

REPORT ON DEATHS AMONG PRESUMED HOMELESS INDIVIDUALS INVESTIGATED BY THE KING COUNTY MEDICAL EXAMINER JANUARY 1, 2012-DECEMBER 31, 2021

BACKGROUND

The literature and first-hand experiences of people who are living homeless describe how the longer one remains unsheltered and without access to care, the more likely premature death occurs.¹

A review of death certificate data is one strategy to help understand circumstance and cause. Washington State death records do not capture homeless status in a way that can be readily analyzed². The King County Medical Examiner's Office (KCMEO) does for the subset of all deaths that are investigated by KCMEO.

KCMEO was among the first medical examiner offices in the United States to record homeless status in 2003. Their efforts were precipitated by the advocacy of Women's Housing and Equality Enhancement League (WHEEL) and Mary's Place. These grassroots and community-based organizations continue to organize and support people experiencing homelessness, including through the [Homeless Remembrance Project](#).

Public Health's Health Care for the Homeless Network (HCHN) has disseminated a monthly report on deaths investigated by the KCMEO since 2003. This is known as the Presumed Homeless Death Report and serves as the basis for this analysis.

OBJECTIVE

The purpose of this report is to provide a ten-year perspective on deaths that occurred among individuals presumed to be homeless among all deaths investigated by KCMEO between January 1, 2012, and December 31, 2021. Data from 2012 through 2018 was previously released and has been updated in this report where relevant. This information is now also available in dashboard format ([Presumed Homeless Death Dashboard](#)).

KEY FINDINGS

KCMEO investigated the deaths of 1,429 people presumed to be homeless.

The total number of deaths investigated among these community members increased over the decade and represent an estimated 5% of all KCMEO investigated deaths. This rate has remained relatively consistent.

Nearly 60% of deaths occurred outdoors, in vehicles, or other spaces not meant for human habitation.

Disparities persist in the number of KCMEO-investigated deaths among Black or African American and Alaska Native or American Indian people presumed to be homeless.

In the Seattle and South King County regions, accidental deaths had a statistically significant increase. Drug overdose and poisoning cases comprise the largest proportion of these accidental deaths.

¹ Funk AM, Greene RN, Dill K, Valvassori P. The Impact of Homelessness on Mortality of Individuals Living in the United States: A Systematic Review of the Literature. *J Health Care Poor Underserved*. 2022;33(1):457-477. doi: 10.1353/hpu.2022.0035. PMID: 35153234.

² The Washington State Department of Public Health added a question on homelessness status to its Electronic Death Registration System (EDRS) in mid-2022. All certifiers are now instructed to complete. The responses will not appear on the death certificate <https://fortress.wa.gov/doh/edrs/EDRS/FormsDocuments.aspx>

EXPLANATION OF DATA

Medicolegal death investigators determine housing status based on information inferred from place and circumstances and/or testimony from witnesses or next of kin. Given the complex nature of human remains investigations and the intricacies of homelessness, the term ‘presumed’ is recommended. The final homeless status designation for a decedent is made by KCMEO.

KCMEO’s working definition of “presumed homeless persons” is individuals without permanent housing who lived on the streets or stayed in a shelter, vehicle, or abandoned building at the time preceding death. Decedents who were living in transitional or supportive housing, or a doubled-up/couch surfing situation are not likely classified as homeless in this data set.

This definition does not align with any other local or federal definitions of homelessness, and determining housing status can be imprecise due to high variability in decedent circumstances. Examples include the potential inclusion of cases that occur in motels. The service provider distinctions between shelters and transitional housing may also not be parsed out by investigators. This is especially true in locations where multiple programs operate at the same location, and as our region moves towards different and novel models of temporary housing.

METHODS

The data source is an extract provided by KCMEO on individuals recorded as homeless under the ‘no fixed address’ field in their database between January 1, 2012, and December 31, 2021. We obtained decedent attributes including age, race, ethnicity, and sex, as well as the manner and cause(s) of death. To the extent available, details about the circumstances of deaths were also included such as death location, location type, incident/injury location, incident/injury location type.

Demographics were determined post-mortem by KCMEO. We report descriptive statistics (for example, counts and percentages) and use log-transformed ordinary least squares regression to detect and approximate percent year-on-year difference in manner of death type. $p < 0.05$ was used to determine significance of estimates. All data manipulation and analysis were conducted using R version 4.2.0.

