

# Changes in Death Rates during the COVID-19 Pandemic in King County, WA

## January 1 – December 31, 2020

### Background

The first known COVID-19 related death in King County, Washington (WA) occurred in late February 2020. State and local mitigation measures designed to protect the health and safety of residents were implemented in March 2020, with a phased re-opening process beginning in June that was subsequently scaled back in November as case counts increased. COVID-19 mitigation measures included closing schools, businesses and recreation facilities; cancellation of elective medical procedures and guidance to avoid non-urgent medical care; stay-home orders and guidance to practice social distancing with non-household members. These mitigation efforts have prevented deaths and hospitalizations, and also resulted in isolation, grief,<sup>1</sup> and economic hardship<sup>2</sup> for some individuals. Research after previous recessions<sup>3</sup> and pandemics showed changing patterns of death following the events. For example, the Centers for Disease Control (CDC) found that, in the United States, job loss or financial problems (in a non-pandemic year) contributed to 16% of all suicide deaths.<sup>4</sup> In prior recessions, suicide rates increased 1.3% for every 1% rise in the unemployment rate.<sup>5</sup> Other research suggests that COVID-19 related medical care avoidance and delays may also contribute to excess deaths.<sup>6</sup>

Earlier investigations by Public Health – Seattle & King County (PHSKC) and other researchers revealed an increase in the number of deaths in 2020, and the observed excess deaths

### KEY POINTS

- 1) There were 14,893 deaths among King County residents between January 1 and December 31, 2020. Age-adjusted death rates in King County are 12% higher in 2020 compared to the last three years (2017-2019).
- 2) Deaths rates were significantly higher throughout the year by age, race/ethnicity, gender, and region of the county. Notable increases occurred among American Indian / Alaska Native (38%) and Hispanic/Latinx residents (37%).
- 3) King County death rates were higher in 2020 compared to 2017-2019:
  - 61% increase in drowning
  - 36% increase in homicide
  - 23% increase in diabetes-related deaths
  - 23% increase in overdose deaths
  - 19% increase in unintentional injuries
  - 7% increase in cardiovascular deaths
- 4) Overall King County deaths rates were not statistically significantly different for deaths due to cancer, dementia, suicide, traffic-related or firearm-related deaths. Increases were noted in some demographic groups.

<sup>1</sup> Mortazavi SS, Assari S, Alimohamadi A, Rafiee M, Shati M. Fear, Loss, Social Isolation, and Incomplete Grief Due to COVID-19: A Recipe for a Psychiatric Pandemic. *Basic Clin Neurosci*. 2020;11(2):225-232. doi:10.32598/bcn.11.covid19.2549.1

<sup>2</sup> Witteveen D, Velthorst E. Economic hardship and mental health complaints during COVID-19. *PNAS* 2020;117(44):27277-27284. <https://doi.org/10.1073/pnas.2009609117>

<sup>3</sup> Davalos ME, French MT. This recession is wearing me out! Health-related quality of life and economic downturns. *J Ment Health Policy Econ*. 2011 Jun;14(2):61-72. PMID: 21881162.

<sup>4</sup> [https://www.cdc.gov/mmwr/volumes/67/wr/mm6722a1.htm?s\\_cid=mm6722a1\\_w](https://www.cdc.gov/mmwr/volumes/67/wr/mm6722a1.htm?s_cid=mm6722a1_w)

<sup>5</sup> Oyesanya M, Lopez-Morinigo J, Dutta R. Systematic review of suicide in economic recession. *World J Psychiatr*. 2015;5(2):243-54. <https://doi.org/10.5498/wjp.v5.i2.243>.

<sup>6</sup> <https://www.cdc.gov/mmwr/volumes/69/wr/mm6936a4.htm>

were not fully explained by deaths due to COVID-19 illness.<sup>7,8</sup> This suggests that the pandemic may have given rise to deaths through non-biological means, such as delayed care seeking for chronic or acute illnesses or increases in stress and anxiety resulting in negative health outcomes.

This analysis seeks to understand whether there have been changes in death rates for the leading causes of death and causes of death that may have been indirectly impacted by mitigation measures. Because COVID-19 infection rates and the social and economic impacts of mitigation measures have fluctuated over the course of 2020, we looked at deaths in three-month increments over the course of the year, as well as year-to-date deaths. We also examined deaths for various populations since disease and risk factors are not equitably distributed across the county. Please refer to our [online tool](#) for additional exploration.

## Death Rates

Below we present a high-level summary of death rates due to all causes and select causes of death from January 1 through December 31, 2020. Specific causes of death were selected to focus on leading causes of death as well as those potentially impacted by COVID-19 mitigation measures. All estimates were calculated without regard to COVID-19 infection status. For COVID-related deaths and an excess deaths analysis, see the 2020 year-end [Summary Report on Deaths Associated with COVID-19](#).

We analyzed deaths among King County residents from 2017-2020 using death certificate data, comparing 2020 provisional death data to the average number of deaths per year in 2017-2019. Causes of death were defined using text information from death certificates (see [Technical Appendix](#) for definitions and additional details). This analysis framework considers multiple causes of death rather than solely the underlying cause of death due to use of timely provisional data. For example, a traffic fatality due to diabetic shock would be identified in this report as a diabetes-related death, an unintentional injury death, and a traffic death. The cause of death definitions and analytic framework used in this analysis prohibits comparison with existing lists of the leading causes of death.

