



**KENTUCKY INJURY PREVENTION
AND RESEARCH CENTER**

Firearm Injuries in Kentucky, 2017–2023

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Introduction

This report presents the burden of emergency department (ED) visits and inpatient hospitalizations due to firearm injuries among Kentucky residents. This report is supported by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as part of Cooperative Agreement Number NU17CE010182 totaling \$250,000 with 0% financed with nongovernmental sources. The contents are those of the authors and do not necessarily represent the official views of, nor an endorsement by, CDC, HHS, or the U.S. government. For more information, please visit CDC.gov.

Events represent encounters of care and may be greater than the total number of Kentucky residents who visited an ED or inpatient hospital. Non-Kentucky residents visiting a Kentucky ED or inpatient hospital are not included in the counts of events. This report also does not include events for Kentucky residents who visited an ED or inpatient hospital located outside of the Commonwealth. These limitations result in a likely undercount of all firearm ED or inpatient hospital visits that occurred in Kentucky or among Kentucky residents.

Numbers less than five and rates based on numbers less than 10 were suppressed in accordance with state data management policy. Rates based on numbers less than 20 are unstable and should be interpreted with caution. Population estimates are based on the U.S. Census Bureau's Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin.

Definitions

The data source for the Kentucky resident data in this report is the Kentucky Outpatient Services Database Files and Inpatient Hospitalization Claims Files, Office of Data and Analytics, Cabinet for Health and Family Services. Data are provisional and subject to change. The definitions used in this report conform to the standards set by the Council of State and Territorial Epidemiologists for identifying injury events using hospital records. The identification of a firearm-related ED or inpatient hospital visit was based on ICD-10-CM codes listed under any diagnosis category, not solely on the primary diagnosis. Firearm-related injuries of all intents (i.e., unintentional, suicide, homicide, and undetermined) were included in this report, unless otherwise stated. Only events representing initial encounters were included in this report, as determined by a seventh character in the ICD-10-CM code of "A" or missing. The following ICD-10 codes were used to identify firearm-related injuries:

ICD-10-CM codes	Description
W32, W33, W34.00, W34.09, W34.10, W34.19	Accidental discharge or malfunction of firearm
X72, X73, X74.8, X74.9	Intentional self-harm by firearm
X93, X94, X95.8, X95.9, Y38.4	Assault by firearm
Y22, Y23, Y24.8, Y24.9	Firearm discharge of undetermined intent
Y35.00–Y35.03, Y35.09, Y36.42, Y36.43, Y36.92, Y37.42, Y37.43, Y37.92	Legal intervention involving firearm discharge

Executive Summary

- A total of **1,420** firearm-related ED visits and inpatient hospitalizations occurred in 2023.
- Since 2021 the numbers of firearm-related ED visits and inpatient hospitalizations have been decreasing.
- There was a total of **763** visits among non-Hispanic white residents in 2023.
- There was a total of **595** visits among non-Hispanic Black residents in 2023.
- The age group with the most firearm-related injury visits in 2023 were **15–24-year-olds**.
 - Numbers of visits among those aged 15–24: **470**
- The majority of firearm-related injuries (**1,004** ED visits and inpatient hospitalizations in 2023) were **unintentional**.
- The **Kentuckiana Regional Planning and Development Agency (KIPDA)** Area Development District (ADD) had the highest number and rate of firearm-related injury visits at **805** visits and a rate of **78.9** per 100,000 population. It is important to acknowledge that this observation in the KIPDA ADD is influenced by the high count and rate of firearm-related injuries in Jefferson County.

