



Kentucky Department for Public Health

KY17-089 - Acute Hepatitis A Outbreak Weekly Report

Morbidity and Mortality Weekly Report (MMWR) Week 36, 2019

September 1, 2019 – September 7, 2019

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. Please note that all data is preliminary and subject to change as additional reports are received.

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.

Unless otherwise noted, all data are reported by date of specimen collection.

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

Update for Week 36:		Total Case Counts: 8/1/2017 – 9/7/2019:	
Number of new cases (n=5):	Confirmed[^] - 0 Probable - 1 Suspected - 4	Total number of cases (n=4902):	Confirmed[^] - 693 Probable - 2827 Suspected - 1382
Number of counties with new cases:	5	Total number of counties with cases:	113 (94% of KY counties)
Number of individuals with specimens submitted for genotyping where results are available:	0	Number of individuals with specimens submitted for genotyping where results are available:	737 (15%)
Number of cases with genotype IB among those with genotype testing:	0	Total number of cases with genotype IB among those with genotype testing:	677 (92% of those tested)
Number of Hospitalizations:	3	Total Number of Hospitalizations:	2370 (48%)
Number of deaths Reported[†]:	0	Total number of deaths reported[†]:	61 (1.2%)

* Cases are reported based on date of specimen collection.

[^] Cases are generally confirmed weeks after submission for testing, so will only be reflected in total case counts.

[†] 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.

[#] One of the deaths being reported this week was identified through periodic death record review. Weekly death counts may appear artificially high due to delays in death certification.

Table 2: Cumulative Distribution of Cases by County

KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases, by County, August 1, 2017 – September 7, 2019*^#					
County	Total number of cases reported	Number of confirmed cases	Number of probable cases	Number of suspected cases	Incident Rate per 100,000 population
Adair	3	0	2	1	15.4
Allen	46	6	28	12	219.7
Anderson	25	0	18	7	110.9
Ballard	12	4	5	3	149.3
Barren	16	1	15	0	36.5
Bath	37	1	14	22	298.9
Bell	65	5	36	24	241.7
Boone	64	5	36	23	49.0
Bourbon	13	0	10	3	64.9
Boyd	174	101	45	28	362.7
Boyle	31	0	18	13	103.6
Bracken	6	0	4	2	72.6
Breathitt	30	1	22	7	231.7
Bullitt	64	32	23	9	79.8
Butler	11	0	7	4	85.7
Calloway	1	0	0	1	2.6
Campbell	69	3	56	10	74.6
Carlisle	1	0	1	0	20.6
Carroll	12	2	7	3	112.0
Carter	127	43	62	22	467.9
Casey	14	1	9	4	88.9
Christian	79	14	54	11	112.2
Clark	93	0	57	36	258.0

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,
by County, August 1, 2017 – September 7, 2019*^#**

County	Total number of cases reported	Number of confirmed cases	Number of probable cases	Number of suspected cases	Incident Rate per 100,000 population
Clay	82	0	38	44	402.6
Clinton	13	0	10	3	126.5
Crittenden	2	0	1	1	22.0
Cumberland	2	0	2	0	29.8
Daviess	4	0	2	2	4.0
Edmonson	1	0	1	0	8.2
Elliott	24	4	4	16	319.0
Estill	26	0	21	5	182.1
Fayette	205	4	150	51	63.7
Fleming	4	0	0	4	27.7
Floyd	146	3	80	63	402.5
Franklin	58	1	43	14	114.9
Gallatin	8	0	5	3	91.2
Garrard	20	0	13	7	114.1
Grant	43	3	34	6	172.1
Graves	1	0	0	1	2.7
Grayson	30	2	25	3	113.8
Green	3	0	3	0	27.1
Greenup	62	30	20	12	174.6
Hardin	41	10	10	21	37.9
Harlan	36	5	18	13	134.8
Harrison	28	0	17	11	149.1
Hart	2	0	2	0	10.7
Henry	13	3	8	2	81.2

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,
by County, August 1, 2017 – September 7, 2019*^#**

County	Total number of cases reported	Number of confirmed cases	Number of probable cases	Number of suspected cases	Incident Rate per 100,000 population
Hickman	1	0	0	1	22.1
Hopkins	61	6	32	23	133.9
Jackson	22	1	11	10	163.8
Jefferson	661	311	236	114	85.7
Jessamine	62	0	40	22	116.2
Johnson	81	0	45	36	358.5
Kenton	123	12	91	20	74.4
Knott	38	2	24	12	248.5
Knox	107	2	69	36	342.7
Larue	3	0	1	2	21.1
Laurel	224	3	165	56	372.3
Lawrence	34	3	21	10	216.3
Lee	36	1	33	2	547.9
Leslie	38	0	33	5	367.7
Letcher	21	0	17	4	94.0
Lewis	26	0	15	11	194.9
Lincoln	38	2	24	12	155.4
Livingston	2	0	0	2	21.6
Logan	2	0	2	0	7.4
Madison	147	3	99	45	161.1
Magoffin	54	0	32	22	430.7
Marion	23	1	17	5	118.6
Marshall	3	0	1	2	9.6
Martin	41	0	29	12	358.0