This report uses rate ratios to compare 2020 death rates to 2017-2019 death rates. A ratio of less than 1 represents a decreased death rate in 2020 compared to 2017-2019; a ratio greater than 1 represents an increased death rate in 2020, and a ratio equal to 1 represents a stable death rate. Unless otherwise noted, death rates and ratios for specific age groups are crude death rates, and all other death rates and ratios are age-adjusted. Unless another time frame is specified, all ratios and percent increases refer to the comparison of the entirety of 2020 to the entirety of 2017-2019. The text identifies findings that were statistically significant.

## All-Cause Deaths

During 2020, there were 14,893 King County deaths compared to an annual average of 13,137 deaths during 2017-2019. The King County age-adjusted all-cause death rate increased by 12% in 2020 compared to 2017-2019. The three-month rolling averages reflects a similar pattern in all-cause deaths compared to COVID-19's local epidemic curve: death rates were similar to previous years in January through March, but from March through May 2020 the death rate was 17% higher than the previous

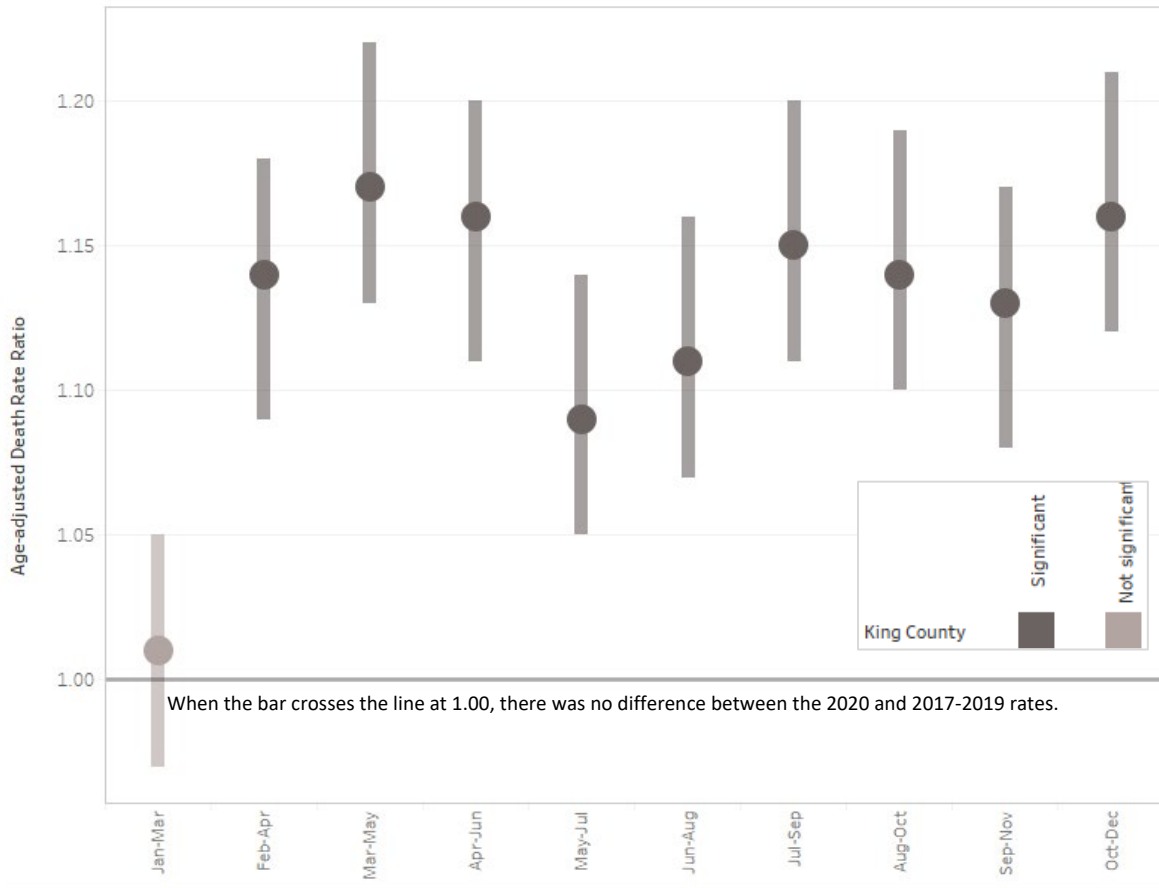
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<sup>7</sup> See <https://www.kingcounty.gov/depts/health/covid-19/data/~media/depts/health/communicable-diseases/documents/C19/deaths-associated-with-covid-19-current.ashx>.

