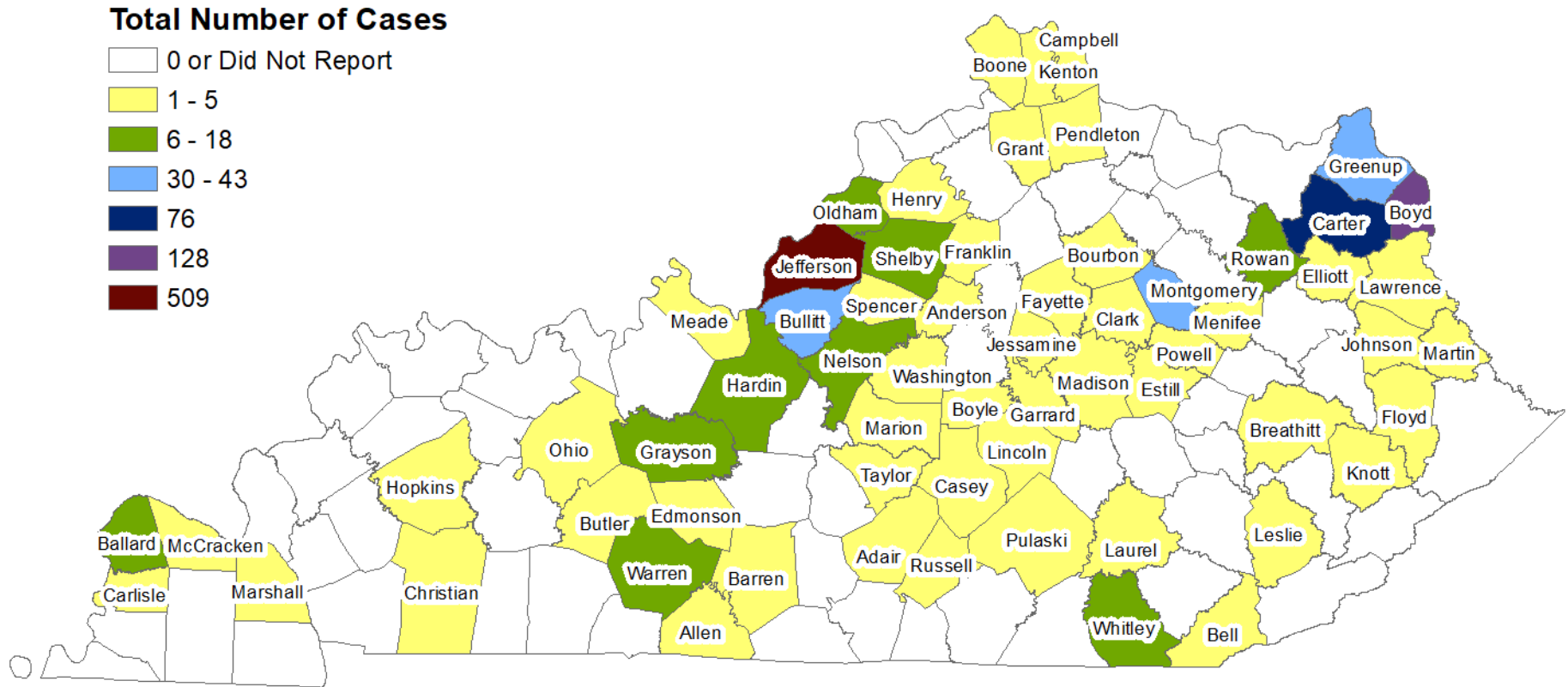
\* Cases are reported based on date of specimen collection.