Table 1: Demographics of firearm injury counts among Kentucky residents treated at Kentucky ED and inpatient facilities, 2019–2023

	2019	2020	2021	2022	2023	Total
Sex						
Male	1,107	1,588	1,696	1,276	1,193	6,860
Female	200	321	329	262	224	1,336
Race						
White	782	1,066	1,014	780	763	4,405
Black	500	815	956	706	595	3,572
Other	25	28	55	53	62	223
Age Category						
14 and under	18	39	40	43	43	183
15–24	435	632	661	494	470	2,692
25–34	327	523	551	367	322	2,090
35–44	194	306	332	284	240	1,356
45–54	135	189	213	159	160	856
55–64	105	108	115	100	86	514
65+	73	73	86	73	78	383
Total	1,307	1,909	2,025	1,539	1,420	8,200

Table 2: Counts of firearm injuries by intent among Kentucky residents treated at Kentucky ED visits and inpatient facilities, 2019–2023

	2019	2020	2021	2022	2023
Unintentional	819	1,294	1,407	997	1,004
Assault	366	499	443	393	288
Self-Harm	83	72	98	87	88
Undetermined	27	31	62	46	31
Legal Intervention	12	13	15	16	8

Table 3: Demographics of firearm injury counts by intent among Kentucky residents treated at Kentucky ED and inpatient facilities in 2023

	Unintentional	Self-Harm	Assault
Sex			
Male	849	73	238
Female	154	14	50
Race			
White	543	76	122
Black	420	6	153
Other	41	6	13
Age Category			
14 and under	31	*	7
15–24	335	18	105
25–34	228	15	71
35–44	170	16	48
45–54	105	12	37
55–64	63	-	11
65+	55	16	6

Counts greater than zero but less than five are suppressed in accordance with state data management policy and indicated by an asterisk (). In some instances, the second lowest number also may be censored to protect a suppressed value, which is indicated by a dash (-).

Table 4: Demographics of firearm injury counts by intent among Kentucky residents seen during ED visits and inpatient hospitalizations, 2019–2023

	Unintentional	Self-Harm	Assault	Undetermined	Legal Intervention
Sex					
Male	4,646	353	1,644	155	-
Female	873	74	345	41	*
Race					
White	3,098	368	805	86	48
Black	2,271	48	1,131	105	16
Other	152	12	53	6	0
Age Category					
17 and under	694	24	206	27	-
18–24	1,370	61	555	54	9
25–39	1,860	115	739	55	31
40–59	1,178	127	422	54	20
60+	419	101	67	7	*

Counts greater than zero but less than five are suppressed in accordance with state data management policy and indicated by an asterisk (). In some instances, the second lowest number also may be censored to protect a suppressed value, which is indicated by a dash (-).

Table 5: Count and rate⁺ of firearm injuries by year among Kentucky residents treated at Kentucky ED visits and inpatient facilities by Area Development Districts from 2019 to 2023

	2019	2020	2021	2022	2023
Barren River	51	54	50	50	48
	16.5 ⁺	17.3	15.8	15.6	15.0
Big Sandy	46	67	56	28	14
	33.1	47.9	40.6	20.6	10.3
Bluegrass	287	348	314	242	227
	34.5	41.7	37.6	28.9	27.1
Buffalo Trace	9	8	10	5	11
	*	*	17.9	*	19.7
Cumberland Valley	69	93	95	70	68
	30.0	40.5	41.6	30.7	29.8
FIVCO	11	16	8	5	10
	8.4	11.9	*	*	7.5
Gateway	12	19	13	18	15
	14.1	22.2	15.2	20.9	17.5
Green River	43	49	59	52	37
	19.9	22.6	27.4	24.2	17.2
KIPDA	518	925	1,107	805	731
	51.3	90.3	108.4	78.9	71.7
Kentucky River	38	71	73	39	33
	36.7	66.9	69.6	37.8	32.0
Lake Cumberland	56	65	56	56	53
	26.7	31.5	27.0	26.9	25.5
Lincoln Trail	68	84	76	68	69
	24.4	29.9	26.8	24.0	24.3
Northern Kentucky	30	27	38	32	23
	6.5	5.8	8.1	6.8	4.9
Pennyrile	41	44	30	38	40
	19.3	20.5	14.0	17.7	18.6

Purchase	28	39	40	31	41
	14.3	19.8	20.3	15.8	20.9

†Rates are per 100,000 population.

