Seattle Office of City Auditor

MEMORANDUM

Date: October 18, 2021

To: City Councilmember Lisa Herbold, Chair, Public Safety and Human Services Committee

From: David G. Jones, City Auditor

RE: Gun Safe Storage Ordinance: Statistical Report on 2019 Data and Updated 2017 Data

Ordinance 125620 directs the Seattle City Auditor to work with Public Health – Seattle & King County (PHSKC) and the Chief of the Seattle Police Department (SPD) to produce five annual reports containing descriptive statistics on:

1. Firearm-related hospitalizations and deaths in Seattle for the overall population and among youth (i.e., persons less than 18 years in age), and
2. Guns reported to or recorded by SPD as stolen in Seattle.

Although it was not required by the ordinance, our office and PHSKC concluded that it would be helpful to provide baseline information on these two topics covering the year before the ordinance took effect. Therefore, we issued a baseline report on October 2, 2019 that provided information from 2017. For that report, PHSKC obtained and analyzed data on firearm-related hospitalizations and deaths from the Washington State Department of Health (DOH), and SPD used its records to generate the data on guns reported as stolen.

This report is the first of the five reports required by the ordinance and covers data from 2019[1] and provides updated 2017 baseline data on firearm-related hospitalizations and deaths.

According to the timeline specified in the ordinance, the report on 2019 data is due to the City Council's Public Safety and Human Services Committee by October 18, 2021.

[1] Ordinance 125620 was signed by the Mayor on July 18, 2018 and took effect 30 days later. Given that the ordinance did not take effect until more than halfway through 2018 and because PHSKC and DOH have data systems based on the calendar year, we decided to have the baseline report cover 2017 data and this first annual report cover 2019 data.

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Key Takeaways

According to DOH data processed by PHSKC, firearm deaths among Seattle residents decreased from 54 in 2017 to 36 in 2019. The rate of firearm deaths was 6.5 per 100,000 Seattle residents in 2017 compared to 4.7 per 100,000 in 2019. However, the decline is not yet statistically significant because the confidence intervals overlap.

Firearm related non-fatal hospitalizations among Seattle residents increased from 45 in 2017 to 60 in 2019. This equates to a rate of 5.7 firearm non-fatal hospitalizations per 100,000 Seattle residents in 2017 compared to 7.2 non-fatal firearm hospitalizations per 100,000 Seattle residents in 2019. However, these figures are not yet statistically different because the confidence intervals overlap.

According to data provided by SPD, the number of guns reported as stolen increased from 332 in 2018 to 398 in 2019.

Future Reports

Future reports will continue to have a time lag because the reporting requirements of the ordinance do not match the way that PHSKC and DOH normally collect and report data. Both PHSKC and DOH have data systems that are based on the calendar year. Therefore, PHSKC needs to provide the data on a calendar year basis rather than the non-calendar year schedule (e.g., August 2018 to August 2019) suggested by the ordinance. There is also a data lag that is a function of the State of Washington's data collection and processing systems that includes: 1) obtaining out-of-state death certificates for Washington state residents who die out-of-state, and 2) a reporting period of 45 days after each calendar month for hospitals to submit inpatient hospitalization data to DOH.

Therefore, PHSKC reported that the approximate 18 to 19-month lag in obtaining and analyzing DOH data would continue throughout the duration of the reporting period specified by the ordinance. The following table shows the effect of this lag on future reports' approximate delivery dates.

Period Covered by Report	Estimated Period Report Will be Provided to City Council
2020	3rd Quarter 2022
2021	3rd Quarter 2023
2022	3rd Quarter 2024
2023	3rd Quarter 2025

Updated Seattle 2017 Firearm-related Hospitalizations and Deaths

The updated information for 2017 in the table below is indicated by cells that are highlighted.

2017 Firearm Deaths and Non-fatal Hospitalizations — Seattle, WA – *updated as of 7/21/21 & 7/27/21*

	All Ages — Seattle, WA, 2017						Youth (< 18 years) — Seattle, WA, 2017				
	Number	Population	Rate	Lower CI	Upper CI		Number	Population	Rate	Lower CI	Upper CI
Firearm deaths											
Total (all firearm deaths)	54	714,216	6.5	4.8	8.8		0	103,424	0	0	2.9
Homicide	14	714,216	1.5	0.8	2.9		0	103,424	0	0	2.9
Suicide	38	714,216	4.8	3.3	6.8		0	103,424	0	0	2.9
Other (unintentional, undetermined, legal intervention)	2	714,216	0.2^	0	1.3		0	103,424	0	0	2.9
All injury deaths	405	714,216	52.4	47.2	58.1		7	103,424	6.8^	2.7	14.0
Firearm non-fatal hospitalizations											
Total (all firearm non-fatal hospitalizations)	45	671,421	5.7	4.1	7.9		1	96,262	1.0^	0	5.8
Assault	20	671,421	2.7	1.6	4.4		0	96,262	0	0	3.1
Unintentional	18	671,421	2.2	1.3	3.8		1	96,262	1.0^	0	5.8
Other (self-inflicted, undetermined, legal intervention)	7	671,421	0.8^	0.3	2.1		0	96,262	0	0	3.1
All injury non-fatal hospitalizations* (updated 7/27/21)	4,341	671,347	642.5	622.9	662.8		169	96,255	175.6	150.1	204.1

Notes:

In Seattle in 2017, suicide by firearm was fatal around 95% of the time.