LIMITATIONS

KCMEO only investigates deaths that are either unexpected, sudden, violent, suspicious, and/or lack a known cause as defined by [RCW 68.50](#). KCMEO investigated or reviewed approximately 19% of all deaths that occurred in King County over the ten-year period.³

An example of decedents who would not be included are those who had a healthcare provider with sufficient knowledge of their natural disease status to complete a death certificate. Findings are not generalizable to the population of King County residents or the broader population of persons experiencing homelessness. The definitional differences for homelessness between organizations are substantial and have changed over time as new service paradigms and living situations have been recognized. However as our region moves towards more comprehensive and equitable methods to understand the [estimated number of people experiencing homelessness](#), inconsistent definitions can lead to data discrepancies.

³ Washington State Department of Health, Center for Health Statistics, Death Certificate Data, 2020, Community Health Assessment Tool (CHAT), December 2021 <https://doh.wa.gov/data-statistical-reports/washington-tracking-network-wtn/death/county-all-deaths-dashboard>

While ascertaining race and ethnicity data is an essential part of Public Health's commitment to end racism as a public health crisis and is presented in this report, caution should be taken when comparing KCMEO figures to the racial distribution of King County residents, as KCMEO decedents are non-representative of the King County population due to KCMEO jurisdictional criteria (described above). An estimated 5% to 7% of KCMEO investigated cases also include those that have an incident location outside of King County or is unknown. Hispanic or Latinx ethnicity is not available for every case.

INTERPRETING CAUSE OF DEATH AND COMPLEXITIES OF ACCIDENTAL DEATHS

KCMEO cautions against using the reported cause of death as the only data source to understand mortality rates. The Medical Examiner may have incomplete information on a decedent's medical history, and the legal documentation process using a set of defined diagnostic codes makes it challenging to capture the complexity of accidental deaths and may obscure true and other underlying causes of death. When deaths due to otherwise natural causes are hastened by injury (such as a fall), the manner of death is not considered natural. See the [King County Medical Examiner](#) for further information.

RESULTS

The Medical Examiner's Office investigated the deaths of 26,336⁴ individuals between January 1, 2012, and December 31, 2021. Approximately 5% (n=1,429) were presumed to be homeless. *This rate has remained relatively consistent, even as the absolute number of presumed homeless decedents has increased since 2014.*

Table 1. Total Number of Presumed Homeless Decedents Investigated by KCMEO

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	TOTAL
All MEO Cases	2,104	2,119	2,229	2,103	2,384	2,444	2,460	2,604	3,837	4,052	26,336
Presumed Homeless	78 (4%)	103 (5%)	87 (4%)	124 (6%)	137 (6%)	170 (7%)	196 (8%)	166 (6%)	180 (5%)	188 (5%)	1,429 (5%)

Factors associated with this increase among presumed homeless decedents include, a) increase in deaths investigated by KCMEO, b) regional population growth (during this ten-year period, the King County population grew by approximately 15% from 1.97 million to about 2.25 million), c) parallel rise in homelessness.

While it's not possible to precisely quantify the rise in overall homelessness, because of methodologies used to estimate the population totals, a [recent analysis](#) estimated more than 40,000 individuals were unhoused and engaged with homeless services, while the point-in-time counts showed an increase from 4,505 in 2016 to 5,578 in 2020 in the number of individuals living unsheltered and/or staying in spaces not meant for human habitation. Additionally, deaths in outdoor locations are more likely to fall under KCMEO jurisdiction for investigation purposes.

Similar to the broader KCMEO investigated population, drug overdose and poisoning cases are a contributing factor in the rising number of deaths, with fentanyl being a key concern. Fentanyl-related deaths have increased among presumed homeless decedents since 2019 (est. 6% to 32%).

IMPACT OF THE COVID-19 PANDEMIC

The significant increase in the number of KCMEO-investigated cases in 2020 and 2021 (3,837 and 4,052) is largely attributed to KCMEO conducting enhanced surveillance to identify deaths due to COVID-19. This included collecting samples from decedents coming into KCMEO as well as from decedents at funeral homes who died at care facilities and other locations. It's possible that this overall increase in investigations contributed to the increase in total homeless deaths counted in 2020-2021.