<sup>8</sup> <https://jamanetwork.com/journals/jama/fullarticle/2771761#>

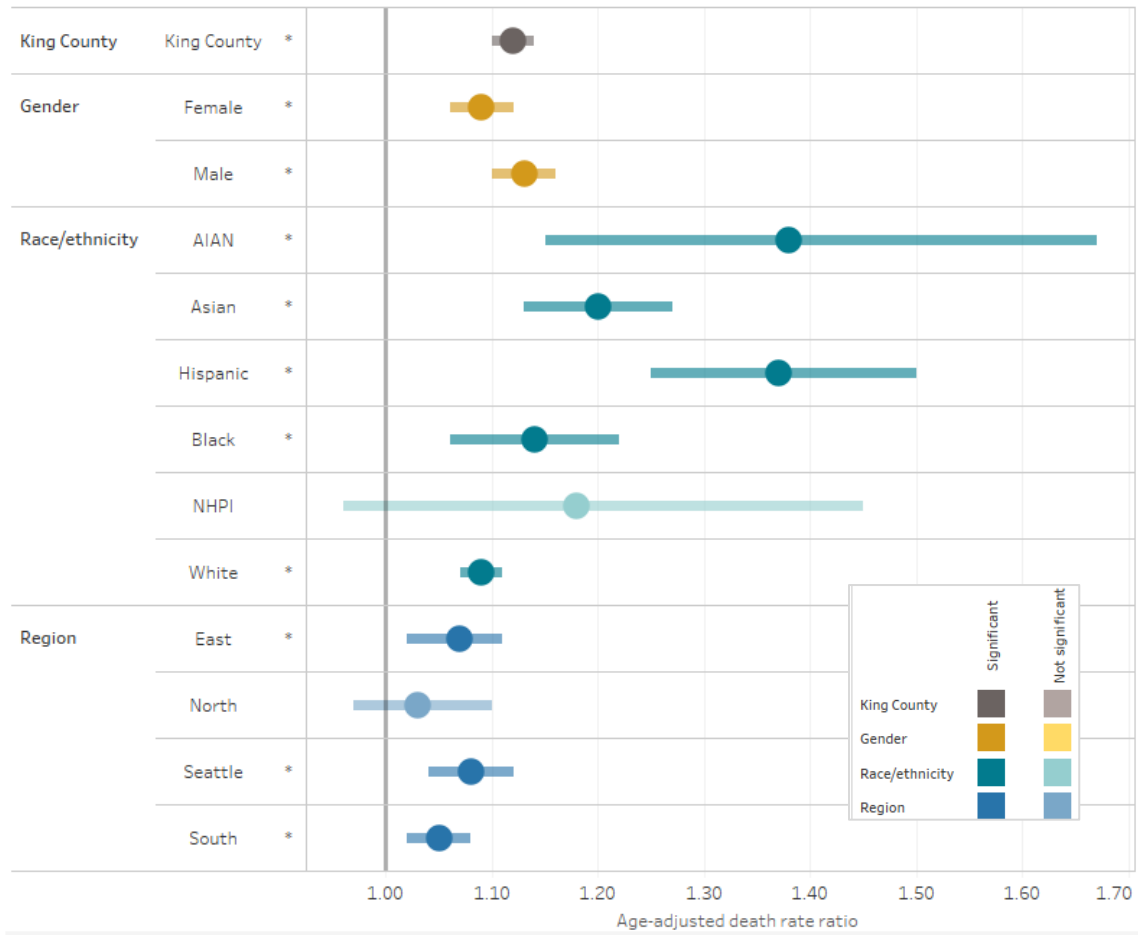
years, and from June-December death rates were between 9% and 16% higher than in previous years (Figure 1). This is not due to COVID-19 deaths alone; as of December 31, 1,126 King County residents had died due to COVID-19.

Figure 1. King County all-cause death rate ratios over time, comparing 2020 vs. 2017-2019



Although older adults had the highest rate of death, residents ages 18-24 and 25-44 years had the highest percent increase in death rates (31% and 23%, respectively). Geographically, death rates increased among residents of Seattle (8%), East King County (7%), and South King County (5%). Increased death rates were observed among American Indian/Alaska Native (AIAN) (38%), Asian (20%), Black (14%), Hispanic (37%) and white (7%) racial and ethnic groups (Figure 2). Native Hawaiian / Pacific Islander (NHPI) death rates increased 18% but did not reach statistical significance. AIAN death rates were elevated at the beginning and end of the year, whereas Hispanic death rates were elevated February through November.

Figure 2. King County age-adjusted all-cause death rate ratios, 2020 vs. 2017-2019



### Specific Causes of Death

*Causes of death are presented in order from highest to lowest crude death rates.*

#### Cardiovascular Disease

In King County in 2020 there were 5,387 cardiovascular disease (CVD) related deaths compared to an average of 4,958 during 2017-2019. King County age-adjusted CVD death rates increased 7% in 2020. The rate increased among AIAN (67%), Hispanics (24%), whites (5%), and males (8%). Those 45-64 years (14%), 65-74 years (11%), and residents of East King County (9%) also experienced increased CVD death rates in 2020. During specific three-month periods, increased CVD death rates were observed for those under 24, 75+, females, Hispanics, NHPI, and residents of South King County.

#### Cancer

In King County in 2020 there were 3,102 cancer related deaths compared to an average of 3,078 during 2017-2019. Though the countywide cancer death rate did not significantly change compared to 2017-2019, it decreased by 10% in South King County. Time-limited decreases in cancer deaths were also observed for males (12% during January through March), Asians (23% during March through May), and East King County (18% during June through August).

## Dementia

In 2020 there were 1,778 dementia deaths (including Alzheimer's) in King County, compared to an average of 1,694 during 2017-2019. The King County-wide age-adjusted dementia death rate did not change significantly between 2017-2019 and 2020. However, the dementia death rate increased 27% among Asian residents and 14% among residents of South King County. The dementia death rate increased by 12% during the summer months and by 11% during October through December. Females experienced an increased dementia death rate during June through August (23%) and July through September (15%). The male rate increased 21% during October through December. The three-month dementia death rate also increased among Hispanics and Asians during specific three-month periods for Hispanics.