Counts greater than zero but less than five and rates based on numbers less than 10 are suppressed in accordance with state data management policy and indicated by an asterisk (). In some instances, the second lowest number also may be censored to protect a suppressed value, which is indicated by a dash (-). Rates based on numbers less than 20 are unstable and should be interpreted with caution.

Table 6: Count and rate⁺ of firearm injuries by intent among Kentucky residents treated at Kentucky ED and inpatient facilities by Area Development Districts from 2019 to 2023

	Unintentional	Self-harm/ undetermined	Assault/legal intervention	Total
Barren River	196	20	37	253
	12.4 ⁺	1.3	2.3	16.0
Big Sandy	149	17	45	211
	21.6	2.5	6.5	30.6
Bluegrass	812	120	486	1,418
	19.4	2.9	11.6	33.9
Buffalo Trace	30	8	5	43
	10.8	*	*	15.4
Cumberland Valley	304	31	60	395
	26.6	2.7	5.2	34.5
FIVCO	41	*	-	50
	6.2	*	-	7.5
Gateway	56	11	10	56
	13.1	2.6	2.3	13.1
Green River	141	27	72	240
	13.1	2.5	6.7	22.3
KIPDA	2,722	253	1,110	4,085
	53.4	5.0	21.8	80.2
Kentucky River	179	23	52	254
	34.4	4.4	10.0	48.8
Lake Cumberland	205	33	48	286
	19.7	3.2	4.6	27.5
Lincoln Trail	278	30	57	365
	19.7	2.1	4.0	25.9
Northern Kentucky	117	15	18	150
	5.0	0.6	0.8	6.4
Pennyrile	149	19	25	193
	13.9	1.8	2.3	18.0
Purchase	142	16	21	179
	14.4	1.6	2.1	18.2

†Rate is per 100,000 population.

Counts greater than zero but less than five and rates based on numbers less than 10 are suppressed in accordance with state data management policy and indicated by an asterisk (). In some instances, the second lowest number also may be censored to protect a suppressed value, which is indicated by a dash (-). Rates based on numbers less than 20 are unstable and should be interpreted with caution.

Figure 1: Rate of firearm injuries among Kentucky residents treated in Kentucky ED and inpatient facilities by Area Development Districts, 2019-2023