<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 - June 30, 2018**

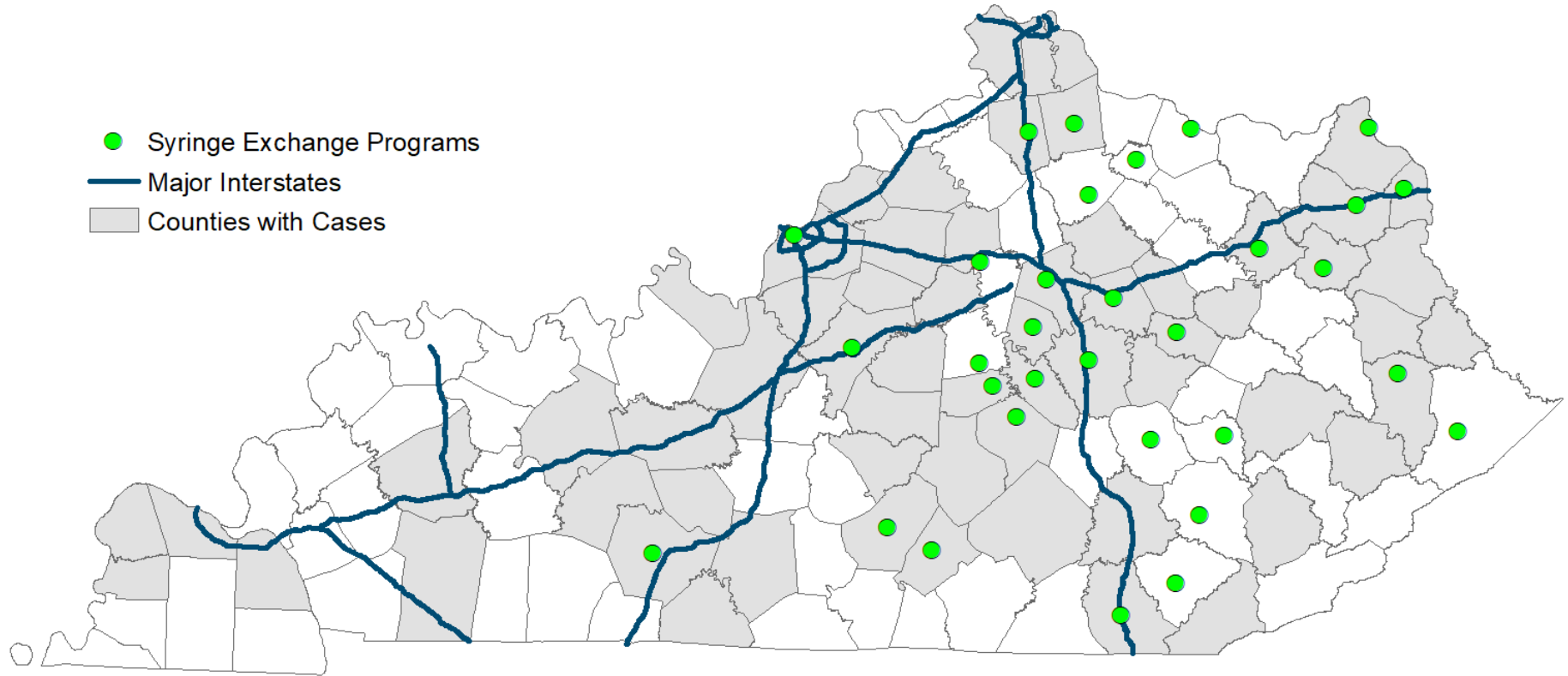


**n = 63 counties with outbreak-associated cases**

**Counties where cases have not previously been identified: Menifee.**

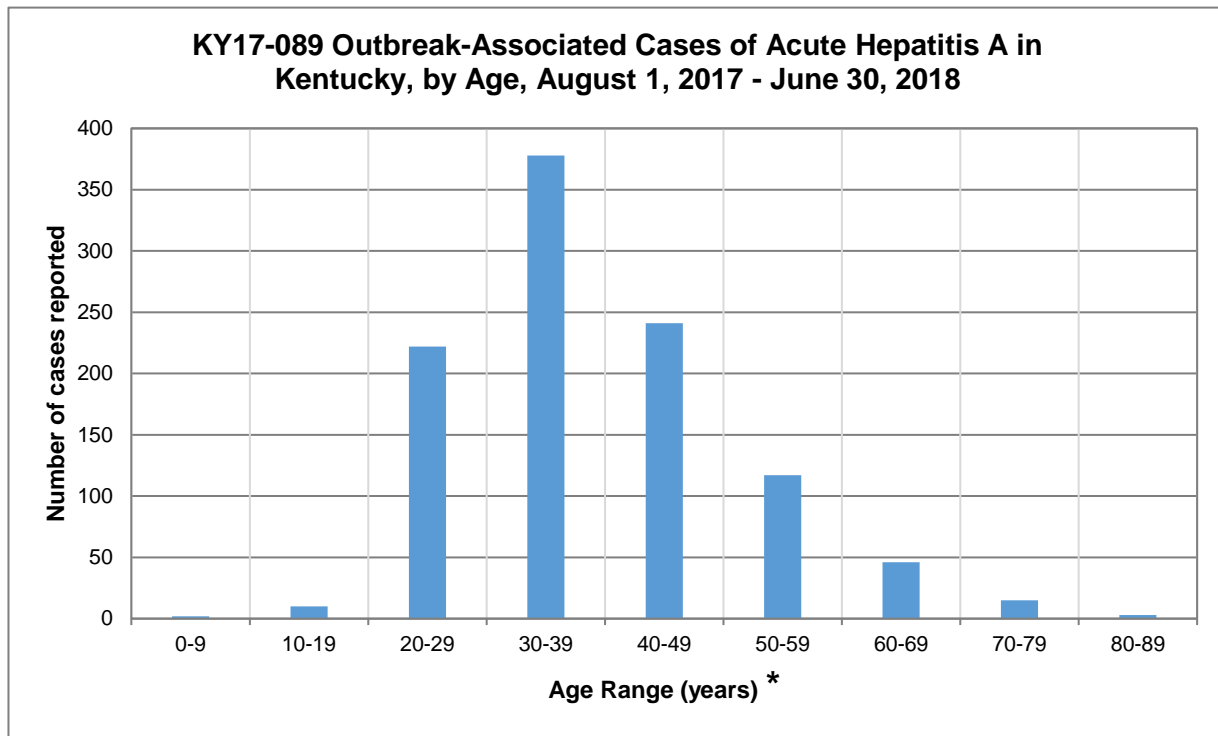
Figure 2: Major Interstates and Syringe Exchange Programs in Counties Reporting Outbreak-Associated Cases

KY17-089 Major Interstates and Syringe Exchange Programs In Counties Reporting Outbreak-Associated Acute Hepatitis A Cases, August 1, 2017 - June 30, 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**



