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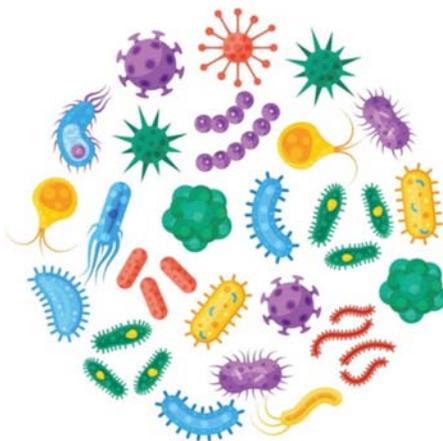
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Bureau of Epidemiology & Public Health Informatics

Continued Investigation of Carbapenem-resistant *Acinetobacter Baumannii* Infections

by Justin Blanding, MPH



On November 30, 2018, the Kansas Department of Health and Environment (KDHE) sent out a KS-HAN to healthcare providers and local health departments regarding carbapenem-resistant *Acinetobacter baumannii* (CRAB) infections seen in Kansas facilities. KDHE's Healthcare-Associated Infections and Antimicrobial Resistance (HAI/AR) Program continues to investigate CRAB in Kansas. Among the number of CRAB isolates submitted to CDC's Antimicrobial Resistant Laboratory Network (ARLN) approximately 77% harbor either the *bla*_{OXA-23} or *bla*_{OXA-24} carbapenemase enzyme. These enzymes are able to confer antibiotic resistance to the bacterium and are plasmid-mediated (meaning

they can be shared with other bacteria). The laboratory methods in detecting variants other than *bla*_{OXA-48} is "off-label use only." Meaning these results are for public health significance and are not reported to the facility.

Traditionally, the OXA-23 variant has been associated as an outbreak strain, and less information is known regarding the OXA-24 variant. Our current investigation suggests more of a regional spread instead of a single/cluster of healthcare facilities. Most isolates are from patients with chronic wounds or other health conditions that require prolonged healthcare or use of invasive devices. Whole genome sequencing is being performed to determine the relatedness and to get a better understanding of these variants in Kansas. Additionally, individuals can be colonized with CRAB. Working with CDC's ARLN, we have implemented a surveillance screening program at a healthcare facility to screen incoming patients for CRAB colonization.

Please ensure that healthcare providers in your community are aware of the requirement to report carbapenem-resistant infections and colonization to KHDE along with the submission of isolates to KHEL. For additional information on CRAB and prevention measures refer to the KS-HAN or contact Justin Blanding, 785-296-1242 or justin.blanding@ks.gov, or the epidemiology hotline, 877-427-7317.



2017 Kansas Carbon Monoxide Poisoning-related ED Visits

by Henri Menager, MPH

Carbon Monoxide (CO) is an odorless, tasteless and colorless gas. It is produced as a result of incomplete combustion of carbon-based materials including coal, wood, charcoal, oil, natural gas, and propane gas. It can build up indoors and poison people and animals without warning. Each year, hundreds of people in the U.S. die due to accidental fire or non-fire related CO poisoning [1]. Poor maintenance of home heating equipment, use of gas powered tools in poorly ventilated areas, and exposure to fumes from boat engines are often the cause of accidental non-fire CO poisoning.

From January 1, 2017 to December 31, 2017, there were 193 emergency department (ED) visits related to accidental CO poisoning in Kansas residents. Carbon Monoxide-related ED visits were defined as visits in which the following International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) and their sub variations were listed among the primary and subsequent diagnostic codes: T58.04, T58.11, T58.14, T58.2X1, T58.2X4, T58.8X1, T58.8X4, T58.91, T58.94. Intentional CO poisoning-related visits were excluded from this analysis and were defined as visits in which the following ICD-10-CM and their sub variations were listed among the primary and subsequent diagnostic codes: T58.02, T58.03, T58.12, T58.13, T58.2X2, T58.2X3, T58.8X2, T58.8X3, T58.92, T58.93. The following provides a brief description of the characteristics of Kansas residents who were admitted to an ED of a Kansas hospital during the 2017 calendar year. This report is prepared by the Kansas Environmental Public Health Tracking (EPHT) program at the Kansas Department of Health and Environment (KDHE). The data was provided by the Kansas Hospital Association.