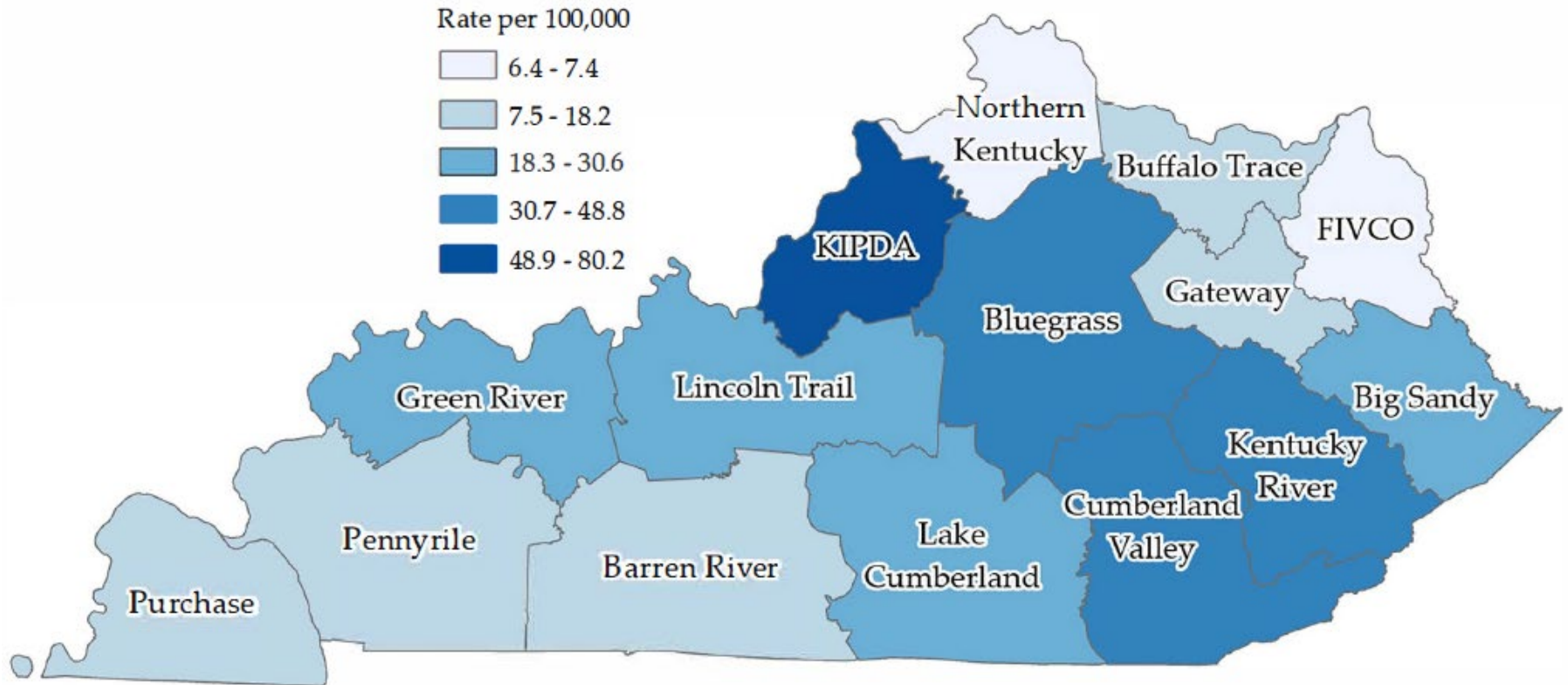


Figure 2: Rate of unintentional firearm injuries among Kentucky residents treated in Kentucky ED visits and inpatient facilities by Area Development Districts, 2019-2023

