

Inside

Kindergarten Vaccination Coverage Survey Report for School Year 2018-2019 Released 1

Unintentional Drownings in Kansas..... 4

Trends in unintended drug overdose deaths for Kansas residents, 2002-2021..... 7

Kansas Environmental Health Program Highlighted in Environmental Systems Research Institute (Esri) Case Study for Environmental Health Technological Advancements 9

Announcements..... 10

Kindergarten Vaccination Coverage Survey Report for School Year 2018-2019 Released

*by Andrea May, MPH, Jaime Gabel, MPH
Bureau of Epidemiology and Public Health Informatics*

The Kindergarten Vaccination Coverage Survey Report has been released for the 2018-2019 School Year. Upon kindergarten entry, K.S.A 72-6262 requires documentation of vaccinations required for school entry [1]. Kansas follows Advisory Committee on Immunization Practices (ACIP) recommendations for vaccines required in K.A.R. 28-1-20. [2] This report evaluated both required and recommended vaccines for up-to-date status via series completion based on ACIP recommendations and guidelines (Table 1). In addition to individual vaccine series completion, 5:4:2:2:3[‡] series was evaluated to provide a composite metric for completion of all required vaccines for school entry. The report also assesses vaccine exemption trends. In Kansas, there are two legal alternatives to required vaccines, medical and religious exemptions. [3] Medical exemptions must be renewed annually by a licensed physician stating that the vaccination(s) would seriously endanger the health of the child. Religious exemptions must be signed by a parent or guardian stating the child is an adherent of a religious denomination whose teachings oppose vaccination upon school entry. [4]

Key Findings

Between the 2017-2018 and 2018-2019 academic years, there was no significant changes in vaccine coverage for any of the required or recommended vaccines (Figure 1).

- On the 1st day of school, 86.1% of Kansas kindergarten students were up-to-date for all required vaccines.
- Coverage for Hepatitis B vaccine was highest at 97.5% of all kindergarteners vaccinated.
- Coverage was lowest for Varicella vaccine with 88.8% of kindergarteners vaccinated.
- Nine counties had over 95% coverage for completion of all required vaccines on the first day of school.

‡ Composite metric of up-to-date status for all required vaccines within an individual

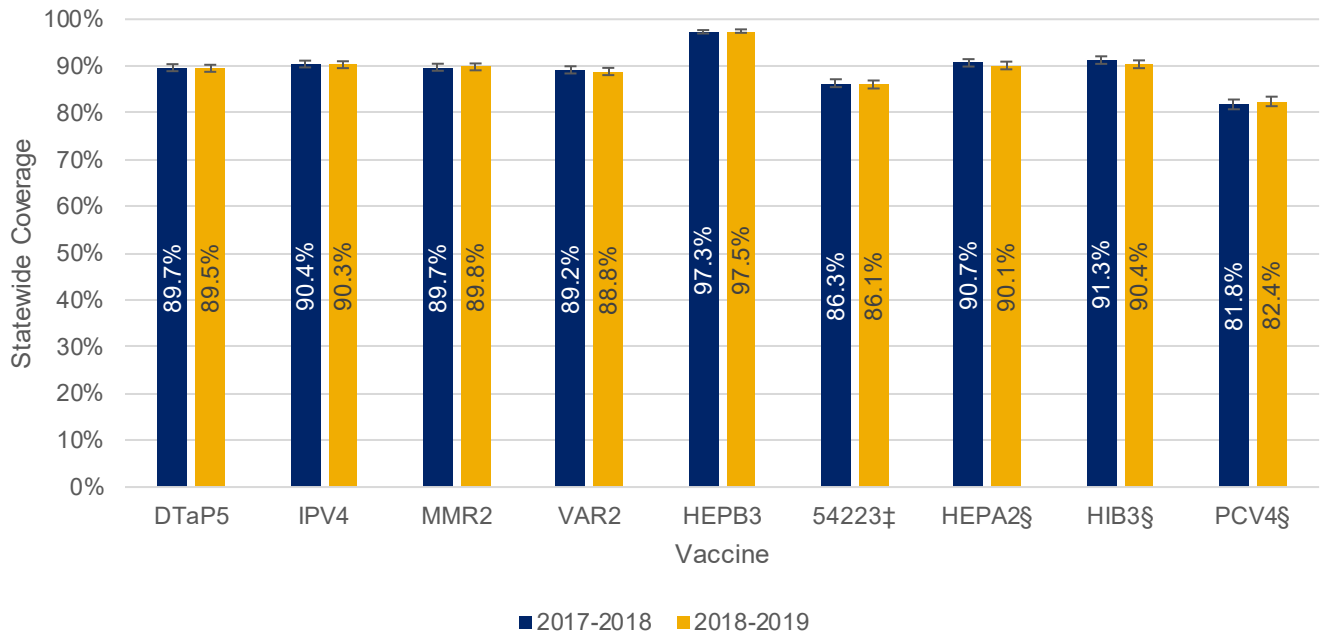
Table 1. ACIP Recommended Vaccinations from Birth to 6 Years