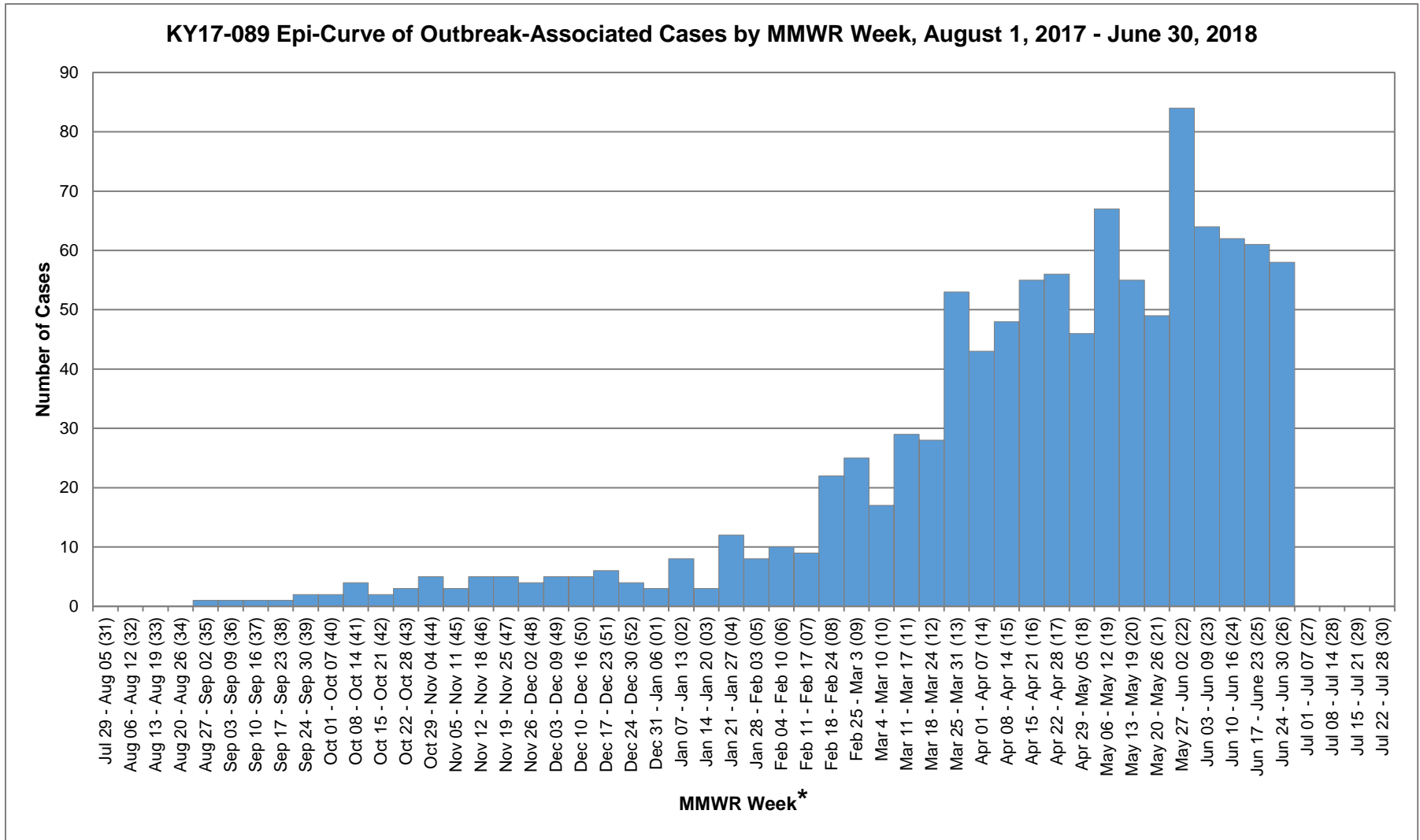
\* The mean age of cases is 38.6 years, and the median age is 37.0 years.

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

KY17-089 Risk Factors of Outbreak-Associated Acute Hepatitis A Cases*, August 1, 2017 – June 30, 2018	
Risk Factor	Number of Cases Reporting Risk Factor (n=652)*
Homelessness only	14 (2%)
Illicit drug use only	465 (71%)
Homelessness + illicit drug use	96 (15%)
MSM only	3 (<1%)
No Risk Factors	129 (20%)

\* Risk factor information is unavailable for 382 (37%) of all outbreak associated cases.