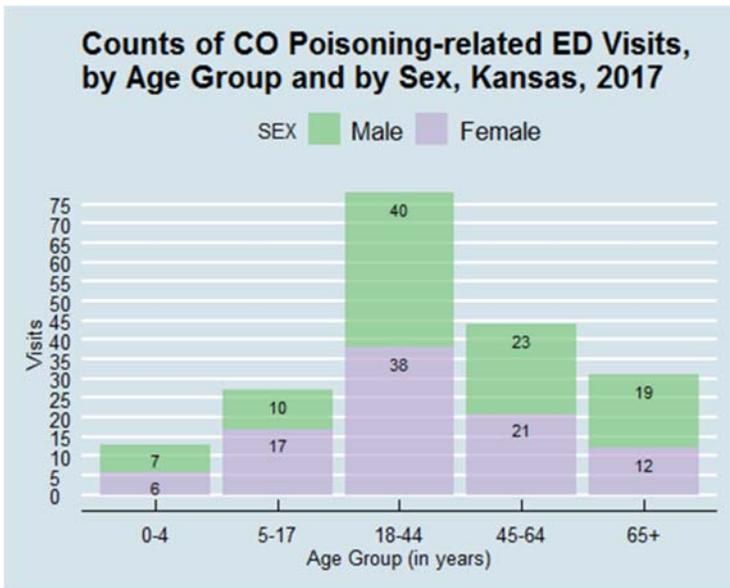


Figure 1: Age

In 2017, the largest group of patients who were admitted to a Kansas emergency department were residents aged 18 to 44 years. The smallest group were those who were less than 5 years old. Except for 2 age groups 5-17 and 65+, the differences in the number of visits between men and women were very small.

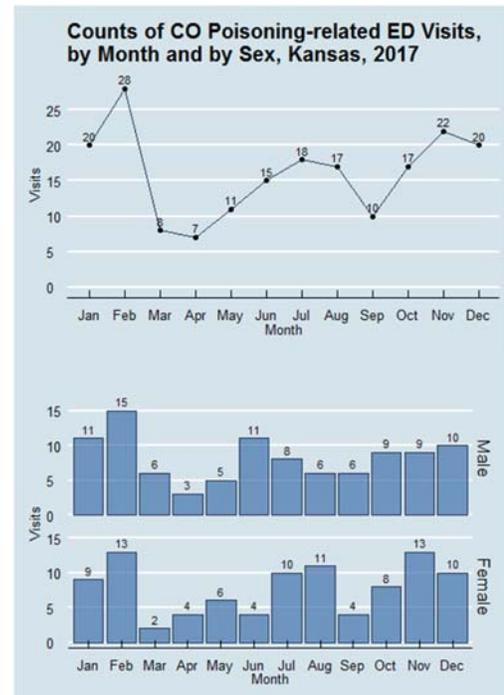


Figure 2: Time of Year

Based on these data, it seems that the number of visits due to CO poisoning vary depending on the time of the year. The highest number of visits was in February (28) and the lowest number was in April (7). Men and women were equally affected for every month in 2017.

2017 Kansas Carbon Monoxide Poisoning-related ED Visits Cont.

Race and Ethnicity

Most of the visits for CO poisoning in 2017 were by residents who are white non-Hispanic (121). Out of the 19 black/African American patients, none of them were Hispanic. Most Hispanics claimed to be of a race other than White or Black. "Other" race includes those patients who claim more than one race (Figure 3).

Population Density

In 2017, the bulk of CO poisoning ED visits (170) were from urban, semi-urban, or densely-settled rural counties. Fewer patients (23) from rural or frontier counties visited ED for CO poisoning. The distribution of men and women was roughly the same among each category of county population density (Figure 4).