Among presumed homeless decedents, no significant change in the number of deaths could be attributed to the COVID-19 pandemic. Since identification of a case of COVID-19 requires diagnosis by a health care professional, any deaths occurring as a consequence of infection, by definition, would not fall under KCMEO jurisdiction as they could be certified by attending health professional. Due to this selection criterion, most COVID-19 deaths occurring among people experiencing homelessness did not fall under KCMEO jurisdiction.

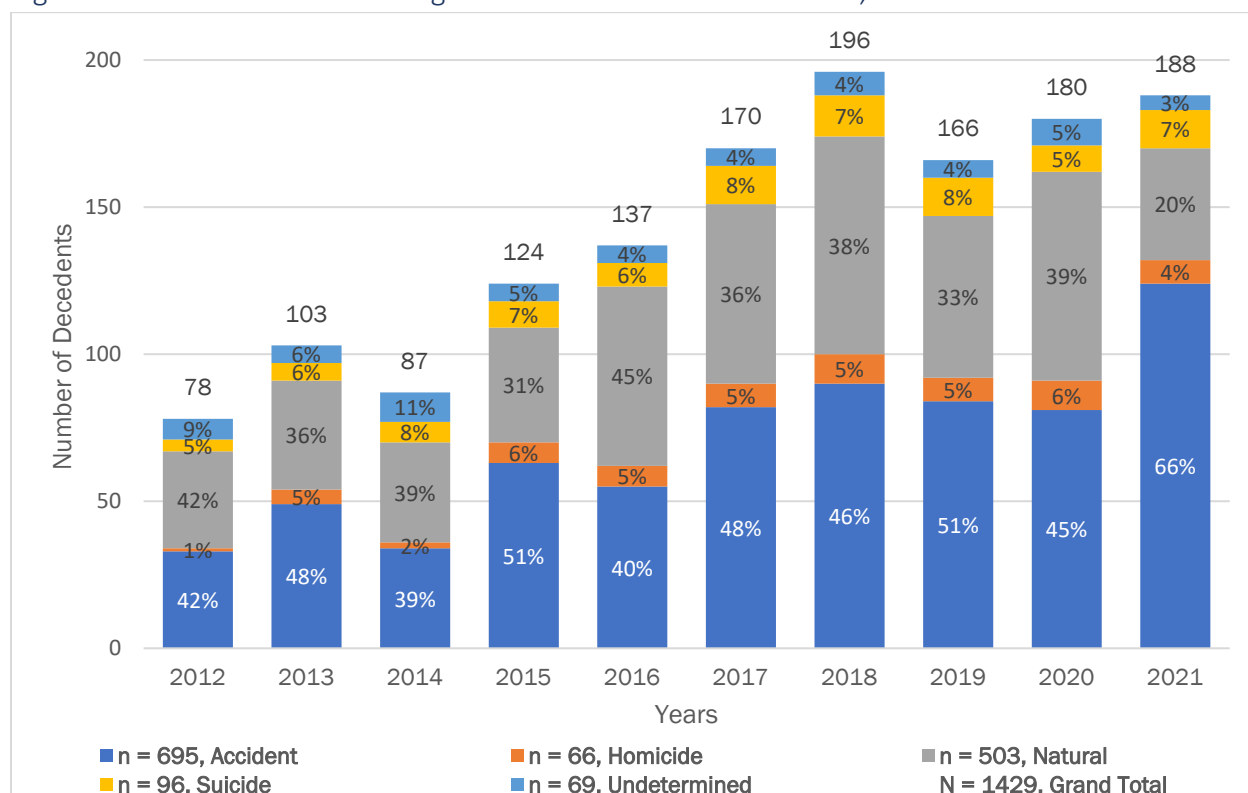
Public Health—Seattle & King County did deploy [COVID-19 Homeless Response Teams](#) to investigate outbreaks that occurred in congregate settings and conduct outreach to unsheltered individuals. A summary of COVID-19 cases associated with the homeless response system through January 2022 can be found on the King County [Homelessness and COVID-19](#) dashboard.

⁴ The King County Medical Examiner's Annual Report for 2021 has not been released. The final number of cases may for 2021 may change slightly.

MANNER OF DEATH

The Washington State Department of Health (DOH) classifies deaths as natural, accident, suicide, homicide, undetermined, and pending. Only the KCMEO can certify all five categories. Other certifiers, such as health care providers, can only certify natural deaths or refer the case to KCMEO. All deaths due to drug poisoning or overdose must be referred and represent a significant portion of KCMEO cases.