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,
by County, August 1, 2017 – September 7, 2019*^#**

County	Total number of cases reported	Number of confirmed cases	Number of probable cases	Number of suspected cases	Incident Rate per 100,000 population
Mason	26	0	17	9	151.4
McCracken	15	4	6	5	22.9
McCreary	29	0	20	9	166.0
Meade	12	1	1	10	42.6
Menifee	18	0	11	7	278.9
Mercer	41	1	25	15	190.5
Metcalfe	2	0	1	1	19.8
Monroe	2	0	1	1	18.8
Montgomery	94	6	65	23	336.6
Morgan	23	1	18	4	174.4
Muhlenberg	2	0	0	2	6.5
Nelson	19	4	6	9	41.6
Nicholas	2	0	0	2	28.1
Ohio	6	0	3	3	24.8
Oldham	18	4	9	5	27.1
Owen	13	0	11	2	120.8
Owsley	12	0	9	3	270.6
Pendleton	29	2	19	8	199.0
Perry	89	2	64	23	335.2
Pike	82	0	61	21	139.3
Powell	50	0	31	19	404.1
Pulaski	94	0	62	32	145.9
Robertson	1	0	1	0	46.9
Rockcastle	26	0	16	10	155.7

**KY17-089 Distribution Of Outbreak-Associated Acute Hepatitis A Cases,
by County, August 1, 2017 –September 7, 2019*^#**

County	Total number of cases reported	Number of confirmed cases	Number of probable cases	Number of suspected cases	Incident Rate per 100,000 population
Rowan	48	1	31	16	195.8
Russell	3	0	2	1	16.9
Scott	31	0	20	11	56.5
Shelby	26	9	14	3	54.8
Simpson	9	1	7	1	49.7
Spencer	8	3	4	1	43.2
Taylor	50	2	35	13	196.3
Todd	1	1	0	0	8.2
Trigg	4	0	4	0	27.7
Trimble	2	0	1	1	23.4
Union	2	0	1	1	13.6
Warren	44	9	26	9	34.1
Washington	9	0	6	3	74.2
Wayne	20	1	9	10	96.5
Webster	6	2	3	1	46.1
Whitley	199	8	106	85	549.5
Wolfe	26	0	18	8	357.9
Woodford	14	0	10	4	53.1
Total Number of Cases:	4902	693	2827	1382	110.1

* Cases are reported based on date of specimen collection.

^ 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: Hepatitis A Vaccine Doses Administered, Public Health Versus All Other Providers, as Reported to the Kentucky Immunization Registry