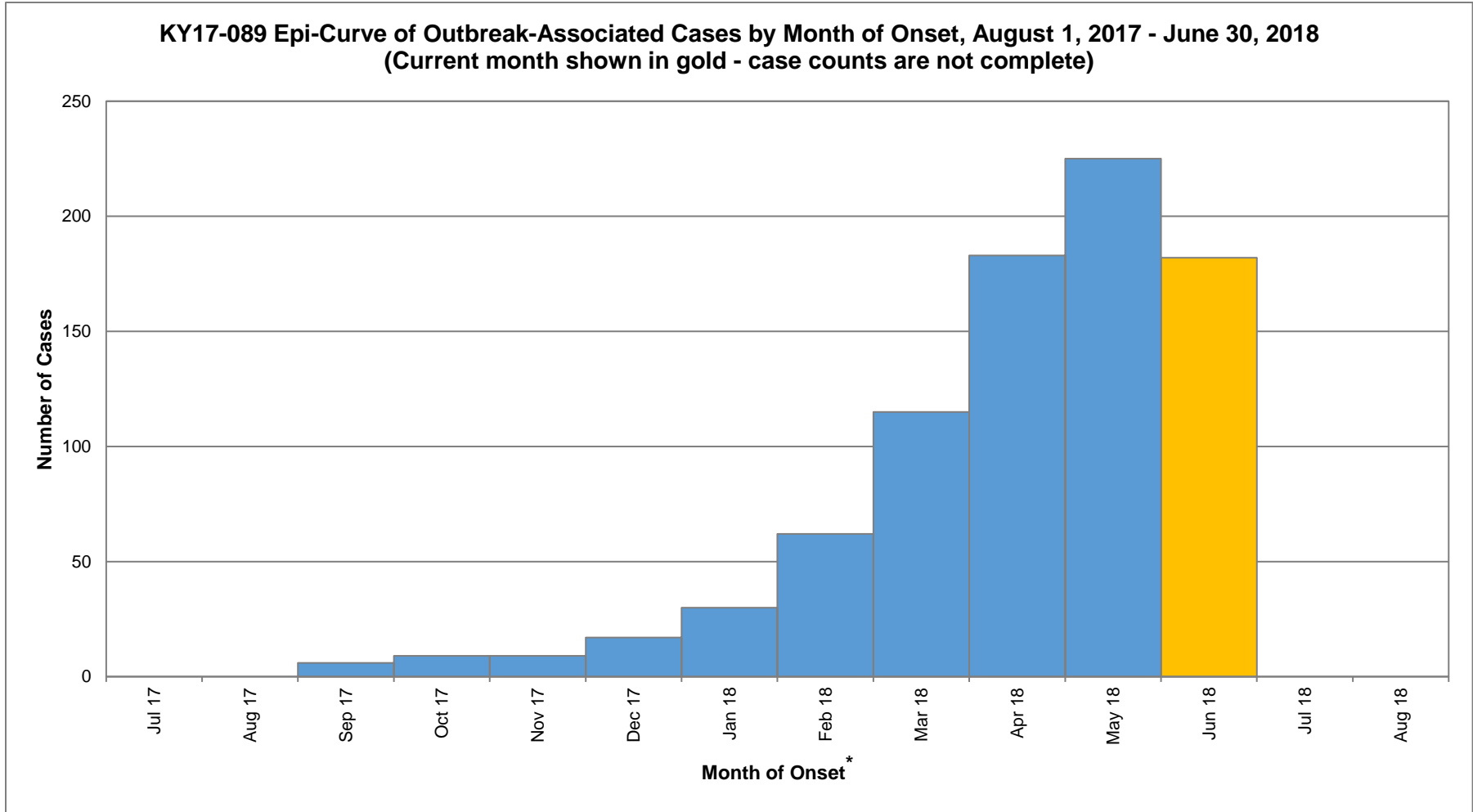
Figure 4: Epidemic-curve (Epi-Curve) of Outbreak-Associated Cases



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