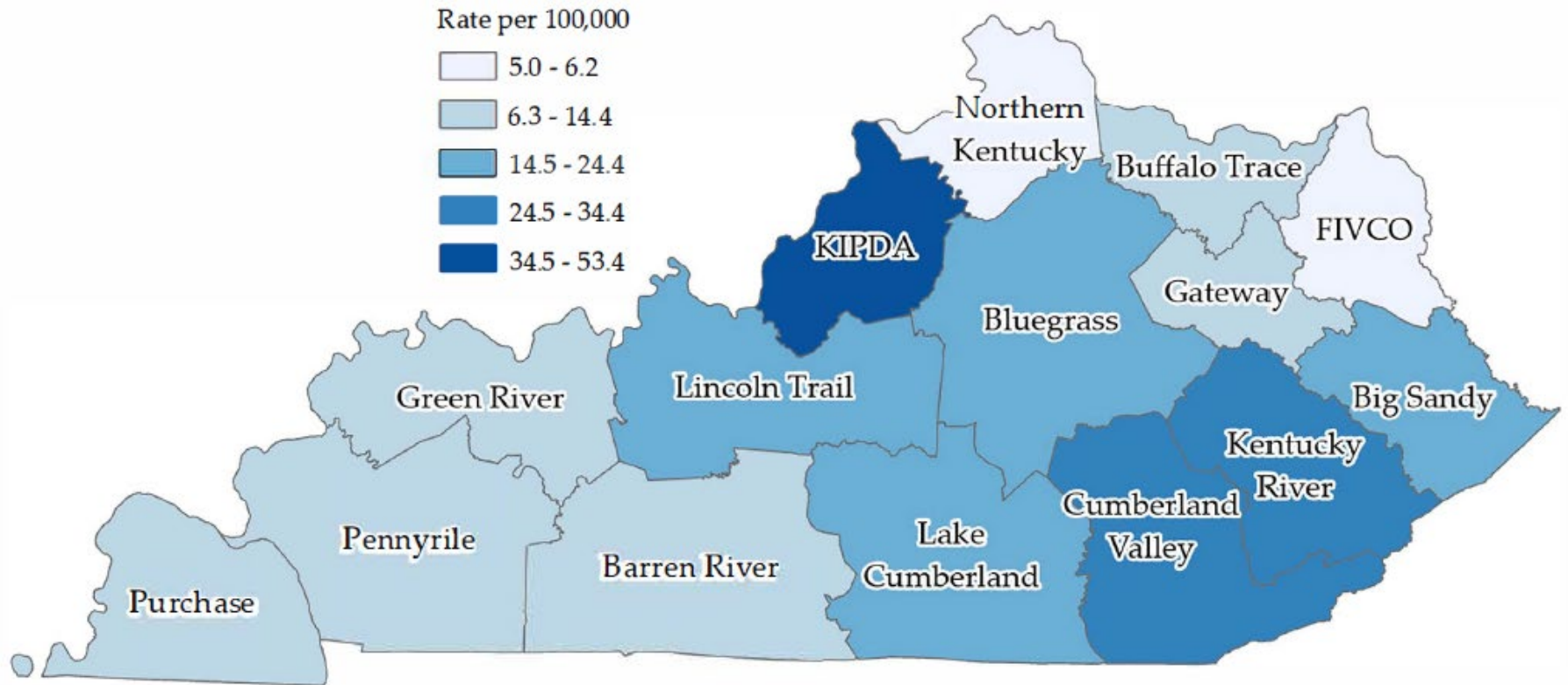
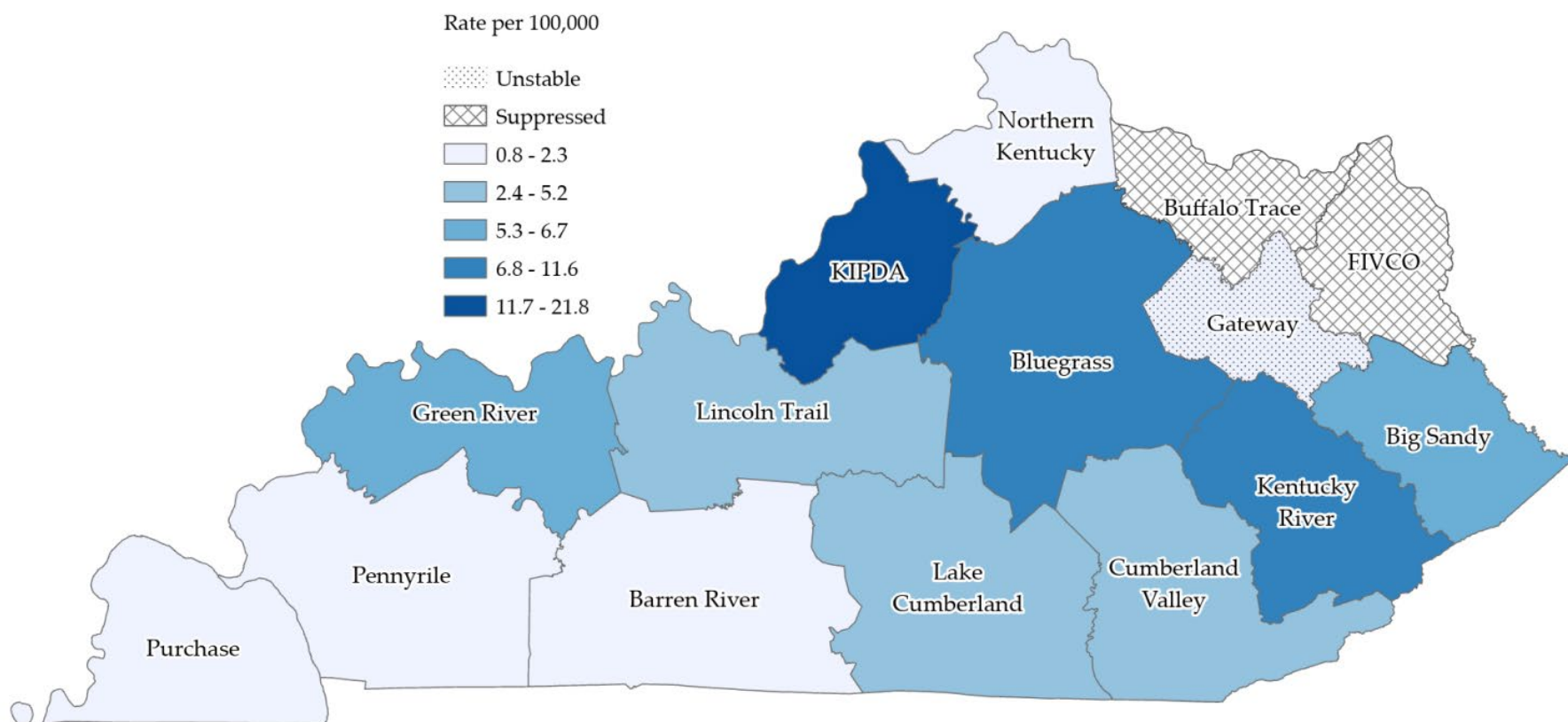