Vaccine	Diseases Prevented	Number of Doses	Reference in Report	Required for School
DTaP	Diphtheria, Tetanus, Pertussis	5 doses or 4 doses considered appropriate if 4 th given on or after 4 th birthday	DTaP5	Yes
IPV	Polio	4 doses or 3 doses considered appropriate if 3 rd given on or after 4 th birthday	IPV4	Yes
MMR	Measles, Mumps, Rubella	2 doses	MMR2	Yes
VAR	Varicella	2 doses or history of disease	VAR2	Yes
HepB	Hepatitis B	3 doses	HepB3	Yes
HepA	Hepatitis A	2 doses	HepA2 ^{§*}	No
Hib	<i>Haemophilus influenzae</i> type B	3 doses	Hib3 [§]	No
PCV	<i>Streptococcus pneumoniae</i>	4 doses	PCV4 [§]	No

§ Data collection for recommended (not required) vaccines may be incomplete

*HepA2 became a required vaccine in the 2019-2020 academic year

Figure 1. Statewide Vaccination Coverage of Kindergarten Students at School Entry by Vaccine – Kansas, 2017-2018 to 2018-2019 Academic Years

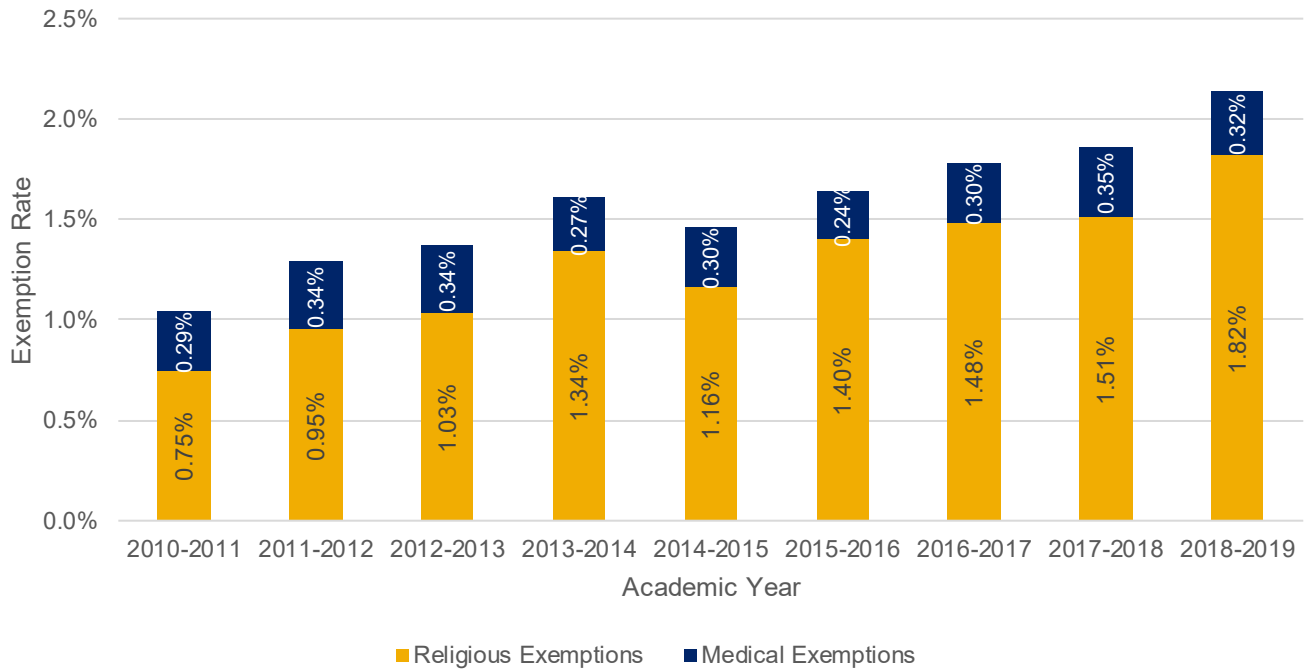


Exemption rates consistently increased each academic year since the 2010-2011 school year (Figure 2). The 2018-2019 academic year marked the first year that the overall exemption rate exceeded 2%.