Figure 1. Manner of Death among Presumed Homeless Decedents, 2012-2021



Between 2020 and 2021, there is a notable percentage decrease in deaths classified as natural (20% compared to 39%, or a difference of 33 cases). The majority is attributed to an increase in accidental deaths described below. This does not mean decedents did not have underlying disease. If natural deaths are hastened by injury, then manner is not legally considered natural. Please reference previous limitations section when interpreting this data.

Accidental: Over the ten-year period, the largest proportion of deaths among presumed homeless decedents are classified as **accidents** (49%).

- Of accidental deaths, *drug overdose and poisoning cases* comprise the most common cause of death, accounting for 71% of accidental deaths (35% of deaths overall). Overdose is also the most common type of accidental death among the overall population of deaths investigated by KCMEO. Data specific to overdose is best understood by reviewing King County's [Overdose Deaths Dashboard](#) which includes case counts on unstably housed individuals and fentanyl-related cases.
- *Traffic deaths*, defined as an unintentional death of a driver, passenger, or pedestrian involving a motor vehicle on public roadways, are a subset of accidental deaths, and

represent 13% of accidental deaths. No specific patterns or recurring hazard areas (for example, particular overpasses or intersections) were identified.

- Accidental deaths associated with *environmental exposures* (hypothermia or hyperthermia) are of particular interest to people experiencing homelessness who live outside, including in vehicles, as our region experiences more extreme weather patterns. These deaths are presented below in **Table 2**.

Accidental environmental exposure cases are complex due to the potential underlying health conditions of decedents. There is a statistically significant increase in exposure related deaths from 2012-2021 of one additional death per year on average (95% C.I. 0.5-1.5). Incident locations for such deaths are a mix of outdoor locations and vehicles. More than 90% of environmental exposure deaths occurred between October and April. There is no clear pattern associated with severe weather (for example, when alerts were issued for excessive smoke, heat, freezing temperatures).

Table 2. Environmental Exposure Related Homeless Deaths by Quarter and Year

Quarter	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total
Q1 (Jan-Mar)	0	1	0	0	2	1	2	7	0	4	17
Q2 (Apr-Jun)	0	0	0	0	0	0	0	0	1	2	3
Q3 (Jul-Sep)	0	0	0	0	0	0	0	0	0	1	1
Q4 (Oct-Dec)	0	0	0	3	6	5	3	2	5	2	26
Total	0	1	0	3	8	6	5	9	6	9	47

Natural: Natural deaths account for 35% of deaths. These are determined to be natural due to resulting from a naturally occurring disease process, but they met criteria for the KCMEO to assume jurisdiction for another reason (e.g. no physician attendance, occurring under suspicious circumstances). In 2021, there is a notable single-year decrease in deaths classified as natural and increase in deaths reported as accidental and further described below Figure 1.

Suicide & Homicide: No significant increase in either **suicide** or **homicide** among presumed homeless decedents is observed over the ten-year period. Seven percent (7%) of deaths were attributed to suicide. Five percent (5%) of deaths were attributed to homicide.

Undetermined: Deaths where manner is undetermined represents a small number of cases and has decreased over the past ten years with the lowest percentage of undetermined (3%) in 2021. Per Washington State law, **fetal deaths** are not assigned a manner of death and are reported separately. Fourteen fetal deaths among the presumed homeless decedent population occurred over the ten-year period.

PRIMARY CAUSE OF DEATH

Cause of death indicates the medical cause of death and the disease(s) or injuries that caused death. KCMEO cautions against using the reported cause of death as the only data source to understand mortality rates. High-level observations can be offered: Among **natural** deaths, the most common preventable conditions in the general population are also most seen among presumed homeless decedents. These include cardiovascular disease, respiratory conditions, cancer, liver disease, and diabetes. As previously noted, drug overdose or poisoning remains the leading cause of death among **accidental** deaths. Overall, there is minimal year-to-year variation in cause of death.

DEMOGRAPHICS

Table 3 Demographics of Presumed Homeless Decedents 2012-2021

Total Decedents	1,429	100%
Race		
American Indian or Alaska Native	87	6%
Asian	50	3%
Black or African American	206	14%
More than one race	9	1%
Native Hawaiian or Pacific Islander	3	<1%
White	1,032	72%
Unknown	42	3%
Ethnicity		
Hispanic or Latinx ⁵	73	5%
Age Group		
<18	6	<1%
18-24	32	2%
25-34	202	14%
35-44	262	18%
45-54	370	26%
55-64	405	28%
65-74	122	9%
75+	27	2%
Unknown	3	<1%
Gender		
Male	1,167	82%
Female	262	18%
Transgender	0	0%

SUMMARY

Cumulative data over time shows persisting disparities in cases among Black or African American and Alaska Native or American Indian decedents.