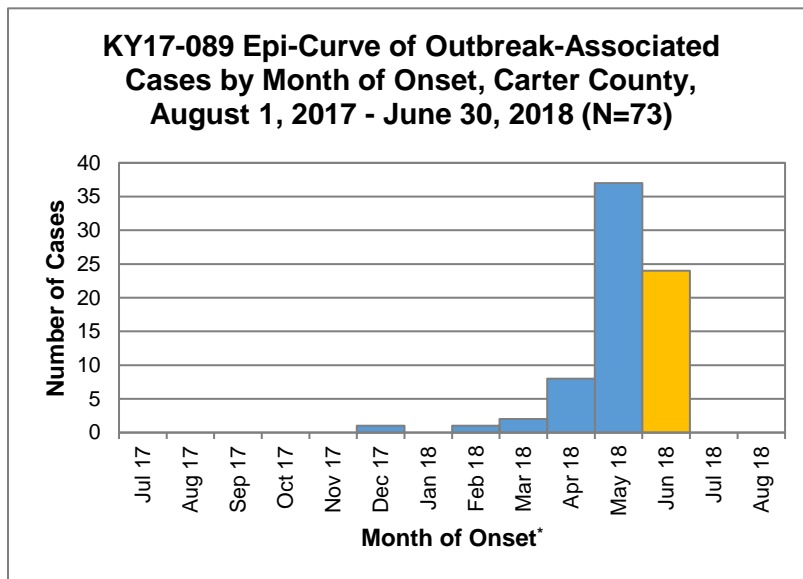
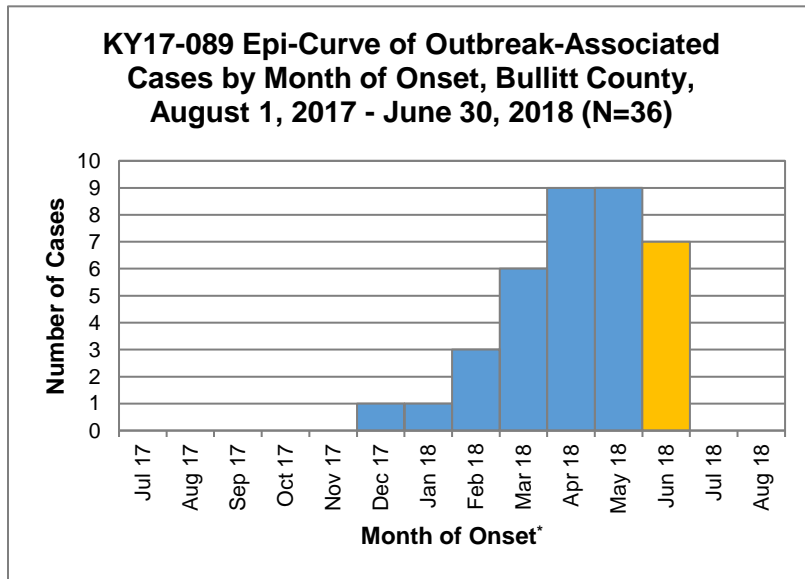
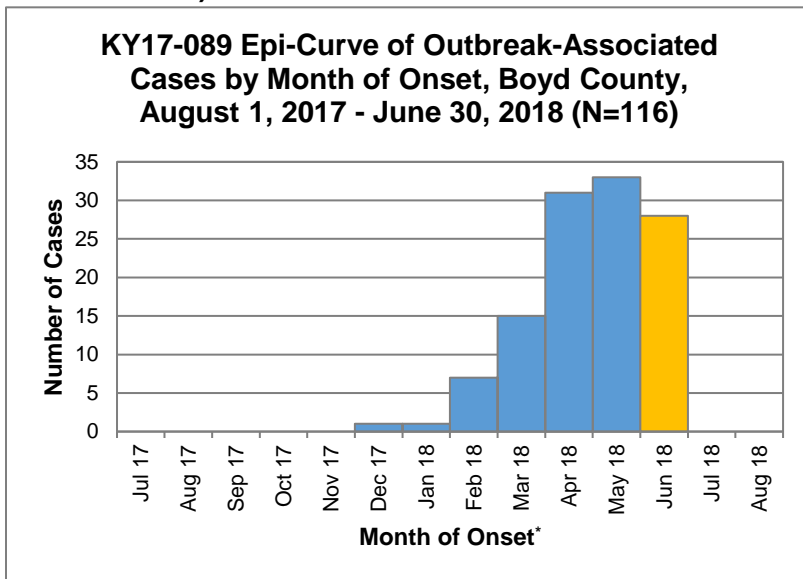
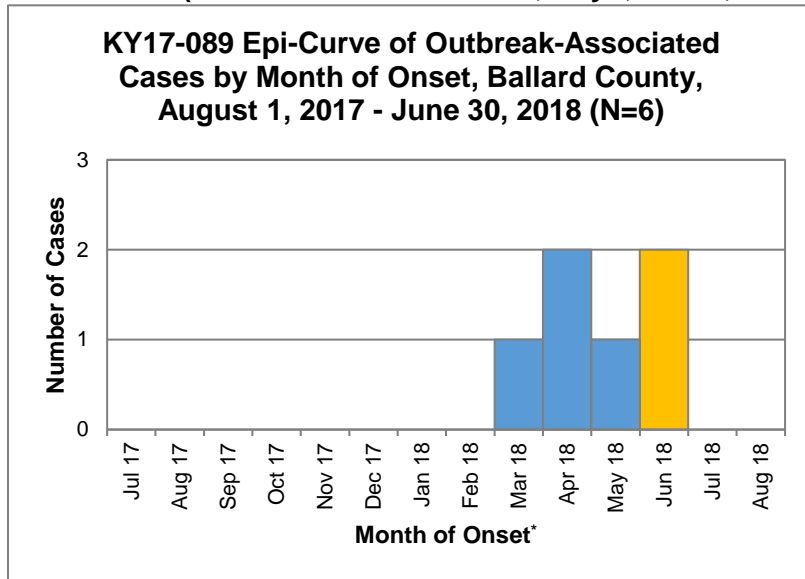