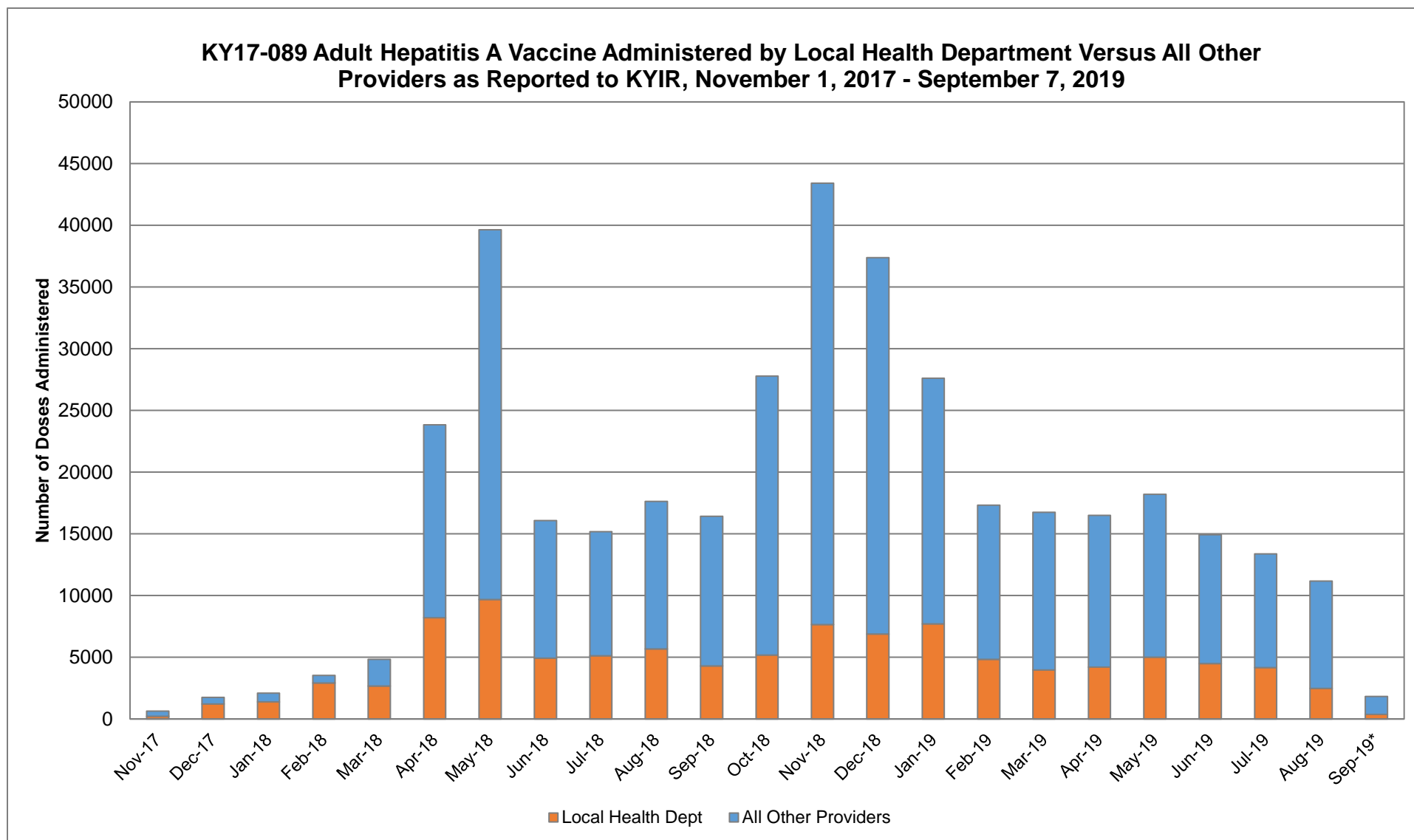
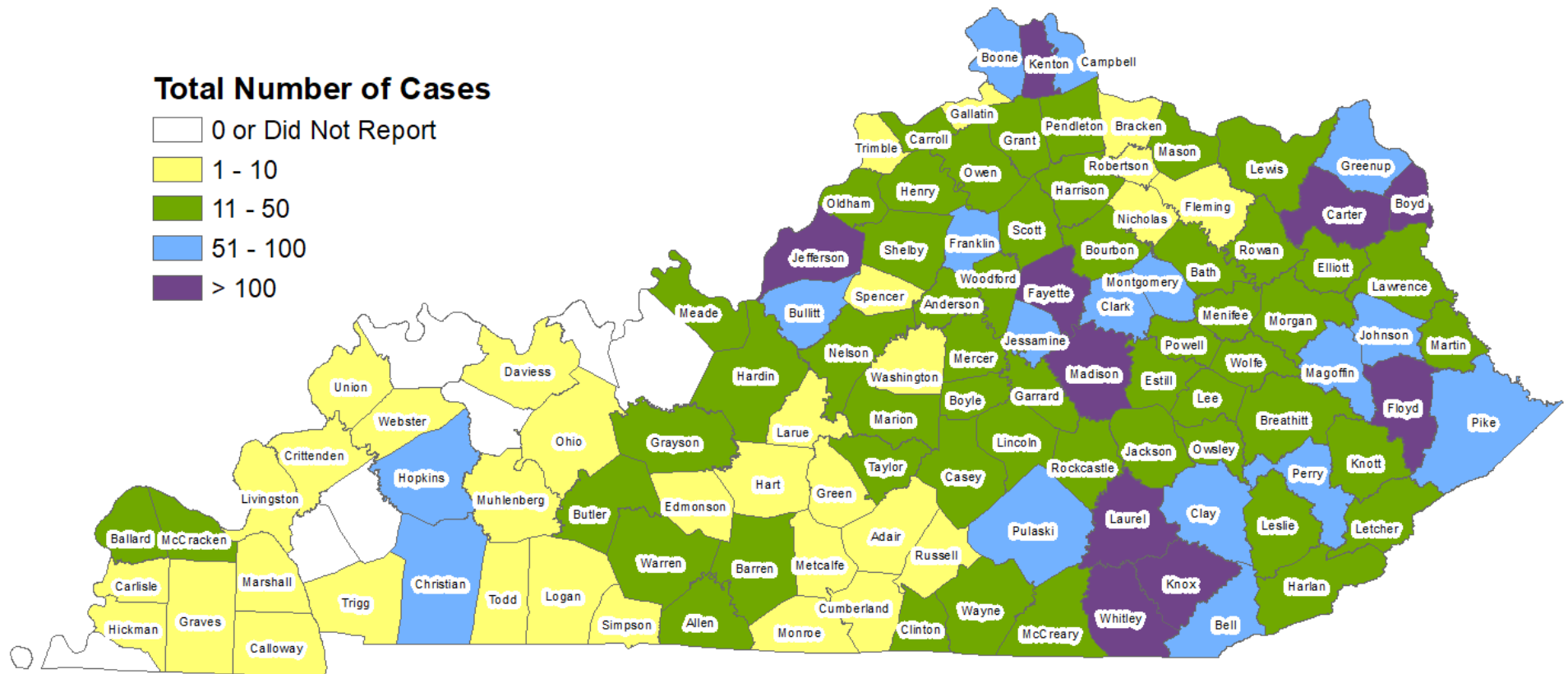