Non-fatal hospitalizations exclude instances of deaths that occur while hospitalized and reflect instances of hospitalizations and not distinct injured individuals or injuries.

Seattle defined by Health Reporting Areas for death data and ZIP codes for non-fatal hospitalization data.

CI = 95% Confidence Interval. The CI is the range of values that include the true rate 95% of the time.

Rate is per 100,000 Seattle residents and age-adjusted to 2000 U.S. population.

Deaths and non-fatal hospitalizations for all injuries are provided to give a sense of the magnitude of firearm injuries in comparison to all injury mechanisms.

^Unstable rate; interpret with caution, sample size is small, so estimate is imprecise.

*Due to ICD-10-CM coding changes for 2016 forward, counts and rates for all injury non-fatal hospitalizations are updated in the Washington State Community Health Assessment Tool hospitalization injury module to account for the following injury mechanisms: Fire/Burn, Bite/Sting, Natural Environment, Overexertion, Not Specified, Suffocation, Other Specified, Poisoning, Poisoning-Drug, and Poisoning-Nondrug.

Data Sources:
Deaths: Washington State Department of Health, Center for Health Statistics, Death Certificate Data, 2017, Community Health Assessment Tool (CHAT), 6/2019.
Nonfatal hospitalizations: Washington State Department of Health, Center for Health Statistics, WA Hospital Discharge Data, Comprehensive Hospitalization Abstraction Reporting System (CHARS), 2017, Community Health Assessment Tool (CHAT), 6/2019.
Population estimates: Washington State Office of Financial Management, Forecasting Division, single year intercensal estimates 2001-2009; 2011 – 2018, Community Health Assessment Tool (CHAT), 6/2019. For total nonfatal injury hospitalizations: Washington State Office of Financial Management, Forecasting Division, single year intercensal estimates 2001-2019, Community Health Assessment Tool (CHAT), March 2020.

Prepared by: Public Health — Seattle & King County, Assessment, Policy Development & Evaluation, 7/27/2021.

PHSKC updated previously provided 2017 data for all ages and youth under 18 years, as indicated by cells that are highlighted in the table above, to:

a. Update, for completeness, the total non-fatal injury hospitalizations based on changes to DOH's online data query system to address ICD-10-CM coding changes. For 2016 and forward counts and rates for total injury non-fatal hospitalizations were corrected to include the following injury mechanisms: Fire/Burn, Bite/Sting, Natural Environment, Overexertion, Not Specified, Suffocation, Other Specified, Poisoning, Poisoning-Drug, and Poisoning-Nondrug. Firearm non-fatal hospitalizations are not affected.
    i. The table includes deaths and non-fatal hospitalizations for (total) all injuries combined to give a sense of the magnitude of firearm injuries in comparison to all other injury mechanisms.
b. Correct a data entry error from 'other' intent to 'unintentional' intent for non-fatal firearm injuries for youth under 18 years, and
c. Align reporting of confidence intervals with DOH guidelines for death rates.

Seattle 2019 Firearm-related Hospitalizations and Deaths

The table below provides the data requested in the ordinance covering 2019 on firearm hospitalizations and deaths for the overall and youth populations in Seattle.

PHSKC summarized its findings from the 2019 data as follows:

1. In 2019 firearm suicides accounted for 69 percent of all firearm deaths among Seattle residents, which is similar to 2017 when 70 percent of all firearm deaths were from suicide.
2. As in 2017, among Seattle residents in 2019, the firearm suicide death rate was three times higher than the firearm homicide death rate.
3. There were no firearm deaths among Seattle youth under 18 years in 2017 or 2019.
4. Assaults in 2019 accounted for 38 percent (compared to 44 percent in 2017) of the non-fatal firearm hospitalizations among Seattle residents.
5. Unintentional firearm injuries accounted for 38 percent of the non-fatal firearm hospitalizations among Seattle residents in 2019 compared to 40 percent in 2017.
6. Among Seattle youth under 18 years, there was one non-fatal firearm hospitalization in both 2017 and 2019.
7. While rates and counts of total, homicide, and suicide **firearm deaths** among Seattle residents decreased in 2019 compared to 2017 they are not yet statistically different based on comparison of confidence intervals. The confidence interval provides the range of values for our estimate given that all injury deaths might not be captured. When confidence interval ranges don't overlap, there is a statistical difference.
8. Rates and counts of total, assault, and unintentional **firearm nonfatal hospitalizations** among all Seattle residents were higher in 2019 compared to 2017; however, they are not yet statistically different because the confidence intervals overlap.