**Figure 5: Epidemic-curve (Epi-Curve) of Outbreak-Associated Cases by Month of Onset**

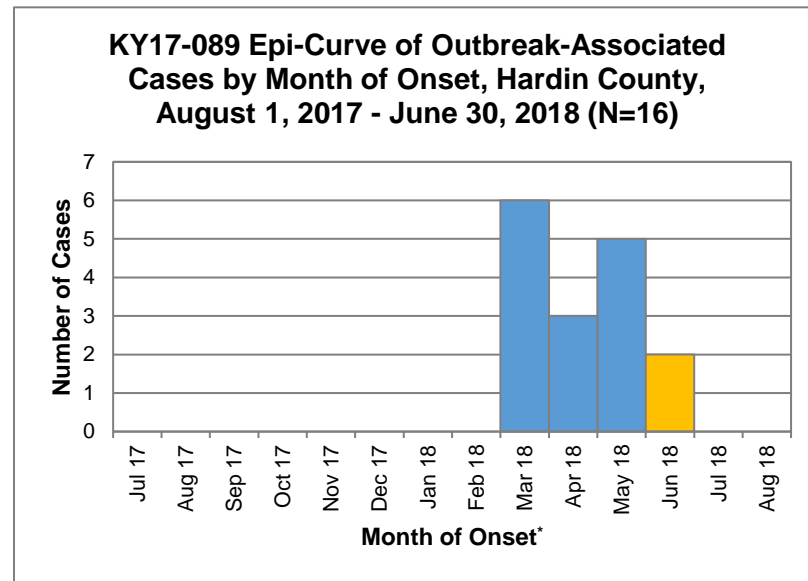
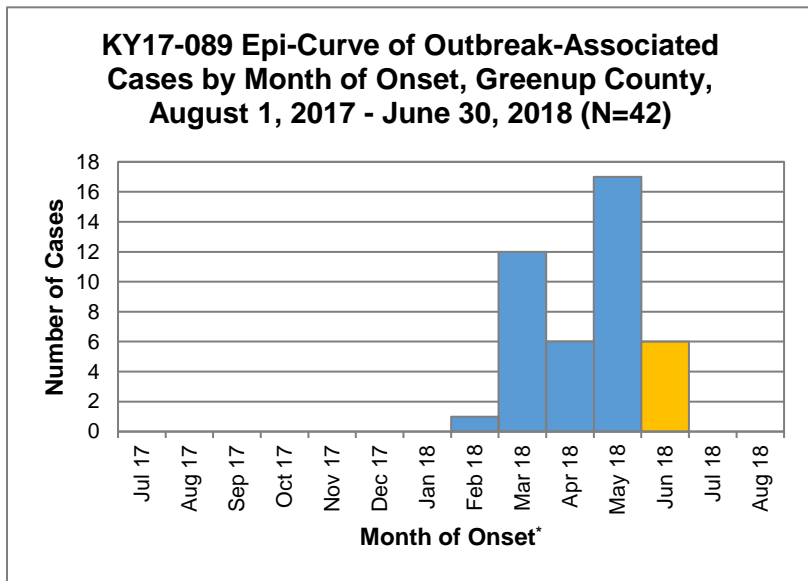
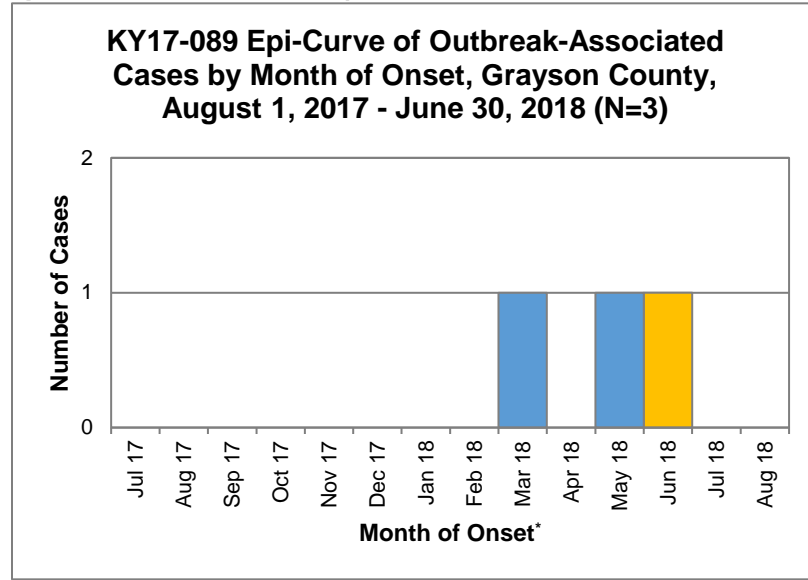
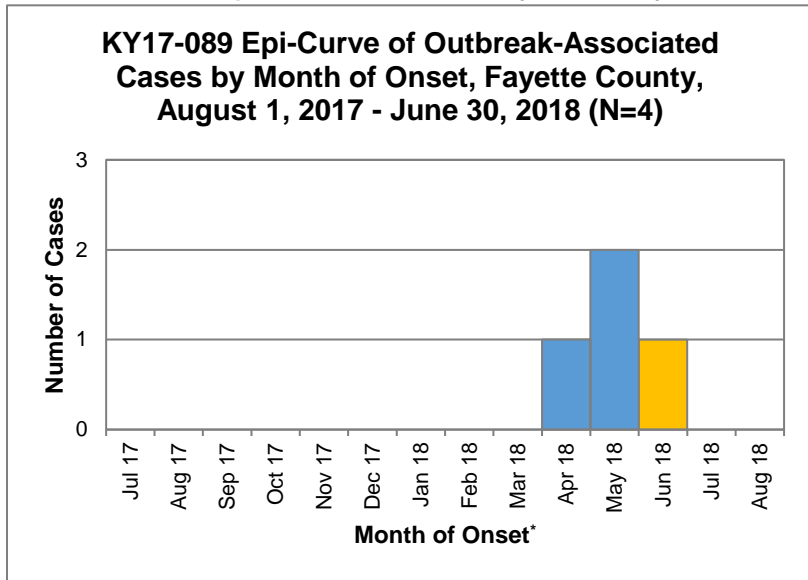


\* Date of onset has been reported for 81.0% (or 838/1034) of cases.