Census data estimates show Black or African Americans are 6% of the King County population but 14% of presumed homeless decedents over this 10 year-period. And Alaska Native or American Indians are 1% of the county population but 6% of decedents.

The median age of presumed homeless decedents was 51 compared to the median age of all other KCMEO decedents of 62 (while for all KC residents, the median age at death was 79).

The vast majority of decedents are male with no significant changes over time.

Black or African American and Alaska Native or American Indian decedents are overrepresented in homicide, suicide, and accidental deaths. Data is presented in Table 5, after the summary discussion, on how we understand the intersections of poverty and racism as key factors in premature mortality.

⁵ Information on Hispanic or Latinx ethnicity is not available for every case and deaths among this group may be underrepresented. KCMEO began using race and ethnicity data from the WA. Electronic Death Registry System and adjusted their race group categorization in 2021. See [2021 KCMEO Annual Report](#)

LOCATION OF DEATH

Two data points are used to understand where a person died. The incident location indicates where the decedent was found or where the injury occurred, and the place of death indicates where death was pronounced. Of the 1,429 cases, 850 (59%) had the same incident and death location.

Incident location is particularly important when trying to understand accidental, suicide, and homicide deaths, as well as natural deaths preceded by an acute disease process (for example, cardiac arrest, stroke, kidney failure). **An estimated 57% of deaths occurred outdoors, in vehicles, or other spaces not meant for human habitation.** As shown in Table 4, these outdoors/vehicle deaths have fluctuated over time, with the two greatest portions being 76 (61%) in 2015 and 133 (71%) in 2021. Understanding the circumstances leading to these deaths may be important to identifying unrecognized service gaps or other needs.

Table 4 Incident Location of Presumed Homeless Decedents 2012-2021

Incident Place Type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Total	
											N	%
Healthcare Facility	12	9	12	12	9	9	15	15	8	5	106	7%
Shelter Facility	2	5	4	5	5	8	10	15	6	3	63	4%
Other	25	27	27	22	28	46	43	23	35	24	300	21%
Unknown	6	7	3	9	15	18	22	15	28	23	146	10%
Outdoors/Vehicle	33	55	41	76	80	89	106	98	103	133	814	57%
Total	78	103	87	124	137	170	196	166	180	188	1,429	100%

GEOGRAPHY & REGION

The majority of deaths occurred in Seattle (1,000; 70%), followed by South (299; 21%), East (88; 6%), and North (24; 2%) County regions. Examining deaths by [Health Reporting Areas \(HRAs\)](#) allows us to examine geographical patterns below the county level:

- Within **Seattle**, the largest number of deaths continue to be Downtown (306), followed by Central Northwest (Ballard area) (88), and Northeast (University District to Sand Point) (60).
- In the **South** region, deaths were highest in SeaTac/Tukwila (57), followed by SE-Kent (55), North Renton (34), South Auburn (34), and North Auburn (22).
- For **East King County**, deaths were highest in Kirkland (17), Central Bellevue (16), Snoqualmie/North Bend (14), Redmond (12) and West Bellevue (11)
- Deaths occurring in **North King County** were in Shoreline (12), and Bothell/Woodinville (9)

Maps of these areas, as well as by City and Zip Code, may be viewed on the dashboard (embed link).

The only regional trend noted was a statistically significant increase in accidental deaths (due to drug overdose or poisoning) in Seattle and South King County. These regions had an increase of 5.9 and 1.7 deaths per year on average. No increase was noted in other regions. Overall, the regional distribution of deaths follows where we understand the largest concentrations of people experiencing homelessness are staying in and/or accessing services.

TRANSPORTATION OF DECEDENTS ACROSS REGIONAL BOUNDARIES.