## Unintentional injury

Unintentional injuries occur when an unplanned event results in death.<sup>9,10</sup> In 2020, there were 1,004 unintentional injury deaths in King County in 2020, compared to an average of 826 during 2017-2019. The age-adjusted King County rate of death from unintentional injuries increased 19% in 2020 compared to 2017-2019. The unintentional injury death rate was consistently elevated from February through October. Unintentional injury deaths increased among multiple age groups: 0-17 (86%), 18-24 (62%), 25-44 (28%), and 65-74 (26%). Among the four geographic regions, only Seattle experienced a significant increase in unintentional injury death rates (30%). Males experienced an increase of 22%. White residents also experienced unintentional injury death rate increases (15%). Asian, Black and Hispanic residents experienced increases during select three-month periods, as did females, residents of South King County, and those 45-64 and 75+ years old.

## Stroke

In King County in 2020 there were 926 stroke related deaths compared to an average of 885 during 2017-2019. The King County wide stroke death rate in 2020 compared to 2017-2019 was unchanged. Males, Black and AIAN residents, and those 75+ experienced increase stroke death rates during select three-month periods. South King county experienced more than a 30% decrease in the stroke death rate during September through December.

## Diabetes

In 2020, 549 King County deaths were diabetes related compared to an average of 440 during 2017-2019. King County age-adjusted diabetes death rates increased 23% in 2020. The diabetes death rate increased among residents ages 75+ (22%) and among females (24%) and males (21%). East King County residents (46%), Hispanic residents (82%) and Asian residents (39%) also experienced increases in the diabetes death rate. During select three-month periods, increases were experienced by AIAN and white residents, those aged 25-44, 45-64, 65-74, and Seattle residents.

## Overdose

There were 452 King County overdose deaths (including fentanyl related deaths) in 2020 compared to an average of 362 during 2017-2020. Compared to the average of the previous three years, the King County overdose death rate increased 23%. When examining the data by three-month periods, overdose deaths increased February through August 2020 compared to the same time periods in the

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<sup>9</sup> <https://www.preventioninstitute.org/focus-areas/reducing-unintentional-injury>

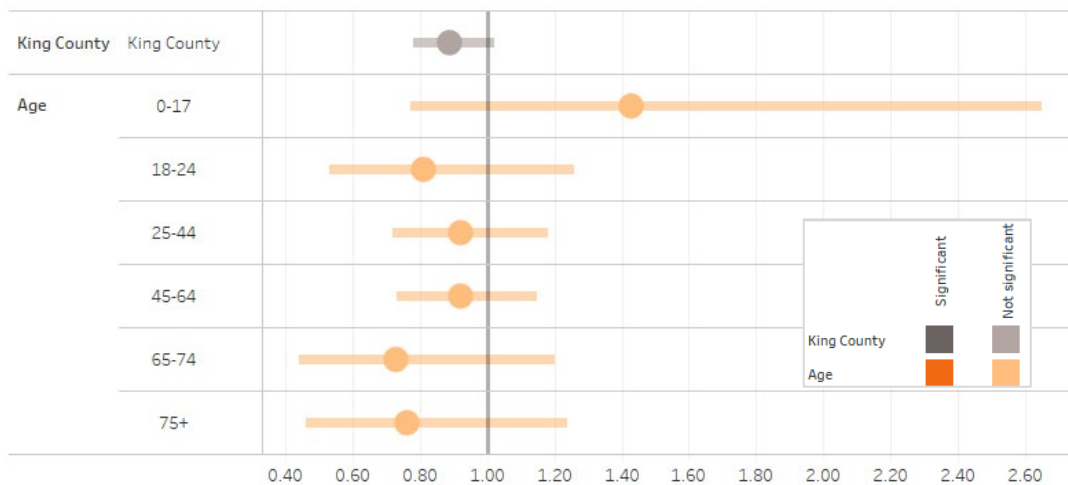
<sup>10</sup> <https://www.doh.wa.gov/Portals/1/Documents/Pubs/160-015-MCHDataRptUnintentionalInjury.pdf>

previous three years. The overdose death rate increased for those under age 18 (197%), adults ages 18-24 (103%), and 25-44 (23%). Seattle (27%) and South King County (21%) also experienced significant increases as did Blacks (59%) and Hispanics (47%). While there was no change among females, the overdose death rate increased 30% among males.

### Suicide

In 2020, there were 263 suicides in King County, compared to an average of 289 during 2017-2019. The King County age-adjusted suicide death rate during this time period did not change. However, there was a 26% decrease during April through June. Seattle was the only region that experienced a significant change in suicide death rates (-24%). White residents (-20%) and males (-17%) also experienced significant decreases. Hispanic residents experienced significant and substantial increases in their suicide death rate between May and August, but this should be interpreted with caution due to small numbers. Similarly, the 72% decrease in suicide death rates between March and May for those 18-24 was based on small numbers and should be interpreted with caution. In contrast to other age groups, youth suicide rates showed no evidence of decreasing during the pandemic.