Figure 2: Geographic Distribution of Outbreak-Associated Cases by County

KY17-089 Distribution of Outbreak-Associated Acute Hepatitis A Cases by County, August 1, 2017 - September 7, 2019

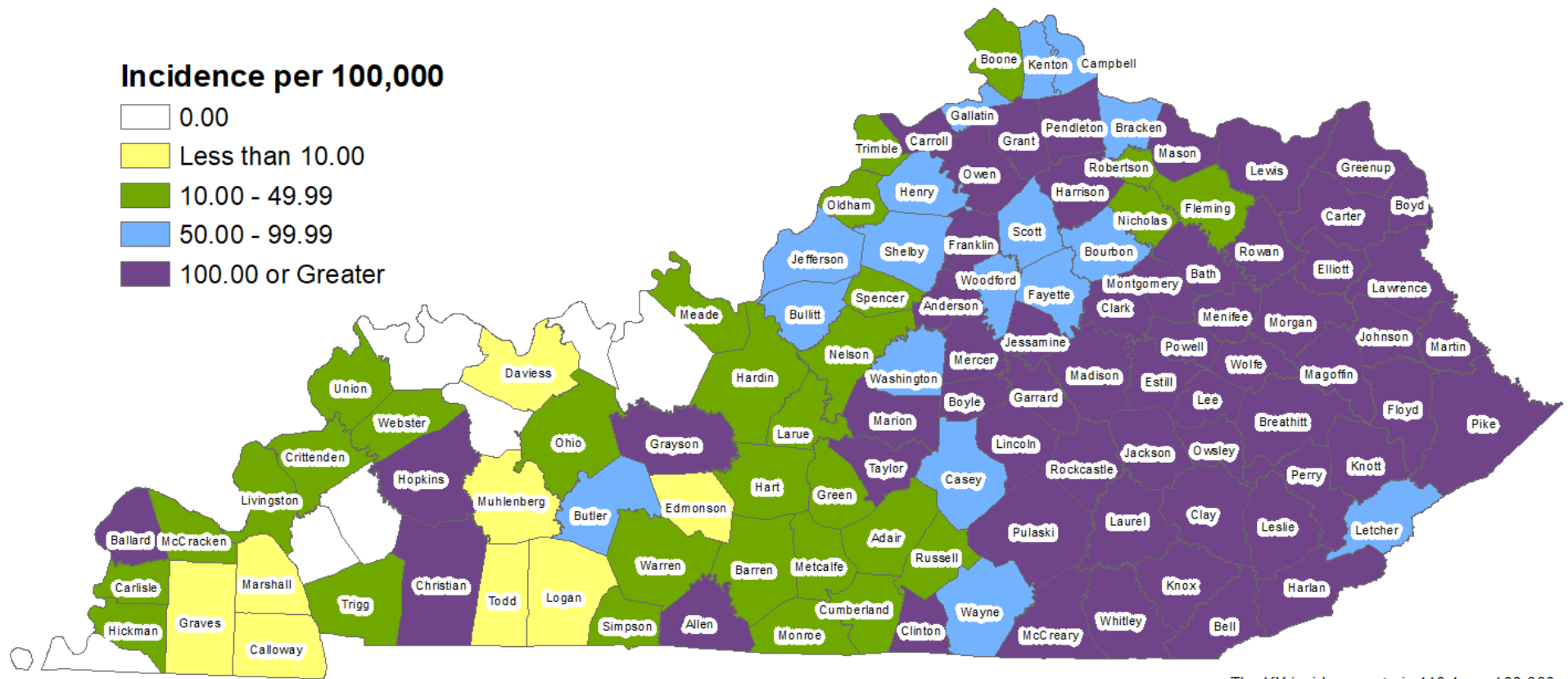


n = 113 counties with outbreak-associated cases

Counties where cases have not previously been identified: None.