Exemptions rates in Figure 2 are a composite of both medical and religious exemptions. A table of county-level exemption rates by exemption type is included in the full report.

- The religious exemption rate increased each year with the largest increase between the 2017-2018 and 2018-2019 academic years. Medical exemption rates remained consistent.
- There were 10 counties (9.5%) that had exemption rates above 5%; Wallace, Anderson, and Morton counties had the highest exemption rates.
- There were 26 counties (24.8%) that had no exemptions reported.

Figure 2. Exemption Rates Among Kindergarten Students, by Exemption Type and Year – Kansas, 2010-2018



Increased vaccine coverage helps prevent these vaccine preventable diseases and helps keep children in schools during outbreaks. When schools have coverage below 95% for required school entry vaccines, they are at increased risk for outbreaks of vaccine preventable diseases, which have the potential to cause major disruptions to the school year. To view the full report, visit:

<https://www.kdhe.ks.gov/ArchiveCenter/ViewFile/Item/2449>

References

[1] http://www.kslegislature.org/li_2020/b2019_20/statute/072_000_0000_chapter/072_062_0000_article/072_062_0062_section/072_062_0062_k/
 [2] <https://www.kdhe.ks.gov/DocumentCenter/View/21197/Kansas-Immunization-Regulations-for-School--Child-Care-PDF?bidId=>
 [3] https://www.ksrevisor.org/statutes/chapters/ch72/072_062_0062.html
 [4] http://www.kslegislature.org/li_2020/b2019_20/statute/072_000_0000_chapter/072_062_0000_article/072_062_0062_section/072_062_0062_k/

Unintentional Drownings in Kansas

Sophia Ringerling, MPH, CHES

Bureau of Epidemiology and Public Health Informatics

Introduction

Drowning is a type of suffocation or respiratory impairment from the submersion or immersion in liquid. It is often a silent event that can happen in seconds and take only a couple of inches of water. [1] The majority of drowning injuries occur when a person is alone, a child is unsupervised, or in situations where others are unaware that it is happening. Drowning is preventable; however, it remains a leading cause of unintentional death in the United States.[1] Although drowning poses a greater risk in coastal states, drowning is a significant burden in Kansas resulting in nearly 200 fatal unintentional drowning deaths and 506 non-fatal drownings during 2016-2021. The aim of this article is to provide a current understanding of the magnitude and patterns of unintentional drownings among Kansans and increase the awareness of drowning as a public health issue.

Methods

This analysis uses the Mortality database from the Office of Vital Statistics, Kansas Department of Health and Environment, and Hospital Discharge (HD) and Emergency Department Discharge (EDD) database from the Kansas Hospital Association. Data was analyzed for the years 2016-2021 and age-adjusted rates were calculated by direct standardization using the U.S. 2000 standard population. For this article, unintentional drowning deaths are defined using the International Classification of Diseases, Tenth Revision codes W65-W74 (drowning deaths related to bathtub, swimming pool, natural water, and other or unspecified), and V90 and V92 (drowning deaths related to watercraft). Non-fatal drowning-related injury hospitalizations and emergency department visits are determined by ICD-10-CM diagnosis or external cause-of-injury codes T75.1, V90, V92, W16 (with 6th character=1), W16.41, W16.91, W22.041, W65-W74, X71, X92, and Y21.

Findings

Fatal Unintentional Drownings by Year

Over the 6-year period from 2016-2021, 197 Kansans died from unintentional drowning, with an average of 33 deaths per year. The total number of Kansans who died from unintentional per year drowning ranged from a low of 27 deaths to a high of 36 (Figure 1). The average yearly drowning death rate for the 6-year period was 1.1 (deaths per 100,000 population). The drowning death rate per year ranged from a low of 1.0 to a high of 1.3 (Figure 1).