Decedents may be transported across regional boundaries based on the level of medical care needed and resources in each area. For most deaths in a region, the preceding incident also occurred within that region. However, for decedents with distinct places of death and incident, many were transported to a different King County region prior to death for medical care. Of transported cases, by region of incident, 1% from East, 11% from North, 7% from South, 96% from Outside King

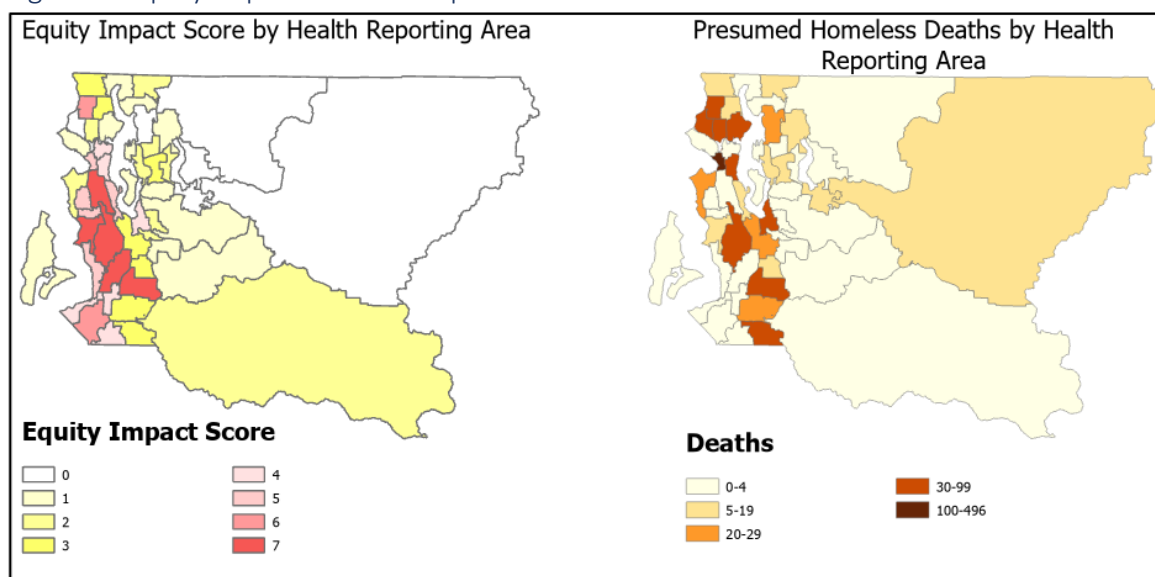
County were transported to Seattle where there are many long-term and high-acuity medical facilities including Harborview as the regional trauma center.

APPLICATION OF EQUITY IMPACT REVIEW PRACTICES

Over the past decade, the [King County Office of Equity & Social Justice](#) has produced a series of maps and tools that show the distribution of key demographics within King County, including race/ethnicity, economic status, languages spoken, and age. One such tool is the [King County Equity Impact Awareness Tool](#), produced in partnership with Headwater People Consulting which includes an Equity Impact Compound Risk Score. This provides a single-number metric to help better understand our populations and where profound negative health outcome disparities persist. Higher scores (>5) on the Equity Impact Score (range: 0-8) are frequently identified as priority areas.

Figure 3 shows a side-by-side view of King County at the level of Health Reporting Areas (HRA) of Equity Impact Score and number of decedents in from 2012-2021 who died in that HRA. It is visually apparent that HRAs with greater Equity Impact Scores generally align with HRAs where we see the highest number of cases on the right-hand side. The identified priority areas are ones where we see the impact of poverty and racism on health outcomes. They include locations with higher concentration of people living below the federal poverty level and majority Black, Indigenous, and people of color (BIPOC) communities.

Figure 3. Equity Impact Review Map and Presumed Homeless Deaths



Gun-related injuries and deaths are an increasing [Public Health concern](#). A broader discussion of this topic is outside the scope of this report and there is no single source to quantify the percentage of people experiencing homelessness that may be impacted. For example, these same geographic areas reflect higher numbers of [Emergency Medical Service calls](#) and a larger impact of firearms. We can say the number of gun-related injuries and deaths tend to be higher in these priority areas when we also do a side-by-side comparison with [Emergency Medical Service calls](#) and [review reports on the impact of firearms](#).

SUMMARY

KCMEO investigated the deaths of 1,429 individuals presumed to be homeless between January 1, 2012, and December 31, 2021. An increase in investigated deaths among these community members was observed, alongside an increase in the total number of KCMEO cases, and the number of individuals living unsheltered. Most of these deaths were premature. The median age of presumed homeless decedents was 51 compared to the median age of all King County residents who died which was 79.