*Figure 3. King County suicide death rate ratios by age, 2020 vs. 2017-2019*



### Firearms

There were 186 firearm related deaths in 2020 compared to an average of 181 during 2017-2019. The age-adjusted firearm death rates comparing 2020 to 2017-2019 did not change for King County as a whole or for any demographic group. The firearm death rate increased 132% among Black residents during the January-March time period (with no increase in other months) and by over 100% among Hispanic residents between June and September (with no increases observed in other time period in the year). Those 25-44 experienced an increase of 69% during July through September. Decreases were observed for those 46-64 (caution due to small numbers) and South King County residents during October through December. No other demographic group experienced significant increases or decreases in the firearm death rate during any time periods.

We further explored firearm related deaths to assess whether there were differences by manner of death. There were 77 firearm related homicides in 2020 compared to an average of 61 in 2017-2019,

resulting in a non-statistically significant increase of 24% in the age-adjusted death rate. In contrast, there was a non-statistically significant 11% decrease in the rate of firearm related suicides with 107 deaths in 2020 compared to an average of 118 in 2017-2019. There were too few unintentional firearm deaths to make a meaningful comparison between 2020 and 2017-2019.

### Traffic

There were 148 King County traffic related deaths in 2020 compared to an average of 138 during 2017-2019. Traffic deaths include deaths due to motor vehicle collisions, pedestrian deaths, and all bicycle related deaths. There were seven bicycle related deaths this year compared to an average of ten per year during 2017-2019 (no statistically significant difference). The King County age-adjusted traffic-related death rate did not change between 2017-2019 and 2020, but it did increase 39% during July through September. Though there were no significant complete year changes for any age groups, adults ages 25-44 years old experienced a 115% increase in the traffic related death rate during May through July 2020 and those aged 65-74 experienced a 146% increase during August through October. None of the racial and ethnic groups experienced significant yearlong changes in traffic death rates, however whites experienced significant decrease during January through March (caution due to small numbers) and increases during April through September. No other group experienced significant changes in the traffic death rate during any time periods.

### Drowning

In 2020, there were 54 drowning deaths in King County compared to an average of 33 during 2017-2019. Age-adjusted drowning death rates increased 61%, with the peak increase occurring during February through April (127%). Regarding age, drowning death rate increases were limited to adults ages 45-64 (156%). Increased drowning death rates were observed for males (85%), but not females. Whites were the only racial or ethnic group with a significant change in drowning deaths (67% increase). Residents of Seattle and South King County experienced increases during select three-month periods only.