Figure 3: Incidence of Outbreak-Associated Cases by County

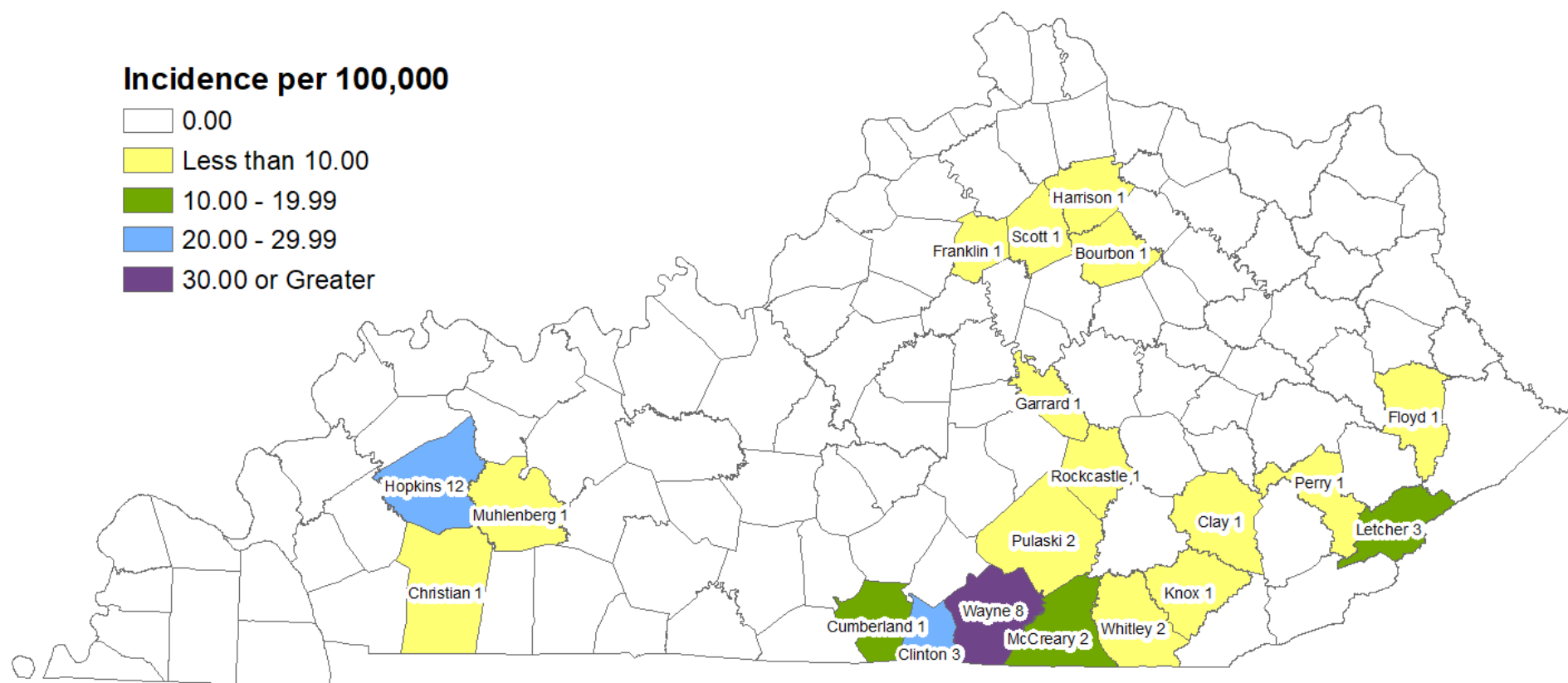
KY17-089 Incidence of Outbreak-Associated Acute Hepatitis A Cases by County, August 1, 2017 - September 7, 2019



The KY incidence rate is 110.1 per 100,000.
Note: Rates calculated from numerators less than 20 may not be reliably used to determine trends.

Figure 4: Incidence and Distribution of Outbreak-Associated Cases in the Last 30 Days, by County

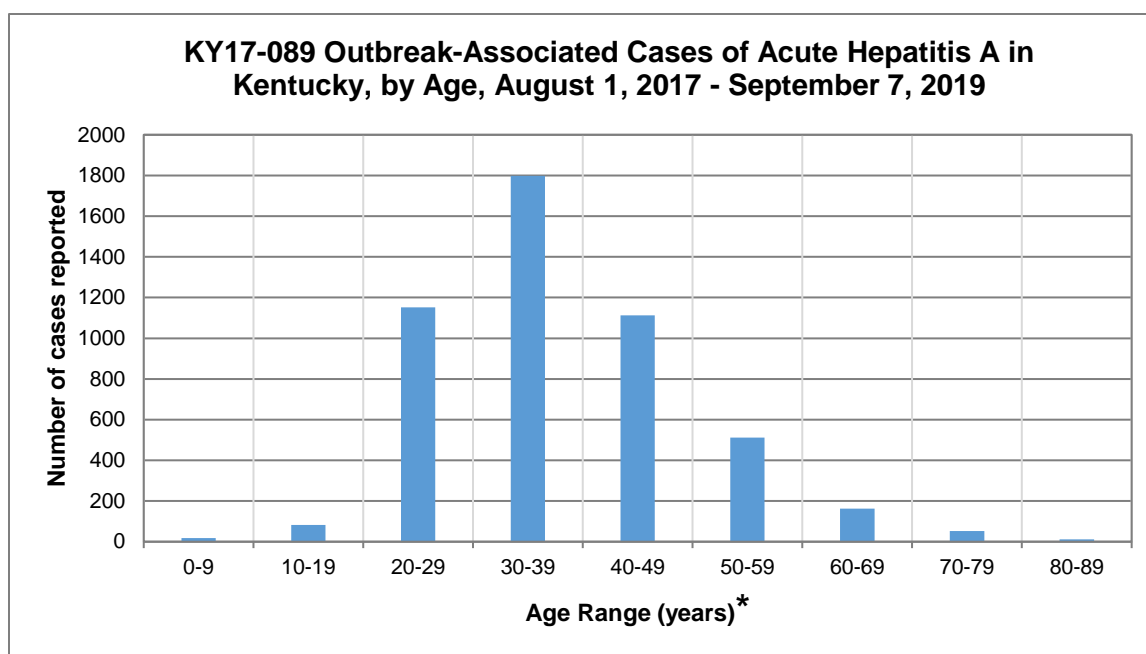
KY17-089 Incidence of Outbreak-Associated Acute Hepatitis A Cases by County*, August 8 - September 7, 2019