Settings of Fatal Unintentional Drownings

Anywhere there is water, there is also a risk of drowning especially for unsupervised children. Natural bodies of water (e.g., rivers, lakes, or ponds), swimming pools, and bathtubs are potential unintentional drowning settings, as are less common “other” sources, like wells, fountains, buckets, toilets, and water containers. In addition, there is also risk of drowning related to boating accidents (watercraft-related). Over the 6-year period, almost half of drownings occurred in a natural setting, with 38.3% of fatal drownings occurring in natural water and an additional 7.1% of fatal drownings were classified as watercraft-related (Table 1).

Figure 1: Number and Rate of Fatal Unintentional Drowning by Year, Kansas, 2016-2021

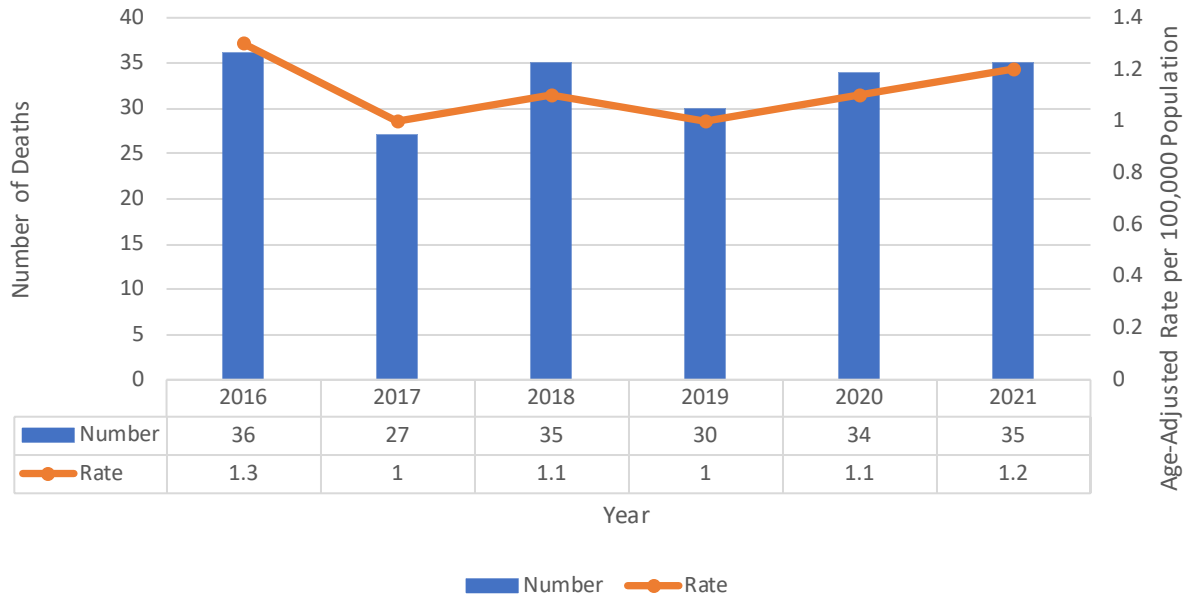


Table 1: Number, Percent Total, and Yearly Average of Fatal Unintentional Drownings* by Setting, Kansas, 2016-2021

Setting	Underlying Cause of Death Code	Number	Yearly Average	Percent Total
Bathtub	W65-W66	26	4.3	13%
Swimming Pool	W67-W68	30	5	15%
Natural Water	W69-W70	75	12.5	38%
Other or Unspecified	W73-W74	52	8.6	27%
Watercraft-related	V90, V92	14	2.3	7%

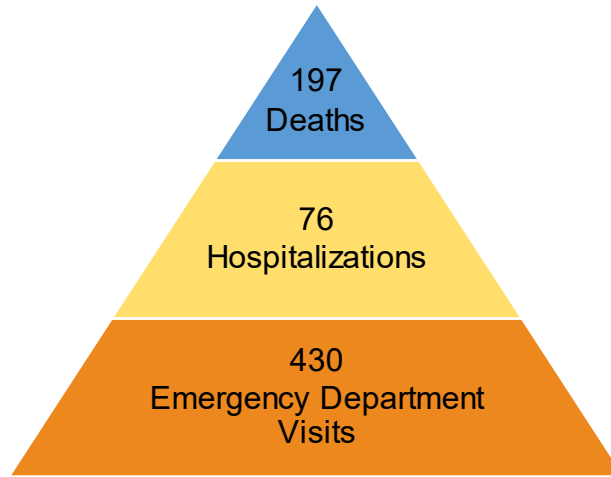
*International Classification of Disease (ICD)-10 underlying cause of death codes V90, V92, W65–W74.