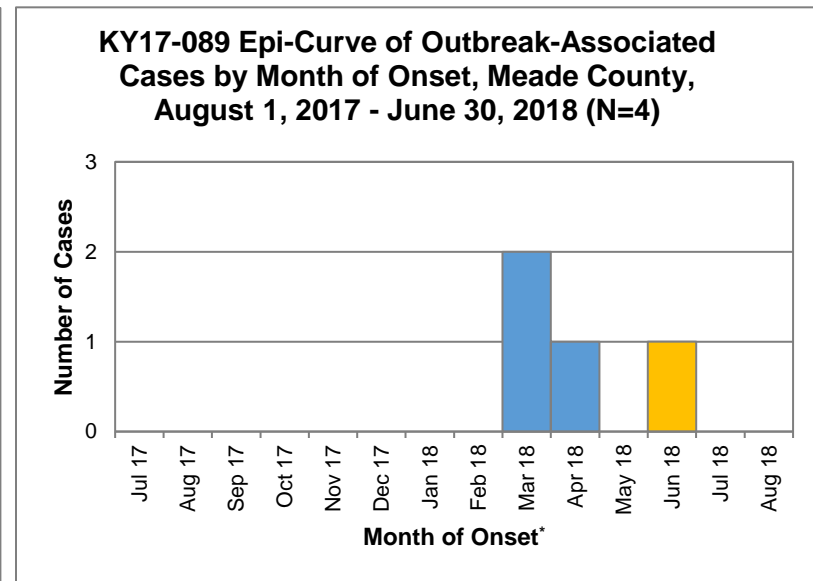
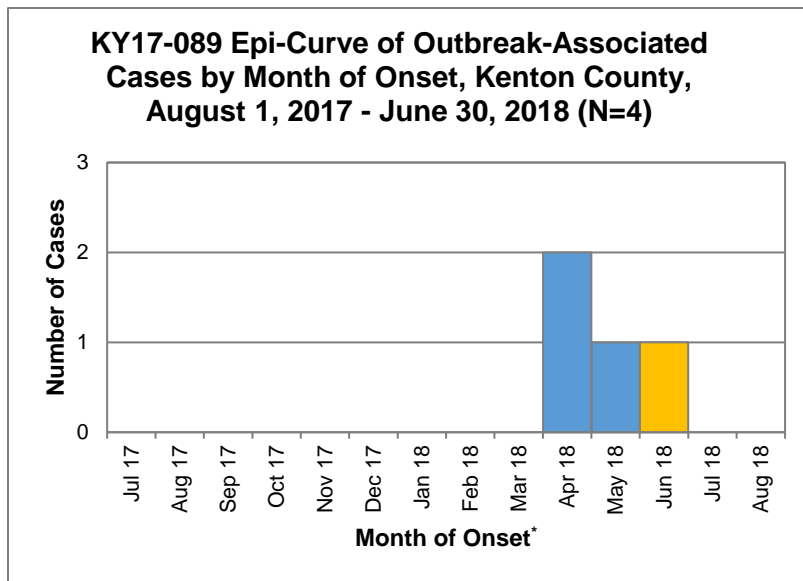
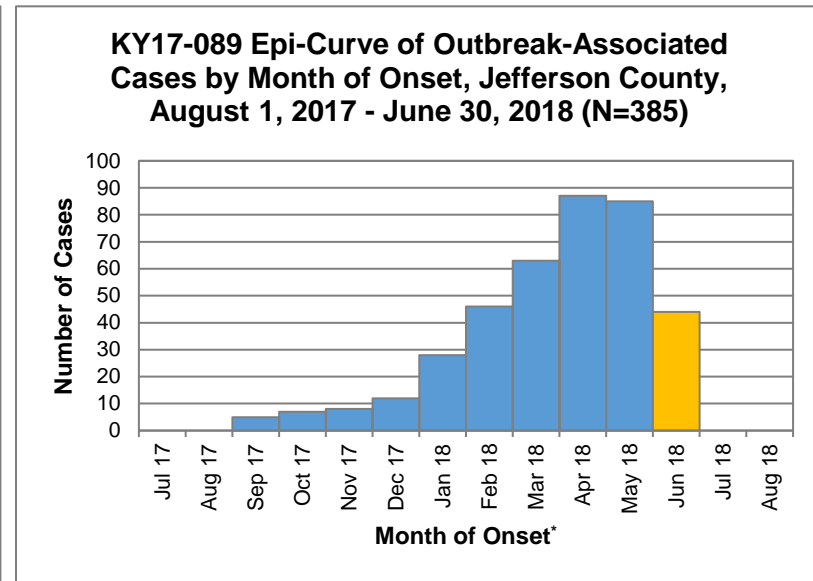
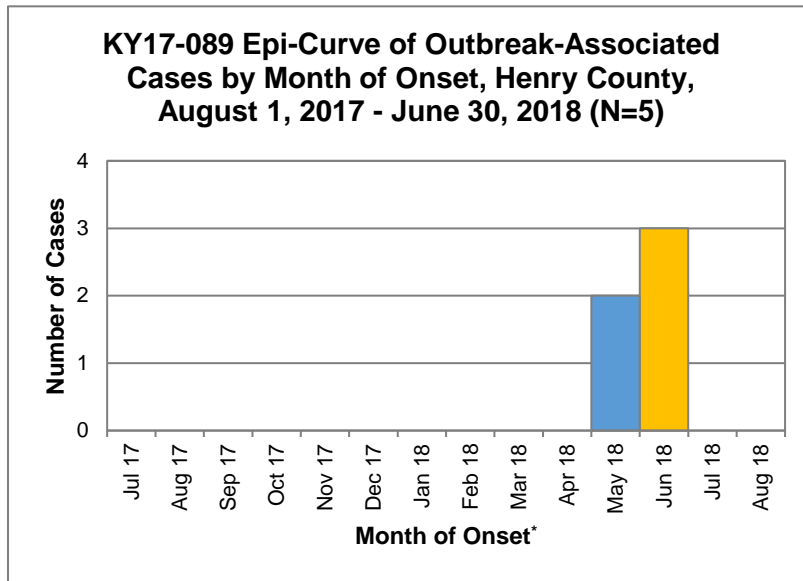
**Figures 6-9: Epidemic-curves (Epi-Curves) of Outbreak-Associated Cases in Counties with at least 5 reported cases, by Month of Onset (Counties include Ballard, Boyd, Bullitt, and Carter Counties)**