The KY incidence rate is 1.0 per 100,000.
Note: Rates calculated from numerators less than 20 may not be reliably used to determine trends.

*Case count for the last 30 days is displayed beside county name. Statewide outbreak-associated case count over the last 30 days is 45.

Figure 5: Outbreak-Associated Cases by Age



*The mean age of cases is 37.6 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 – September 7, 2019 ^{#^}	
Risk Factor	Number of Cases Reporting Risk Factor (n=3948)*
Homelessness + No/Unk Illicit Drug Use	57 (1.4%)
Illicit Drug Use + No/Unk Homelessness	2836 (72%)
Homelessness + Illicit drug use	303 (7.7%)
No Outbreak-Related Risk Factors	752 (19%)

* Risk factor information is unavailable for 954 (19.5%) of all outbreak-associated cases.

[#] The percentages in the table may add up to greater than 100 percent due to rounding.

[^] 37 MSM cases have been reported. Of those, 12 have reported no other risk factors. MSM is not considered an outbreak-related risk factor.

Figure 6: Epidemic-curve (Epi-Curve) of Outbreak-Associated Cases, by Week of Specimen Collection

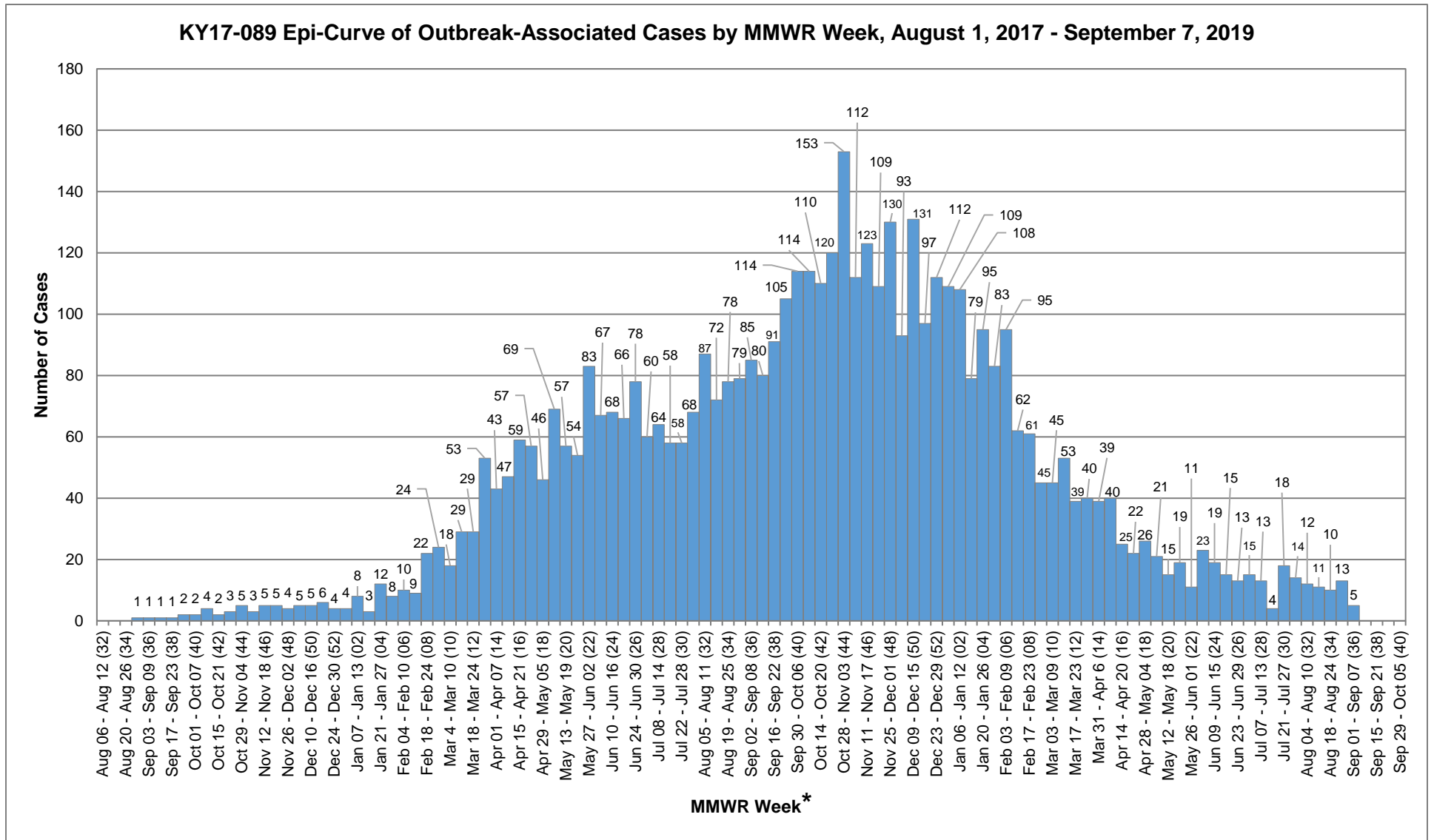
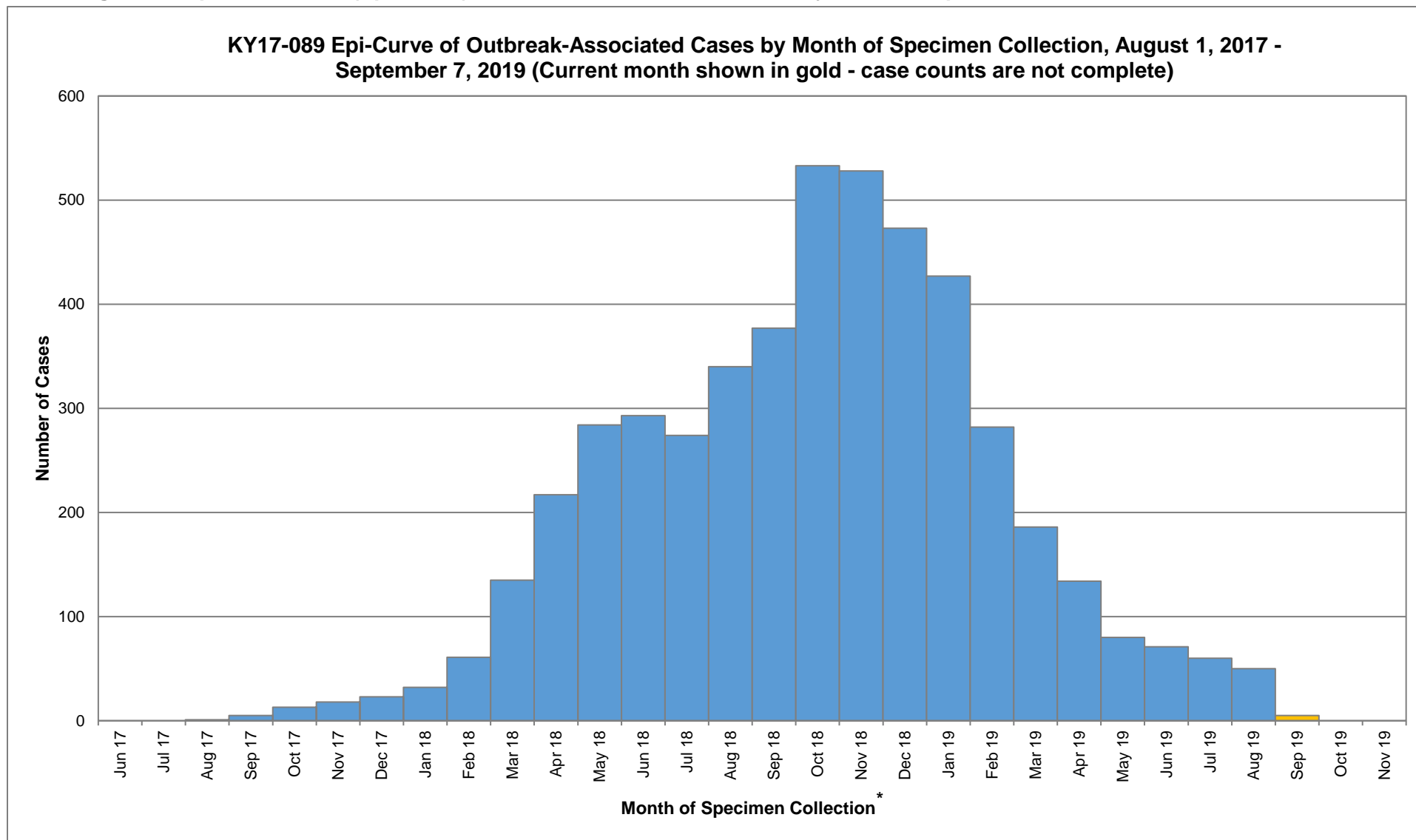


Figure 7*: Epidemic-curve (Epi-Curve) of Outbreak-Associated Cases, by Month of Specimen Collection



*Note: As of the report ending July 6, 2019, this figure will be based on date of specimen collection rather than date of onset to be consistent with other figures.