Overall Drowning Injuries

Drownings are not always fatal. For every fatal drowning, there are two more people who receive emergency department care for near (non-fatal) drownings. From those people treated in emergency departments for near drowning, 18% required hospitalization or transfer for further care (Figure 2).

Non-fatal drowning can have severe consequences from long-term health problems (e.g., brain damage, disability) and costly hospital stays. Drowning injuries can also have long-term emotional impacts on families and survivors. [1]

Figure 2: Overall Drowning Injuries in Kansas, 2016-2021



Discussion

Drownings happen year-round in Kansas but primarily peak in the summer months, with 68% of fatal drownings occurring from May to August. Drowning posed different risks depending on age and sex, with males accounting for 77% of all drowning deaths (N=151) and children accounting for 2 in 3 emergency department visits for near drowning (N=283, 66%). Drowning setting also varied by demographics, with children (0-19 years) fatally drowning most often in swimming pools (N=17 out of 30 total, 57%) and adults of all ages most often fatally drowning while in natural waters. Future research should explore drowning risk using estimates of exposure, taking into consideration that risk varies by demographics, geographic location, swimming experience, and among people with seizure disorders or certain medical conditions (e.g., autism, heart conditions, certain medications, etc.).[1]

References

1. Centers for Disease Control and Prevention [Internet] Injury Center: Drowning Prevention. [cited 2022 November 30] Available from: <https://www.cdc.gov/drowning/facts/index.html>.

Trends in unintended drug overdose deaths for Kansas residents, 2002-2021

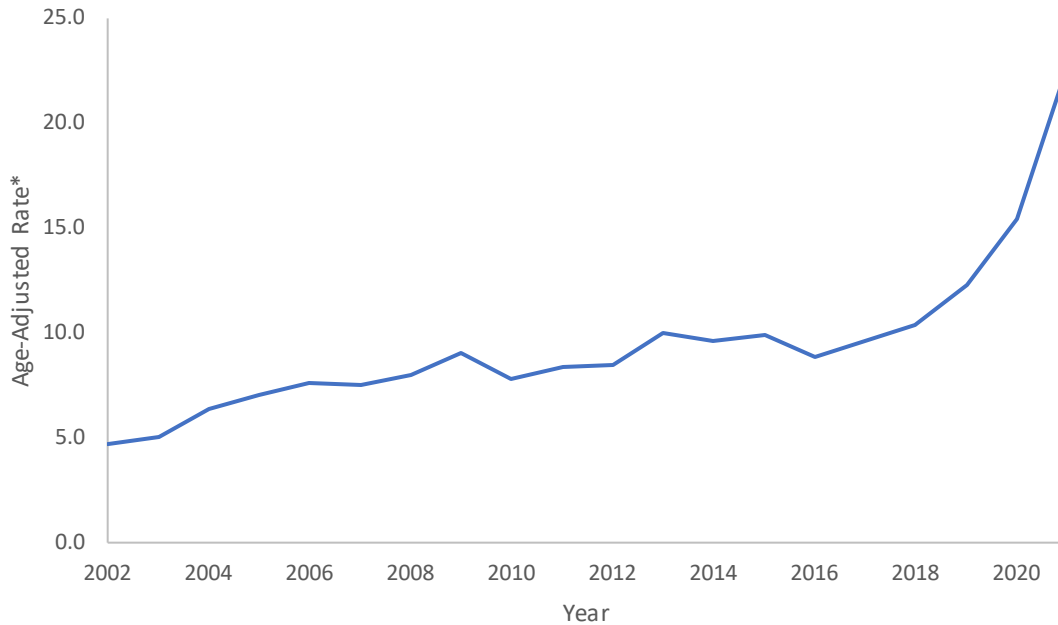
David Oakley, MA, Research Analyst

Bureau of Epidemiology and Public Health Informatics

Drug deaths have been rising in the United States for the past two decades, and Kansas has not escaped the trend. For the U.S. as a whole, the number of drug overdose deaths (of all intentionalities) increased by roughly 4.5 times, from 23,518 deaths in 2002 to 106,699 in 2021.¹ There was a roughly four-fold increase in the number of drug deaths of Kansas residents in the 2002-2021 period. In 2002, there were 168 Kansas resident deaths with drugs as an underlying cause (125 unintended or of undetermined intent, 43 intentional)². By 2021, there were 679 Kansas resident deaths with drugs as an underlying cause (635 unintended or of undetermined intent, 44 intentional).³

Between 2002 and 2021 the death rate for Kansas residents due to drugs increased from 4.7 per 100,000 population to 22.7 per 100,000 (rates age-adjusted to 2000 U.S. standard population) (see Figure 1). This includes only deaths where drugs were the underlying cause of death (excluding deaths where drugs were a contributing cause but not the underlying cause of death), and where the manner of death was unintentional or of undetermined intent (excluding cases where drugs were used for suicide or homicide).