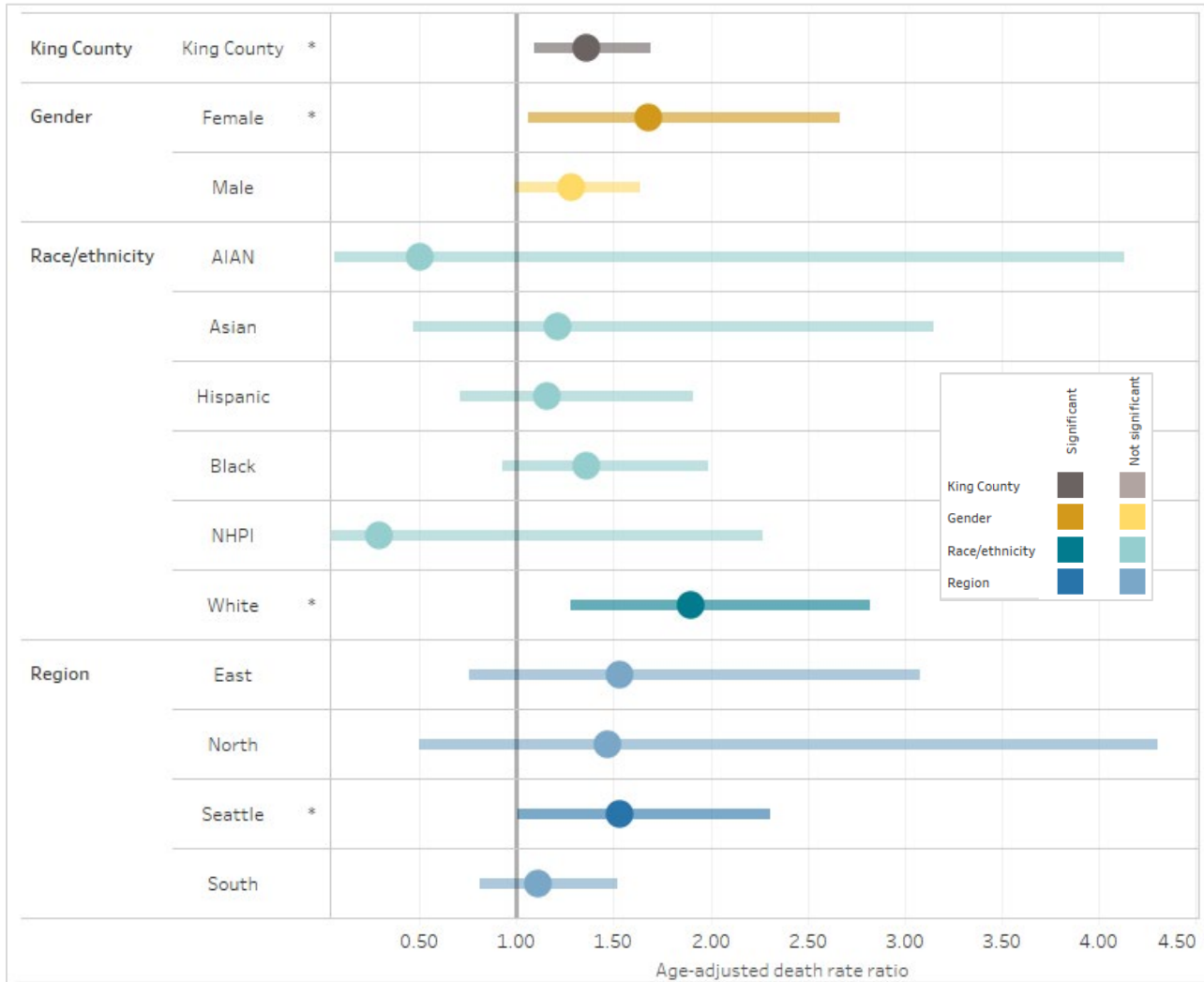
### Homicide

There were 114 King County homicides in 2020 compared to an average of 82 during 2017-2019.<sup>11</sup> In 2020, 68% of homicides were firearm related vs. 74% in 2017-2019. The King County age-adjusted homicide death rate increased 36% in 2020 compared to 2017-2020 (Figure 4). The peak time periods for increased homicide rates were March through May (72%) and July through September (69%). Significantly increased homicide death rates occurred among adults ages 25-44 (64%), with a peak increase of 149% during July through September. Those ages 18-24 and 45-64 also experienced increases during select three-month periods. Females experienced an overall increase of 68%, but males only experienced increases during March through September. Homicide death rates increased among whites (90% for the year, peak increase of 216% during May through July) and Blacks (from January through May). The 2020 homicide death rate increased 53% among Seattle residents and South King County residents experienced increases from February through May and decreases from October through December (caution due to small numbers). We were unable to sub-categorize homicides that were related to domestic violence or intimate partner violence.

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<sup>11</sup> Homicide and suicide deaths in this report may not match totals reported by other agencies that have jurisdiction over the occurrence of the incident, which means some people not residing in King County may be in their counts; this report is focused only on King County residents.

Figure 4. King County homicide death rates ratios by gender and race/ethnicity, 2020 vs. 2017-2019



## Limitations

This analysis has many limitations. Death counts should be considered preliminary and may change as death certificate and/or case investigations data are updated. Death certificates are typically issued within 10 days, but in rare circumstances may take up to one year or longer. Furthermore, our method for assigning cause of death based on text searches rather than ICD-10 codes has not been externally validated, which prohibits direct comparison with cause of death estimates published elsewhere. (See the [Technical Appendix](#) for details about the coding methods). Use of multiple causes of death rather than solely the underlying cause of death will also make comparison with external analyses difficult. These data are calculated for King County residents and do not account for deaths of non-residents that occurred within King County; therefore numbers in this report may differ slightly from other tallies.

Stratifying deaths for smaller populations (e.g., American Indian / Alaskan Native and Native Hawaiian / Pacific Islander) and less common causes of death (e.g., homicides) results in limited observations for our calculations. We have chosen to publish these estimates to unequivocally state that each death is



important. However, these death rate estimates will be less reliable, and caution should be used in their interpretation.

Race and ethnicity designations are determined separately for the numerators (deaths) and denominators (populations) and could bias the results of some populations in an unknown direction. See [Technical Appendix](#) for details.

This analysis was not hypothesis driven and statistical adjustments have not been made for multiple comparisons. Multiple comparisons increase the likelihood that reported statistically ‘significant’ findings are due to chance alone. Therefore, attention should be directed to the magnitude of the change and whether it makes sense in context, in addition to its statistical significance.

## Discussion

The data in this brief showed an increase in the number of deaths among King County residents in 2020 compared to prior years. Given previous literature around impacts of isolation, economic recession, changes in access to care, and effects on mental and physical health, understanding changing death patterns could provide helpful context in how to address and mitigate emerging health concerns. Death rates among communities of color remained higher than the King County average prior to 2020, and higher percent increases in 2020 death rates reflected exacerbated inequities. Please refer to our [online tool](#) for detailed analyses for individual demographic groups and causes of death.

The health care system saw large shifts in early 2020 as elective medical procedures were cancelled, emergency department use fell 37% in King County, and calls to King County Emergency Medical Service fell 25%. Increased death rates due to CVD could be related to delayed medical care,<sup>12</sup> increases in depression,<sup>13</sup> or lack of access to medication.

Although cancer related death rates were generally unchanged during the pandemic period, postponed or cancelled preventative screenings may lead to increased identification of cancers at more advanced stages in upcoming years. Public health departments and healthcare providers must ensure that screenings continue in accordance with recommended guidelines upon relaxation of COVID-19 mitigation measures.