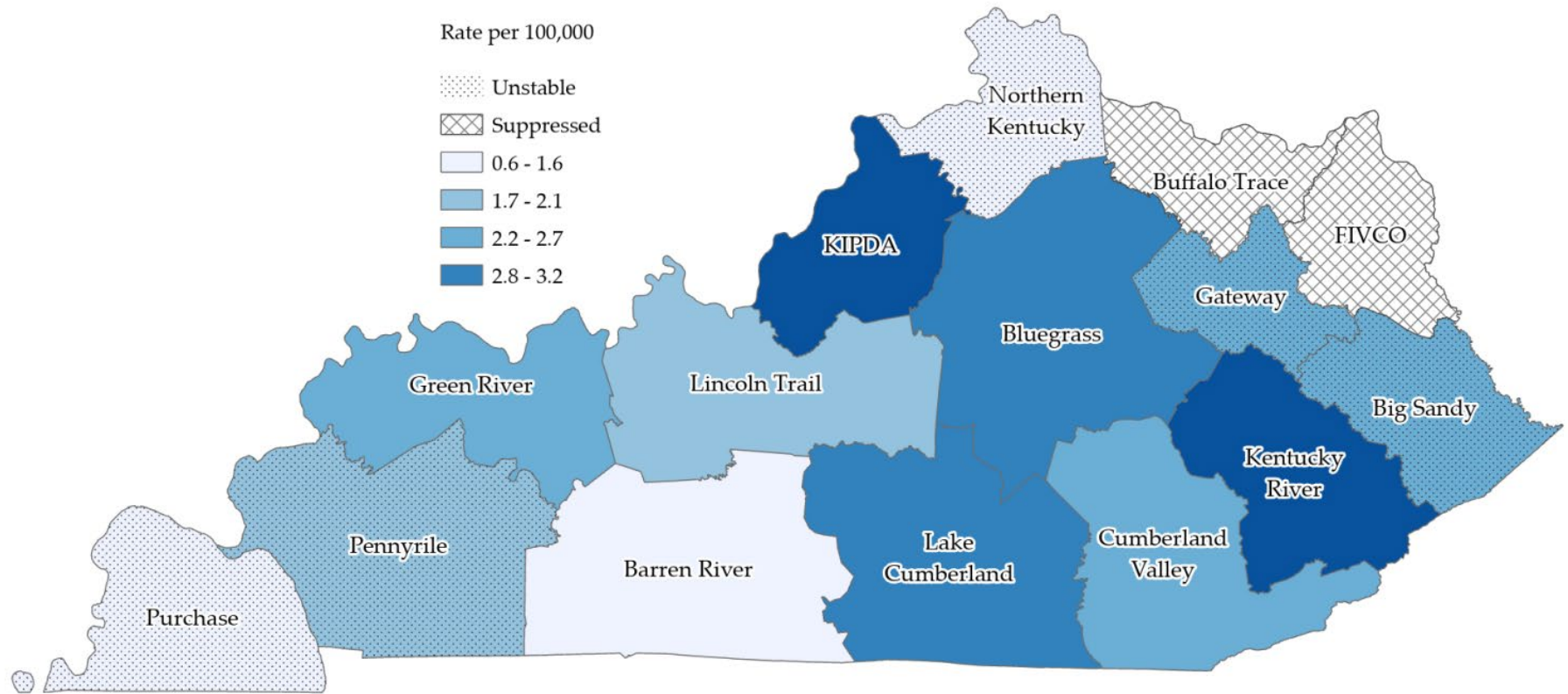