Figure 1. Deaths of unintentional or undetermined intent with drugs as underlying cause, by year of death and age-adjusted death rate, Kansas residents 2002-2021



* per 100,000 U.S. 2000 Standard Population

¹ Spencer MR, Miniño AM, Warner M. Drug Overdose Deaths in the United States, 2001-2021. NCHS Data Brief, No. 457. Hyattsville, MD: National Center for Health Statistics. 2022.

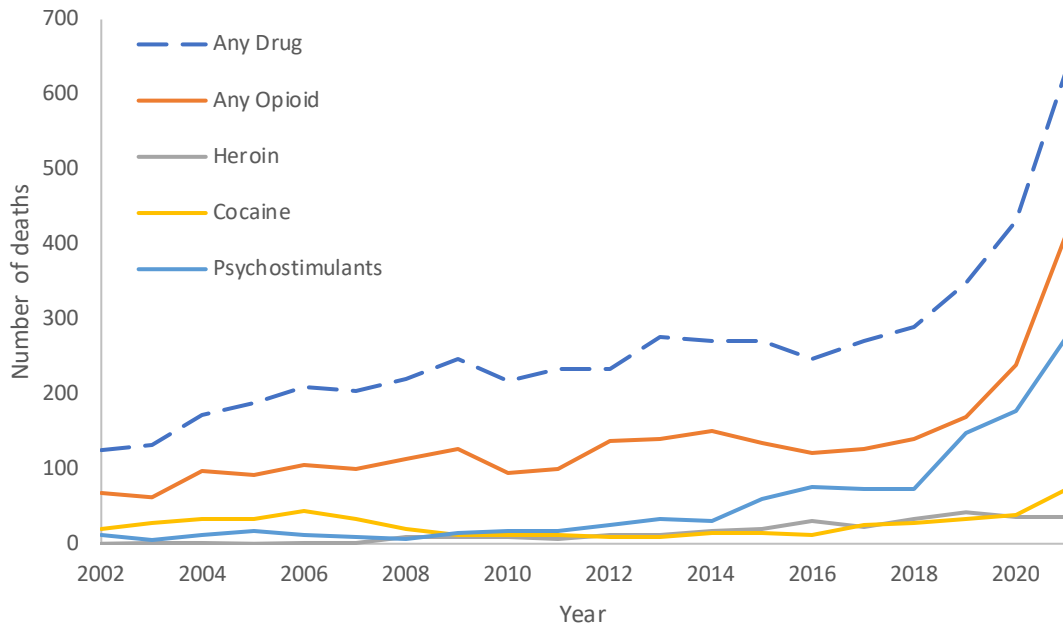
² The relevant ICD-10 codes are X40-X44 for unintentional drug deaths, X60-X64 for suicide by drugs, X85 for assault by drugs, and Y10-Y14 for drug deaths of undetermined intent.

³ Kansas Annual Summary of Vital Statistics, 2021, Tables E32 and E33.

The increases in the age-adjusted death rate over the 2002-2021 period were statistically significant⁴. The modelled annual percent increase in the death rate was 13.5 percent from 2002 to 2006, 2.2 percent from 2006 to 2018, and 28.7 percent from 2018 to 2021, but the change was statistically significant in each of the three segments.

The increase in unintentional and undetermined intent poisoning deaths has involved more than one class of drugs. The number of deaths with opioids as a contributing cause increased from 67 in 2002 to 416 in 2021, while the number of deaths with psychostimulants (the drug category that includes amphetamine and methamphetamine) as a contributing cause increased from 11 in 2002 to 277 in 2021 (Figure 2).⁵

Figure 2. Deaths of unintentional or undetermined intent with drugs as underlying cause for selected drug classes, by year of death and number of deaths, Kansas residents 2002-2021



Only a handful of drugs are coded individually, largely due to their historical importance: heroin (an opioid), methadone (an opioid), cocaine (a psychostimulant), and LSD (a psychodysleptic). The number of unintentional and undetermined cause deaths where heroin was a contributing cause of death has increased from none in 2002 to 37 in 2021, and the number of deaths where cocaine was a contributing cause of death (for the same intentionalities) has increased from 20 in 2002 to 73 in 2021. In 2021, methadone contributed to fewer than ten deaths (of any intentionality), while LSD contributed to only two deaths (of any intentionality) in the 2002-2021 period.