In a typical year, Alzheimer’s is the 3<sup>rd</sup> or 4<sup>th</sup> leading cause of death in King County. For purposes of this brief, data were analyzed using a broader category of dementia. The stability of dementia death rates may, at first glance, appear unexpected since dementia risk factors generally correspond with COVID-19 risk factors and the potential for a shared underlying genetic susceptibility.<sup>14,15</sup> However, this analysis did not examine underlying comorbidities. It is therefore possible that the death rate among those with

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<sup>12</sup> Terkelsen CJ, Sørensen JT, Maeng M, Jensen LO, Tilsted HH, Trautner S, et al. System delay and mortality among patients with STEMI treated with primary percutaneous coronary intervention. *JAMA* 2010;304(7):763-71. doi: 10.1001/jama.2010.1139

<sup>13</sup> Harshfield EL, Pennells L, Schwartz JE, et al. Association Between Depressive Symptoms and Incident Cardiovascular Diseases. *JAMA*. 2020;324(23):2396–2405. doi:10.1001/jama.2020.23068

<sup>14</sup> Korszyn AD. Dementia in the COVID-19 Period. *J Alzheimers Dis*. 2020;75(4):1071-1072. doi:10.3233/JAD-200609

<sup>15</sup> Hariyanto, T.I., Putri, C., Situmeang, R.F.V. et al. Dementia is a predictor for mortality outcome from coronavirus disease 2019 (COVID-19) infection. *Eur Arch Psychiatry Clin Neurosci* (2020). <https://doi.org/10.1007/s00406-020-01205-z>

dementia increased, while the dementia death rate itself remained unchanged. Unfortunately, we are unable to examine this with our current data.

The rise in unintentional injury related deaths was not unexpected given stay at home orders and the fact that nearly half of medically reported injuries occur at home.<sup>16</sup> PHSKC also observed increases in the number of unintentional overdoses and drownings.

Diabetes is a known risk factor for severe COVID-19 and related death.<sup>17</sup> Compared to people without diabetes, those with type 1 and type 2 diabetes have a 2.9 and 1.8 times increase in the odds for in hospital COVID-19 death, respectively.<sup>18</sup> In addition, glycemic control may have become more challenging for those with reduced access to nutritionally appropriate foods, lack of access to health care and those increasingly unable to afford insulin treatment. Poorly managed diabetes raises susceptibility to COVID-19 and can lead to diabetic shock, coma, and death.

It is important to note that the increase in overdose deaths between 2017-2019 and 2020 reflects a pre-existing trend and cannot be attributed to COVID-19 or any mitigation measures. The sharp increase among young adults 18 to 24 is likely a continuation of increases in fentanyl related deaths. Please see the [King County Overdose Deaths](#) dashboard for additional details.

While many have raised concerns that documented increases in depression and anxiety<sup>19</sup> would lead to increased suicide ("deaths of despair"), in King County and other places, an increase has not yet been observed in adults.<sup>20</sup> Some theories to explain this include that there may be less opportunity for individuals to attempt suicide if they are spending more time at home with their households. It is also possible that during this challenging time communities have followed the guidance of the many news stories and public health messages regarding the importance of engagement and emotional health. In addition, altruism, which is a contributor to resiliency and emotional health,<sup>21</sup> may have helped some community members find purpose and counteract despondency. Finally, it possible that expansion of telehealth has enabled increased access to mental health services for some populations. Research shows suicide may be a delayed response after a disaster.<sup>22</sup> Therefore, we are monitoring preliminary indicators of suicide, including ideation and attempts, to look for indications of early change.<sup>23</sup> The

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<sup>16</sup> Chen LH, Warner M, Fingerhut L, Makuc D. Injury episodes and circumstances: National Health Interview Survey, 1997–2007. *Vital Health Stat.* 2009;10(241) National Center for Health Statistics. 1–64.

<sup>17</sup> <https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-with-medical-conditions.html>. Accessed December 16, 2020.

<sup>18</sup> Barron E, Bakhai C, Kar P, Weaver A, Bradley D, Ismail H, et al. Associations of type 1 and type 2 diabetes with COVID-19-related mortality in England: a whole-population study. *Lancet Diabetes Endocrinol.* 2020 Oct;8(10):813-822. doi: 10.1016/S2213-8587(20)30272-2.

<sup>19</sup> <https://kingcounty.gov/depts/health/covid-19/data/~media/depts/health/communicable-diseases/documents/C19/report-behavioral-health-needs.ashx>

<sup>20</sup> Jeremy S. Faust, Sejal B. Shah, Chengang Du, Shu-Xia Li, Zhenqiu Lin, Harlan M. Krumholz. Preprint. doi: <https://doi.org/10.1101/2020.10.20.20215343>

<sup>21</sup> Charney DS. Psychobiological mechanisms of resilience and vulnerability: implications for successful adaptation to extreme stress. *Am J Psychiatry.* 2004;161(2):195-216. doi: 10.1176/appi.ajp.161.2.195.

<sup>22</sup> [https://www.samhsa.gov/sites/default/files/dtac/srb\\_sept2015.pdf](https://www.samhsa.gov/sites/default/files/dtac/srb_sept2015.pdf)

<sup>23</sup> <https://kingcounty.gov/depts/health/covid-19/data/~media/depts/health/communicable-diseases/documents/C19/report-behavioral-health-needs.ashx>

youth suicide rate, which had been increasing in recent years, did not follow this same declining pattern, and may warrant further investigation and close observation.

Firearm deaths remained stable overall. However, additional analyses by manner of death revealed that this was due to a decrease in firearm-related suicides that offset an increase in firearm-related homicides.<sup>24</sup> In response to firearm-related homicides, Zero Youth Detention (ZYD) convened more than 40 system and community partners to develop a comprehensive "Regional Safety and Wellbeing Plan." ZYD's goal is to implement long-term, sustainable community-based intervention, prevention, and restoration strategies, while also meeting the immediate needs of youth and families disproportionately impacted by violence in King County.