While PHSKC presents small numbers for completeness, as approved by DOH, it is important to keep in mind that estimates based on small numbers are unstable. This means that an increase of two or three events can cause the rate to appear high. DOH considers rates based on fewer than 17 events to be unstable. Because rates based on small numbers can fluctuate from year-to-year, it is important to interpret these rates with caution. One interpretation is to look at whether the confidence intervals for the rates overlap. If they do, then the rates are not statistically different.

2019 Firearm Deaths and Non-fatal Hospitalizations — Seattle, WA

	All Ages — Seattle, WA, 2019						Youth (< 18 years) — Seattle, WA, 2019				
	Number	Population	Rate	Lower CI	Upper CI		Number	Population	Rate	Lower CI	Upper CI
Firearm deaths											
Total (all firearm deaths)	36	747,824	4.7	3.3	6.8		0	105,494	0	0	2.8
Homicide	8	747,824	1.1^	0.4	2.4		0	105,494	0	0	2.8
Suicide	25	747,824	3.3	2.1	5.1		0	105,494	0	0	2.8
Other (unintentional, undetermined, legal intervention)	3	747,824	0.4^	0.1	1.5		0	105,494	0	0	2.8
All injury deaths	431	747,824	55.2	50.0	61.0		10	105,494	9.5^	4.6	17.4
Firearm non-fatal hospitalizations											
Total (all non-fatal firearm hospitalizations)	60	704,274	7.2	5.4	9.7		1	98,259	1.0^	0	5.7
Assault	23	704,274	2.8	1.7	4.6		0	98,259	0	0	3.8
Unintentional	23	704,274	2.8	1.7	4.6		1	98,259	1.0^	0	5.7
Other (self-inflicted, undetermined, legal intervention)	14	704,274	0.6	0.9	3.1		0	98,259	0	0	3.8
All injury non-fatal hospitalizations	4,212	704,274	608.9	589.9	628.5		173	98,259	176.1	150.8	204.4

Notes:

In Seattle in 2019, suicide by firearm was fatal around 83% of the time.

Non-fatal hospitalizations exclude instances of deaths that occur while hospitalized and reflect instances of hospitalizations and not distinct injured individuals or injuries. Using a new methodology to compute total injury nonfatal hospitalizations, we have discovered previously unidentified hospitalizations and are amending our methods going forward to better capture this information and will use the new methodology as our new standard approach.

Seattle defined by Health Reporting Areas for death data and ZIP codes for non-fatal hospitalization data.

CI = 95% Confidence Interval. The CI is the range of values that include the true rate 95% of the time.

Rate is per 100,000 Seattle residents and estimates for all ages is age-adjusted to 2000 U.S. population.

Deaths and non-fatal hospitalizations for all injuries are provided to give a sense of the magnitude of firearm injuries in comparison to all injury mechanisms

^ Unstable rate; interpret with caution, sample size is small, so estimate is imprecise.

Data Sources:

Deaths: Washington State Department of Health, Center for Health Statistics, Death Certificate Data, 2017, Community Health Assessment Tool (CHAT), 6/2019.

Nonfatal hospitalizations: Washington State Department of Health, Center for Health Statistics, WA Hospital Discharge Data, Comprehensive Hospitalization Abstraction Reporting System (CHARS), 2017, Community Health Assessment Tool (CHAT), 6/2019.

Population estimates: Washington State Office of Financial Management, Forecasting Division, single year intercensal estimates 2001-2019, Community Health Assessment Tool (CHAT), March 2020.

Prepared by: Public Health — Seattle & King County, Assessment, Policy Development & Evaluation, 08/2/2021.

SPD Data on Stolen Guns

According to data provided by SPD, the number of guns reported as stolen increased from 332 in 2018 to 398 in 2019. SPD noted that as of May 6, 2019, SPD's Records Management System was updated, which resulted in changes in stolen firearms reports. An SPD official stated that SPD does not believe these changes affected the overall count of stolen guns. Major changes included:

- The Report Created Date on the Property Report with which the qualifying stolen gun item record is associated, was used as the qualifying date instead of Submitted date as seen in previous reports.
- The National Crime Information Center (NCIC) firearm codes are not currently available because the vendor for SPD's Records Management System is working to include the codes so that they are aligned with national reporting standards. The NCIC Gun Type field was used to distinguish qualifying Stolen Firearm records (guns), from Stolen Firearm records that document stolen ammunition, stolen BB/pellet guns, gas/air guns, and unknown firearm types.

Please contact me if you have any questions about the information provided in this memo.