The remaining opioids are coded only by class, the most important of which are 1) natural and semi-synthetic opioids (hydrocodone, hydromorphone, morphine, oxycodone and oxymorphone were each noted in at least one Kansas death in the period of interest) and 2) synthetic opioids (fentanyl, meperidine/pethidine, tapentadol, and tramadol were noted in at least one Kansas death in the period of interest). Drug deaths of unintentional or undetermined cause where natural or semi-synthetic opioids were coded as contributing causes increased from 37 in 2002 to 106 in 2021. Drug deaths of

⁴ As determined by the JoinPoint program.

⁵ Due to the existence of multi-drug poisonings, adding the number of deaths due to individual drug classes will produce a number greater than the total number of drug poisoning deaths.

unintentional or undetermined cause where synthetic opioids were coded as contributing causes increased from 16 in 2002 to 358 in 2021.

Most of the increase in deaths due to synthetic opioids can be attributed to fentanyl, which is first mentioned in the cause of death sections of the death certificate in 2005, when it contributed to 11 deaths of unintentional or undetermined intent. In 2021 fentanyl contributed to 336 deaths of unintentional or undetermined intent.⁶

Kansas Environmental Health Program Highlighted in Environmental Systems Research Institute (Esri) Case Study for Environmental Health Technological Advancements

KDHE Childhood Lead Poisoning Prevention Program

State governments have been tasked with data modernization efforts and providing better quality data to advance public health initiatives. One way to do that is by leveraging advanced technology to visualize how environmental health is connected to public health. Air pollution, tickborne disease, and lead poisoning are all examples of environmental exposures that impact public health. The Kansas Department of Health and Environment (KDHE) includes several environmental health programs. The Kansas Environmental Public Health Tracking Program (Tracking) studies and analyzes these connections as a part of its core mission to protect and improve the health and environment of all Kansans. One of the ways it supports this mission is by providing local government jurisdictions, researchers, and the public with data so they can make better, more informed decisions when it comes to public health. The Tracking program is responsible for collecting, preparing, and sharing environmental health data.

In 2020, the Tracking program began a large-scale project to modernize their existing website. The creation of a new data explorer was identified as a critical need for the project as the existing platform was outdated, difficult to use and failed to meet minimum standards established for data display. The program needed an integrated software solution that was capable of handling data of differing data types (point vs. polygon), geographies, time periods and stratifications. They found what they needed in geographic information system (GIS) technology. GIS technology was the best option for its mapping capabilities, widget configurations, and products for data visualizations.

The program worked with Esri to develop an innovative Data Explorer to display environmental health data and county profiles. Leveraging the diverse options available through Esri technology, the Tracking program was able to combine more than 10 disparate data sets all into one easy-to-use format. With the standardization of the master enterprise geodatabase, the data explorer is inherently designed to expand as new datasets become available. The team leveraged the flexibility of ArcGIS Experience Builder to seamlessly incorporate county profiles developed in ArcGIS Business Analyst, a demographics mapping software, and combined environmental health data with census demographics to produce customized profiles for all 105 counties in Kansas. Profiles are easily accessed using the county profiles link in the header of the data explorer.

Recently the Tracking program collaborated with Esri to write a case study about the project titled **Kansas Enhances Environmental Health with GIS Technology**. Esri states that *“this work is a valuable and important contribution to the larger environmental health community as it showcases the best practices and benefits of embracing the geographic approach and leveraging GIS technology.”*

View the full case study article [here](#).

⁶ Since fentanyl is not coded separately, its presence could only be determined by a text search on the word “FENTANYL”. If coroners have also used abbreviations or other terminology for this drug, the counts reported above would be higher.

Announcements

Item 1. *Natality Report by Racial and Ethnic Population Groups, Kansas, 2021* is now available <https://www.kdhe.ks.gov/DocumentCenter/View/27124/Natality-Report-by-Racial--Ethnic-Population-Groups-2021-PDF>

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