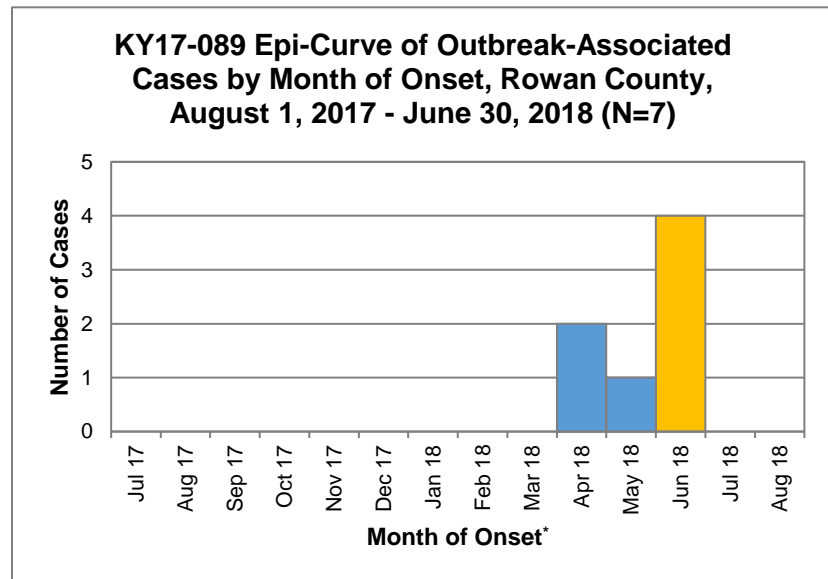
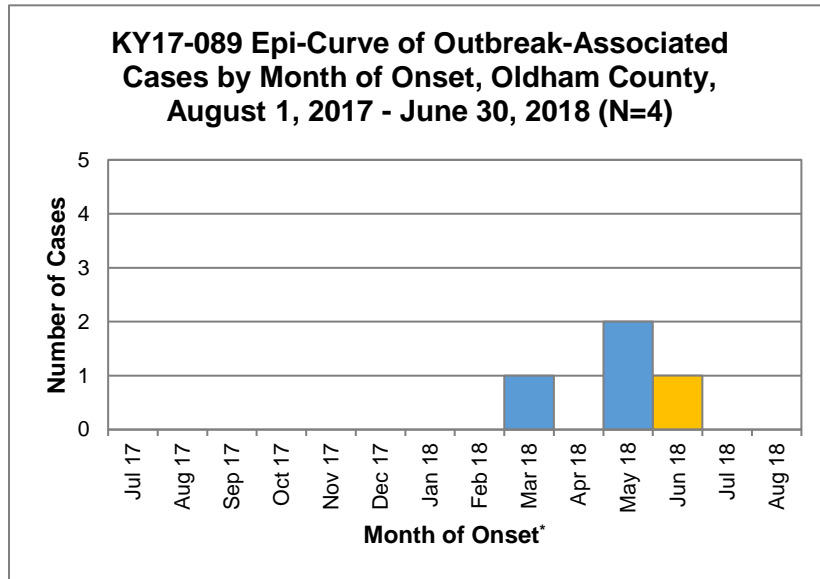
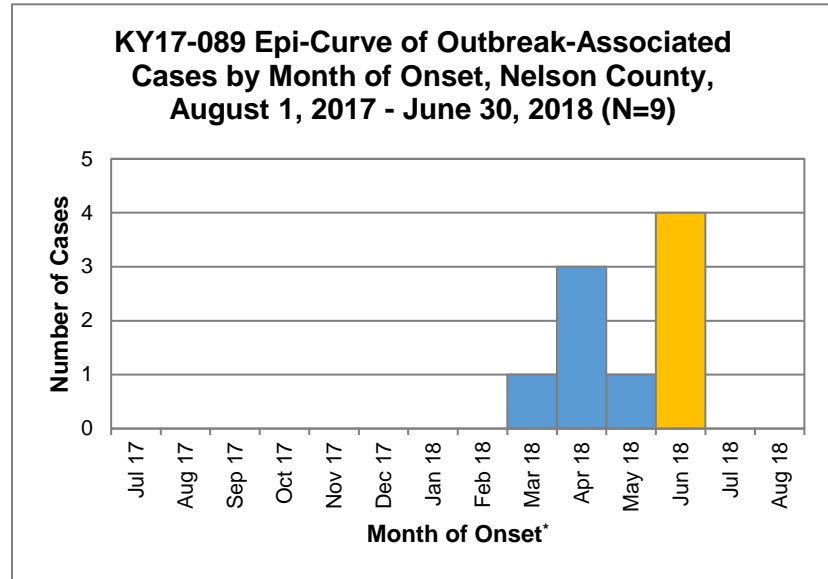
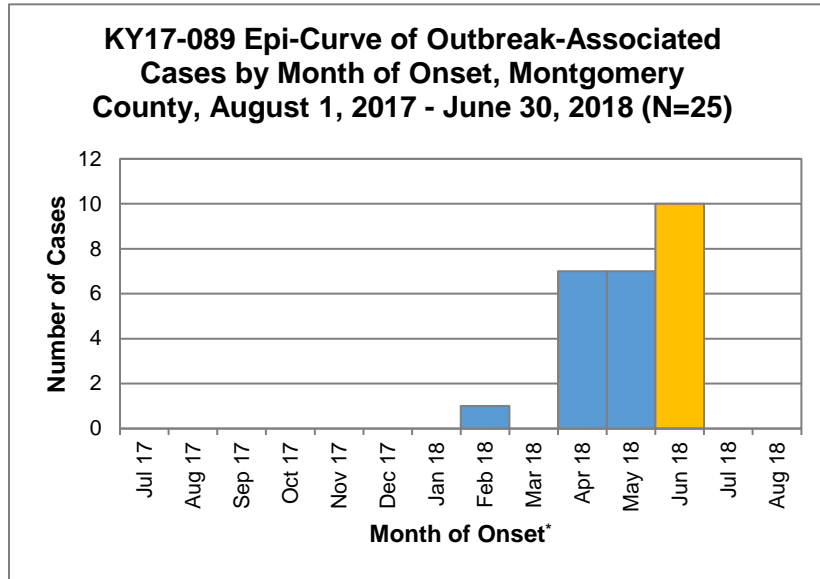
**Figures 10-13: Epidemic-curves (Epi-Curves) of Outbreak-Associated Cases in Counties with at least 5 reported cases, by Month of Onset (Counties include Fayette, Grayson, Greenup, and Hardin Counties)**



Figures 14-17: Epidemic-curves (Epi-Curves) of Outbreak-Associated Cases in Counties with at least 5 reported cases, by Month of Onset (Henry, Jefferson, Kenton, and Meade Counties)



Figures 18-21: Epidemic-curves (Epi-Curves) of Outbreak-Associated Cases in Counties with at least 5 reported cases, by Month of Onset (Montgomery, Nelson, Oldham, and Rowan Counties)



Figures 22-25: Epidemic-curve (Epi-curve) of Outbreak-Associated Cases in Counties with at least 5 reported cases, by Month of Onset (Shelby, Taylor, Warren, and Whitley County)