The majority were male. Black and African Americans, and American Indian or Alaska Native decedents were overrepresented. These communities are also vastly overrepresented among people experiencing homelessness. [The King County Regional Homelessness Authority estimates](#) that Black or African Americans comprise 30% of the population accessing services and American Indian or Alaska Natives make up 5% as captured in the Homeless Management Information System (HMIS). This is striking given these communities represent 6% and 1% of the general population respectively, and given we know HMIS alone is an undercount of the homeless population. These communities further have significantly higher rates of unintentional injury deaths and lower life expectancy rates than the general population. These interconnected issues should be understood in the context of structural racism. [The Race Gap](#) and [Communities Count](#) are resources for additional learning.

As would be expected for investigated deaths, over the ten-year period, the largest proportion of deaths among presumed homeless decedents are classified as accidents (49%). Of accidental deaths, [drug overdose and poisoning cases](#) comprise the most common cause of death, accounting for 71% of accidental deaths (35% of deaths overall). Overdose is also the most common type of accidental death in the broader KCMEO population, where there are similar concerns of [fentanyl-related](#) overdoses. They have increased among presumed homeless decedents since 2019 (est. 6% to 32%). No significant increase attributed to COVID-19 among presumed homeless decedents was observed. Overall, most COVID-19 deaths understood to have occurred among people experiencing homelessness did not fall under KCMEO jurisdiction. They were deaths that largely could be certified by a health care professional and described on the [Homelessness and COVID-19](#) dashboard.

Among King County regions, most deaths occurred in Seattle (1,000; 70%), followed by South (299; 21%), East (88; 6%), and North (24; 2%) County regions. In the Seattle and South King County regions, accidental deaths have had a statistically significant increase of 5.9 and 1.7 deaths per year on average respectively; no increase was noted in other regions or manner of death.

There is significant overlap between the Health Reporting Areas (HRAs) where a majority of presumed homeless decedents were found and HRAs that are frequently identified as priority areas across multiple Public Health issues focused on improving health equity.

RELEASE NOTES

Date: 09/29/2022
Public Health - Seattle & King County
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[Presumed Homeless Death Dashboard](#)

For questions, contact lee.thornhill@kingcounty.gov

Table 5. Manner of Death by Race and Ethnicity 2012-2021

Race/Ethnicity	Manner of Death	Year										Total
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
American Indian or Alaskan Native,	Accident	4	7	1	3	9	6	6	7	4	11	58
	Homicide				1	1	2	1	2			7
	Natural		1	2	2	1	1		3	4	1	15
	Suicide				1		1		1			3
	Undetermined		2				1				1	4
	Subtotal											87
Asian	Accident		1		2	1	6		2	2	7	21
	Homicide					2			1			3
	Natural		1	1	1		1	4	6	2	2	18
	Suicide		1	2					1	2		6
	Undetermined			1	1							2
	Subtotal											50
Black or African American,	Accident	3	4	7	7	10	8	12	20	13	17	101
	Homicide		2	2	1		3	2	2	2	2	16
	Natural	6	3	4	2	8	12	14	5	15	1	70
	Suicide		1	2	1	1	2		2	1	2	12
	Undetermined			1			1	2		1	2	7
	Subtotal											206
Native Hawaiian or Pacific Islander	Accident									1	1	2
	Natural										1	1
	Subtotal											3
White or Caucasian	Accident	26	37	25	49	35	60	68	55	57	73	485
	Homicide	1	3		5	3	3	7	3	8	3	36
	Natural	27	32	27	34	52	46	56	41	46	25	386
	Suicide	4	4	3	7	7	10	14	9	5	10	73
	Undetermined	7	4	8	4	6	3	5	5	7	3	52
	Subtotal											1,032
More than one Race	Accident								1	3		4
	Homicide									1		1
	Natural								2	2		4
	Subtotal											9
Unknown	Accident			1	2		2	4		3	12	24
	Homicide					1					2	3
	Natural						1			2	6	9
	Suicide									1	1	2
	Undetermined				1		1	1	1			4
	Subtotal											42
Total		78	103	87	124	137	170	196	166	180	188	1,429
*Race and Ethnicity not mutually exclusive categories												
Hispanic or Latinx Ethnicity	Accident	2		2	1	1	7	2	6	6	6	33
	Homicide		1		2			1	2			6
	Natural	4			1	2	3		5	5	4	24
	Suicide					1		1			2	4
	Undetermined			1	2		1	1	1			6
	Subtotal											73