Figure 3

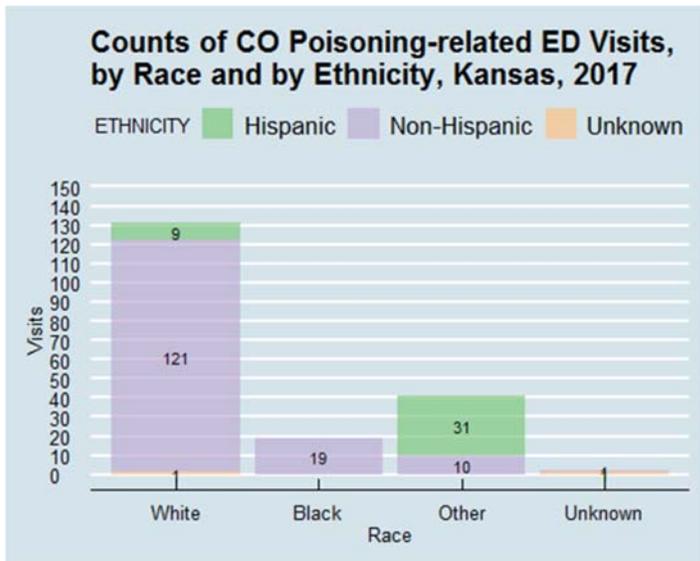
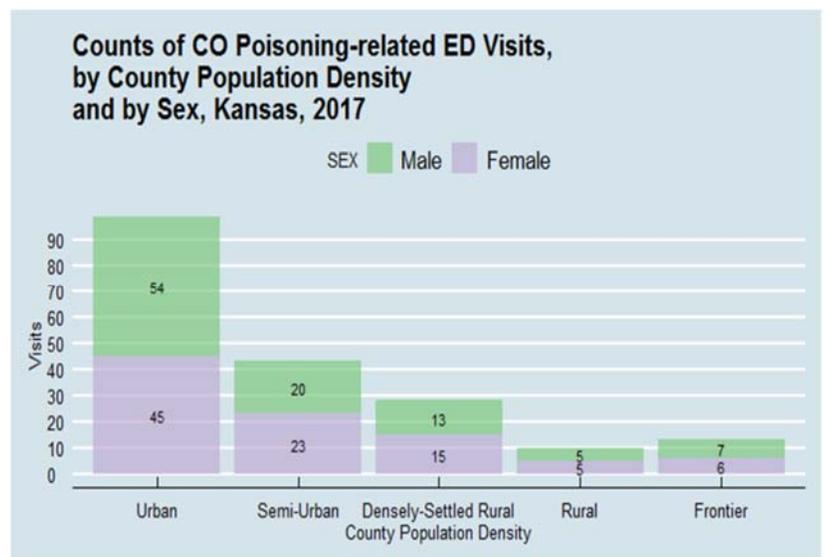


Figure 4



Conclusion

The number of ED visits in Kansas due to accidental carbon monoxide poisoning is relatively small (193 visits in 2017). The condition is often lethal but can be easily prevented. Having a functioning CO detector installed near sleeping quarters and living areas in homes can go a long way towards prevention. It is difficult for the public to be aware of the status of CO exposure prevention measures in public buildings, rental apartments, hotels, and other commercial buildings. For that reason, the Kansas Department of Health and Environment (KDHE) has taken steps to make CO poisoning a reportable condition in the state beginning May 11, 2018 and to focus epidemiological surveillance activities on exposures occurring in the types of buildings listed above. This report serves as baseline for future surveillance efforts. More information on CO poisoning, other environmental exposures, and health effects is available on the Kansas Environmental Public Health Tracking Program portal at: <https://keap.kdhe.state.ks.us/Ephmt/>

References

1. QuickStats: Number of Deaths Resulting from Unintentional Carbon Monoxide Poisoning, by Month and Year — National Vital Statistics System, United States, 2010–2015." MMWR 66(8): 234. Published: 3-March-2017. DOI: 10.15585/mmwr.mm6608a9



UPDATE EPITRAX DATA QUALITY INDICATORS

by Sheri Tubach, MPH MS

The Bureau of Epidemiology and Public Health Informatics has implemented a set of monthly quality indicators and performance measures to encourage data quality improvement in EpiTrax and timeliness of investigations. I am now calculating the performance measures of interview attempt and interview completion using either the report date to the LHD or the date the event was created in EpiTrax. The disease specific targets for interview initiation and interview completion can be found below. I hope that these performance measures will be more helpful in prioritizing case investigations.