Figure 3: Rate of assault and legal intervention firearm injuries among Kentucky residents seen during ED visits and inpatient hospitalizations by Area Development Districts, 2019-2023



* Rates based on numbers less than 20 are unstable and should be interpreted with caution.

Figure 4: Rate of self-harm and undetermined firearm injuries among Kentucky residents treated at Kentucky ED and inpatient facilities by Area Development Districts, 2019-2023



*Rates based on numbers less than 20 are unstable and should be interpreted with caution.

Table 7: Count of firearm injuries by demographics and intent in Area Development Districts among Kentucky residents treated at Kentucky ED visits and inpatient facilities, 2019–2023

	2019	2020	2021	2022	2023
Barren River	51	54	50	50	48
Sex					
Male	45	48	-	44	38
Female	6	6	*	6	10
Race					
White	42	45	41	37	35
Non-white	9	9	9	13	13
Intent					
Unintentional	39	40	36	44	37
Self-harm/ undetermined	*	7	*	*	*
Assault/ legal intervention	-	7	-	*	-
Big Sandy	46	67	56	28	14
Sex					
Male	35	58	51	23	-
Female	11	9	5	5	*
Race					
White	46	67	-	28	14
Non-white	0	0	*	0	0
Intent					
Unintentional	38	48	37	17	9
Self-harm/ undetermined	*	*	6	*	*
Assault/ legal intervention	*	-	13	-	*
Bluegrass	287	348	314	242	227
Sex					
Male	244	284	253	199	188

	2019	2020	2021	2022	2023
Female	43	64	61	43	38
Race					
White	161	190	155	117	131
Non-white	126	158	159	125	96
Intent					
Unintentional	170	208	184	116	134
Self-harm/ undetermined	18	25	30	23	24
Assault/legal intervention	99	115	100	103	69
Buffalo Trace	9	8	10	5	11
Sex					
Male	-	8	-	5	-
Female	*	0	*	0	*
Race					
White	9	-	-	5	11
Non-white	0	*	*	0	0
Intent					
Unintentional	-	-	6	*	8
Self-harm/ undetermined	*	*	*	*	*
Assault/legal intervention	*	0	*	*	*
Cumberland Valley	69	93	95	70	68
Sex					
Male	58	80	78	61	61
Female	11	13	17	9	6
Race					
White	64	-	90	70	-
Non-white	5	*	5	0	*
Intent					