The stability in traffic related death rates was unexpected given the media's coverage of national decreases in traffic related deaths.<sup>25</sup> Early on in the mitigation phase, we saw a decrease in the total number of car crashes, but the number and percent of fatal crashes remained high.<sup>26</sup> During the last three months of 2020, traffic volumes have generally remained around 80-85% of pre-pandemic volume. Please refer to the [King County Daily Traffic](#) visualization tool for additional information on changes in traffic patterns, mobility, and traffic collisions.

The relative increase in the homicide rate was second only to drowning and mirrors significant increases in homicides observed in other jurisdictions.<sup>27,28</sup> While white King County residents experienced the highest relative *increase* in homicide rates in 2020, the highest burden of homicide deaths continue to be experienced by Black, Hispanic, AIAN, and NHPI King County residents. Although we were unable to assess which homicides were related to domestic violence or intimate partner violence, our previous [work](#) found that domestic violence homicides nearly doubled in 2020 and local news reported an increase in domestic violence homicide.<sup>29</sup> Note that homicide counts may differ between this brief and other reports of homicide from law enforcement because this brief reports deaths among King County residents regardless of where the death occurred, whereas law enforcement agencies investigate homicides that occur within their jurisdiction.

Several other jurisdictions reported early increases in drowning deaths in 2020, many of which were associated with the anecdotal reports of swimming without lifeguards present. Reviews of drowning deaths often come after annualized files are released, but news articles across the United States<sup>30,31,32</sup> and Canada<sup>33</sup> saw record numbers of drownings in the early spring and summer 2020 following the end

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<sup>24</sup> <https://www.seattletimes.com/seattle-news/crime/homicides-assaults-with-firearms-spike-in-king-county-reflecting-national-trend-prosecutors-say/>

<sup>25</sup> <https://www.reuters.com/article/us-health-coronavirus-usa-traffic-exclus/u-s-traffic-deaths-fell-after-coronavirus-lockdown-but-drivers-got-riskier-idUSKBN26M6KR>

<sup>26</sup> <https://www.kingcounty.gov/depts/health/covid-19/data/impacts/~media/depts/health/communicable-diseases/documents/C19/covid-impacts-traffic-brief.ashx>

<sup>27</sup> <https://www.washingtonpost.com/nation/2020/11/21/murder-rises-in-pandemic/>

<sup>28</sup> <https://covid19.counciloncj.org/2020/09/26/impact-report-covid-19-and-crime/>

<sup>29</sup> <https://patch.com/washington/bellevue/domestic-violence-homicides-have-nearly-doubled-king-county>

<sup>30</sup> <https://www.kjrh.com/news/local-news/drownings-in-oklahoma-are-rising>

<sup>31</sup> <https://www.freep.com/story/news/local/michigan/2020/08/19/great-lakes-drownings-michigan-holland/5606488002/>

<sup>32</sup> <https://www.msn.com/en-us/health/wellness/number-of-drowning-deaths-increased-in-arizona/ar-BB157hEY>

<sup>33</sup> <https://www.cbc.ca/news/canada/ottawa/drowning-prevention-ottawa-change-focus-1.5676181>

of stay-at-home orders. The King County Sheriff Marine Office also observed an increase in new boat purchasers and users; they noted that these inexperienced boaters and their passengers led to record injuries on the water and worse outcomes in body recovery situations.<sup>34</sup>

The increase in deaths in King County residents in 2020 is not due solely to COVID-19 and the burden of increased deaths has not been borne equally across our communities. This unequal burden may reflect inequitable distribution of risk and protective factors, delayed medical care, economic hardship, or emotional distress. PHSKC will continue to monitor the patterns in leading causes of death and outcomes potentially associated with COVID-19 mitigation measures and partner towards the improvement of outcomes and reduction of inequities.

#### Technical Notes

We analyzed deaths among King County residents from 2017-2020 using death certificate data from the Washington State Department of Health Center for Health Statistics. We compared provisional deaths occurring in 2020 to deaths that occurred during the same time period of 2017-2019. Since we were interested in causes of death that may have been indirectly impacted by COVID-19, all analyses were performed without regard to the COVID-19 status of the decedent. To provide the most current possible analysis, we defined over two dozen causes of death using free text searches and the recorded manner of death rather than the International Classification of Disease (ICD)-10 codes because ICD-10 codes were not available for the 2020 death data.

Please refer to our technical appendix for complete details: <https://www.kingcounty.gov/depts/health/covid-19/data/impacts/~media/depts/health/communicable-diseases/documents/C19/changes-in-death-rates-tech-appendix.ashx>

#### Resources

- Guidance related to COVID-19: <https://www.kingcounty.gov/depts/health/covid-19.aspx>
- Summary Report on Deaths Associated with COVID-19 in 2020: <https://www.kingcounty.gov/depts/health/covid-19/data/~media/depts/health/communicable-diseases/documents/C19/deaths-associated-with-covid-19-2020-year-end.ashx>

#### Suggested citation

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For more information, see: <https://www.kingcounty.gov/covid/impacts>

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<sup>34</sup> Personal communication, Tony Gomez, PHSKC.