November 2018		State's Total Number of Cases* = 206
EpiTrax Indicators		
EpiTrax Field	Number of Cases with Field Completed	Percent Completed
Address City	205	100
Address County	206	100
Address Zip	202	98
Date of Birth	203	99
Died	188	91
Ethnicity†	176	85
Hospitalized	189	92
Occupation	135	66
Onset Date	159	77
Pregnancy††	81	82
Race †	180	87
Sex †	204	99
Persons Interviewed	139	67
Persons Lost to Follow-Up	15	7
Persons Refused Interview	1	0
Persons Not Interviewed	51	25
	Number of Cases	Percent of Cases
Interview was attempted within the target for each disease ^{^52}	89	49
Case investigations were completed within the target for each disease [^]	79	44

*Calculations do not include Hepatitis B - chronic, Hepatitis C – Chronic or acute, or Animal Rabies

** Out-of-state, discarded, deleted or those deemed to be not a case are not included in this calculation.

† Unknown considered incomplete.

†† Pregnancy completeness calculated on females only

[^] See the table below for interview attempt and completed case interview targets



Disease Targets

Diseases	Disease Control (Days)*	Completed Case Investigation (Days)**
Anthrax; Botulism; Brucellosis; Cholera; Diphtheria; Hantavirus Pulmonary Syndrome; Hepatitis A; Influenza deaths in children <18 years of age; Measles; Meningitis, bacterial; Meningococemia; Mumps; Plague; Poliomyelitis; Q Fever; Rabies, human; Rubella; Severe acute respiratory syndrome (SARS); Smallpox; Tetanus; Tularemia; Viral hemorrhagic fever; Yellow fever	1	3
Varicella	1	5
Pertussis	1	14
Campylobacter infections; Cryptosporidiosis; Cyclospora infection; Giardiasis; Hemolytic uremic syndrome, post diarrheal; Hepatitis B, acute; Legionellosis; Listeriosis; Salmonellosis, including typhoid fever; Shigellosis; Shiga-toxin Escherichia coli (STEC); Trichinosis; Vibriosis (not cholera)	3	5
Arboviral disease (including West Nile virus, Chikungunya, and Dengue); Haemophilus influenzae, invasive disease; Streptococcus pneumoniae, invasive	3	7
Ehrlichiosis / Anaplasmosis; Lyme disease; Malaria; Spotted Fever Rickettsiosis	3	14
Hepatitis B, chronic; Hepatitis C, chronic; Hepatitis C, acute; Leprosy (Hansen disease); Psittacosis; Streptococcal invasive, drug-resistant disease from Group A Streptococcus; Toxic shock syndrome, streptococcal and staphylococcal; Transmissible spongiform encephalopathy (TSE) or prion disease	N/A	N/A