Figure 8: Case Count Comparison of Acute Hepatitis A cases, Jefferson County versus Non-Jefferson Counties

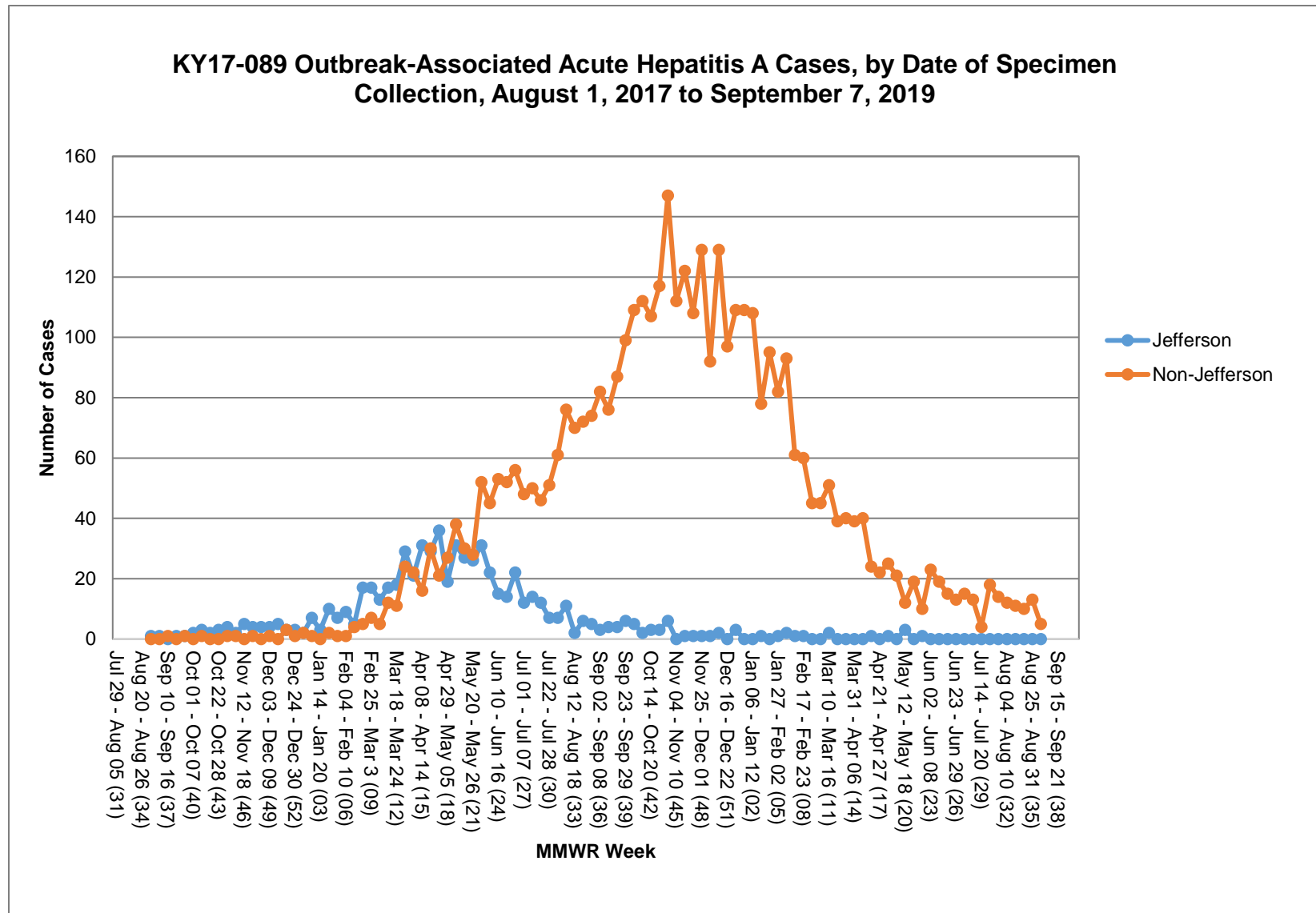


Figure 9-10: Epidemic-Curves (Epi-Curves) of Outbreak-Associated Cases in Counties with at least Five Reported Cases in the Last 30 days, by Month of Specimen Collection (Hopkins and Wayne Counties)