	2019	2020	2021	2022	2023
Unintentional	53	75	73	52	51
Self-harm/ undetermined	5	*	5	7	10
Assault/legal intervention	11	-	17	11	7
FIVCO	11	16	8	5	10
Sex					
Male	-	-	-	-	10
Female	*	*	*	*	0
Race					
White	-	16	-	-	10
Non-white	*	0	*	*	0
Intent					
Unintentional	10	16	*	*	8
Self-harm/ undetermined	-	0	*	0	*
Assault/legal intervention	*	0	*	*	*
Gateway	12	19	13	18	15
Sex					
Male	-	-	-	-	15
Female	*	*	*	*	0
Race					
White	-	19	13	18	15
Non-white	*	0	0	0	0
Intent					
Unintentional	10	17	8	10	11
Self-harm/ undetermined	*	*	*	*	*
Assault/legal intervention	-	*	*	*	*

	2019	2020	2021	2022	2023
Green River	43	49	59	52	37
Sex					
Male	-	41	52	43	31
Female	*	8	7	9	6
Race					
White	31	39	39	37	25
Non-white	12	10	20	15	12
Intent					
Unintentional	28	29	28	30	26
Self-harm/ undetermined	*	10	8	*	*
Assault/legal intervention	-	10	23	-	-
KIPDA	518	925	1,107	805	731
Sex					
Male	434	762	937	657	606
Female	84	163	170	148	125
Race					
White	181	314	352	246	238
Non-white	337	611	755	559	493
Intent					
Unintentional	279	606	792	516	529
Self-harm/ undetermined	37	31	74	67	44
Assault/legal intervention	202	288	241	222	157
Kentucky River	38	71	73	39	33
Sex					
Male	-	57	56	-	28
Female	*	14	17	*	5
Race					

	2019	2020	2021	2022	2023
White	-	71	-	39	-
Non-white	*	0	*	0	*
Intent					
Unintentional	24	51	53	28	23
Self-harm/ undetermined	5	6	6	*	*
Assault/legal intervention	9	14	14	-	-
Lake Cumberland	56	65	56	56	53
Sex					
Male	51	59	50	47	44
Female	5	6	6	9	9
Race					
White	-	-	-	-	-
Non-white	*	*	*	*	*
Intent					
Unintentional	40	47	40	39	39
Self-harm/ undetermined	10	*	8	9	*
Assault/legal intervention	6	-	8	8	-
Lincoln Trail	68	84	76	68	69
Sex					
Male	56	73	56	57	61
Female	12	11	20	11	8
Race					
White	58	69	54	48	57
Non-white	10	15	22	20	12
Intent					
Unintentional	53	64	55	54	52
Self-harm/ undetermined	5	*	7	6	9

	2019	2020	2021	2022	2023
Assault/legal intervention	10	-	14	8	8
Northern Kentucky	30	27	38	32	23
Sex					
Male	-	22	-	-	-
Female	*	5	*	*	*
Race					
White	24	21	28	25	17
Non-white	6	6	10	7	6
Intent					
Unintentional	22	19	30	27	19
Self-harm/ undetermined	-	*	*	*	*
Assault/legal intervention	*	-	-	*	*
Pennyrile	41	44	30	38	40
Sex					
Male	35	37	24	30	33
Female	6	7	6	8	6
Race					
White	35	27	17	29	30
Non-white	6	17	13	9	10
Intent					
Unintentional	29	35	26	32	27
Self-harm/ undetermined	7	*	*	*	5
Assault/legal intervention	5	-	*	*	8
Purchase	28	39	40	31	41
Sex					
Male	22	29	34	-	35
Female	6	10	6	*	6
Race					

	2019	2020	2021	2022	2023
White	21	30	28	25	31
Non-white	7	9	12	6	10
Intent					
Unintentional	18	32	35	26	31
Self-harm/ undetermined	*	*	*	*	5
Assault/legal intervention	-	*	*	*	5

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