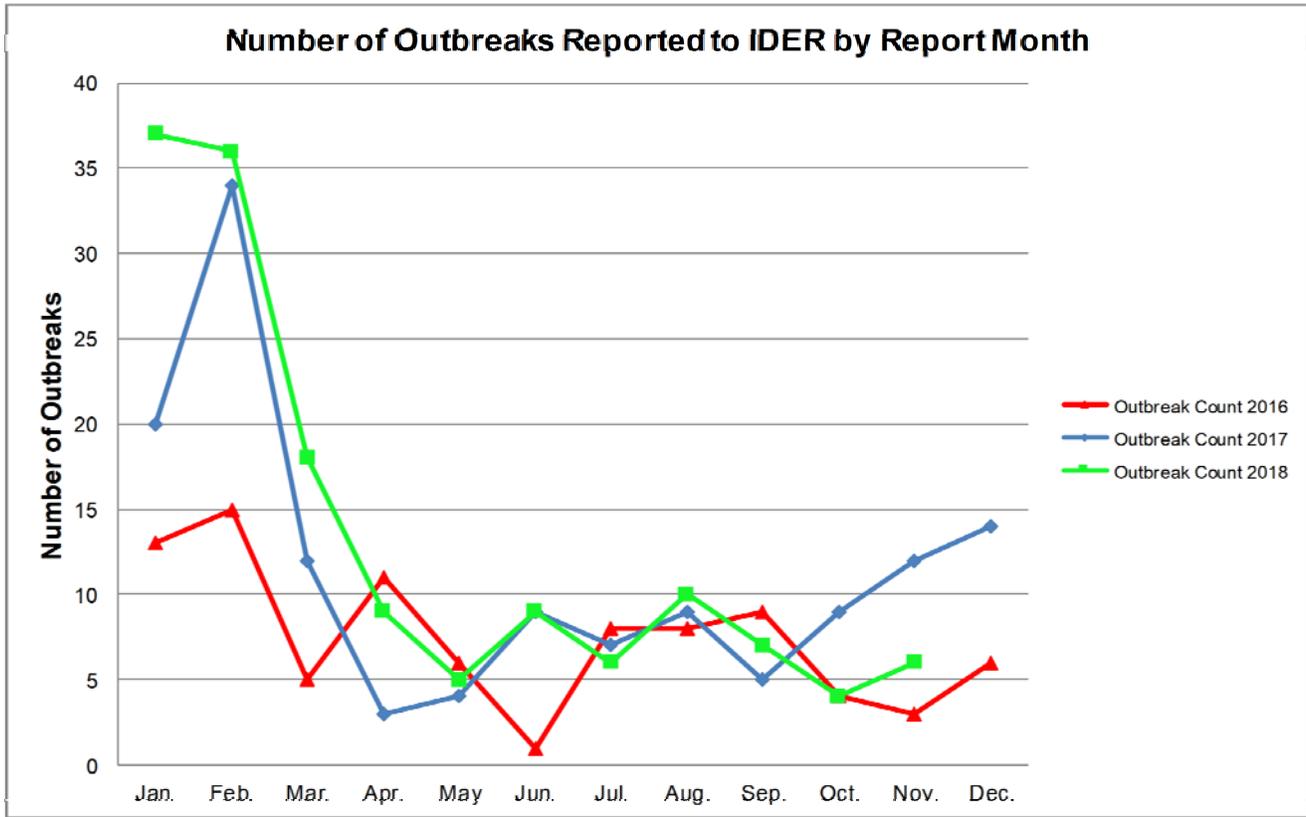
Monthly Disease Counts

Please refer to the Cumulative Case Reports of Diseases ([http://www.kdheks.gov/epi case reports by county.htm](http://www.kdheks.gov/epi%20case%20reports%20by%20county.htm)) for current case count information.

***Disease Control:** Calculated by using EpiTrax Fields: (Date LHD Investigation Started) OR (Call Attempt 1 date for Salmonellosis and STEC) - (Date Reported to Public Health) OR (Date Reported to KDHE)

****Completed Case Investigation:** Calculated by using EpiTrax fields: (Date LHD Investigation Completed) - (Date Reported to Public Health) OR (Date Reported to KDHE)

Outbreaks Report



Date Reported	Facility Type	Transmission/Exposure	Disease/Condition	County
11/2/2018	School or college	Person-to-person	Pertussis	Sedgwick
11/8/2018	Prison or jail	Water	Legionellosis	Crawford
11/9/2018	Office or indoor workspace	Food	Unknown Etiology	Barton
11/13/2018	School or college	Person-to-person	Pertussis	Sedgwick
11/21/2018	School or college	Person-to-person	Shigellosis	Cherokee
11/21/2018	Unknown	Person-to-person	Carbapenem-resistant, other	Kansas



Epi Spotlight - Lindsey Martin Webb

Lindsey Webb is an advanced epidemiologist with the Infectious Disease Epidemiology and Response section at the Kansas Department of Health and Environment (KDHE). She is the foodborne and enteric disease epidemiologist and has been with KDHE since January 2013. Lindsey earned a Master of Public Health degree from Georgia State University in 2012.

Lindsey grew up in Atlanta, Georgia, and lived in South Carolina, Pennsylvania, and Texas before moving to Kansas. She currently lives in Lawrence with her husband Brandon, 12-year-old son Everett, and dogs Luna and Blue. She enjoys skiing, photography, singing with the Lawrence Civic Choir, and reading. Lindsey and her family also love road trips and are working towards their goal of visiting every National Park.

