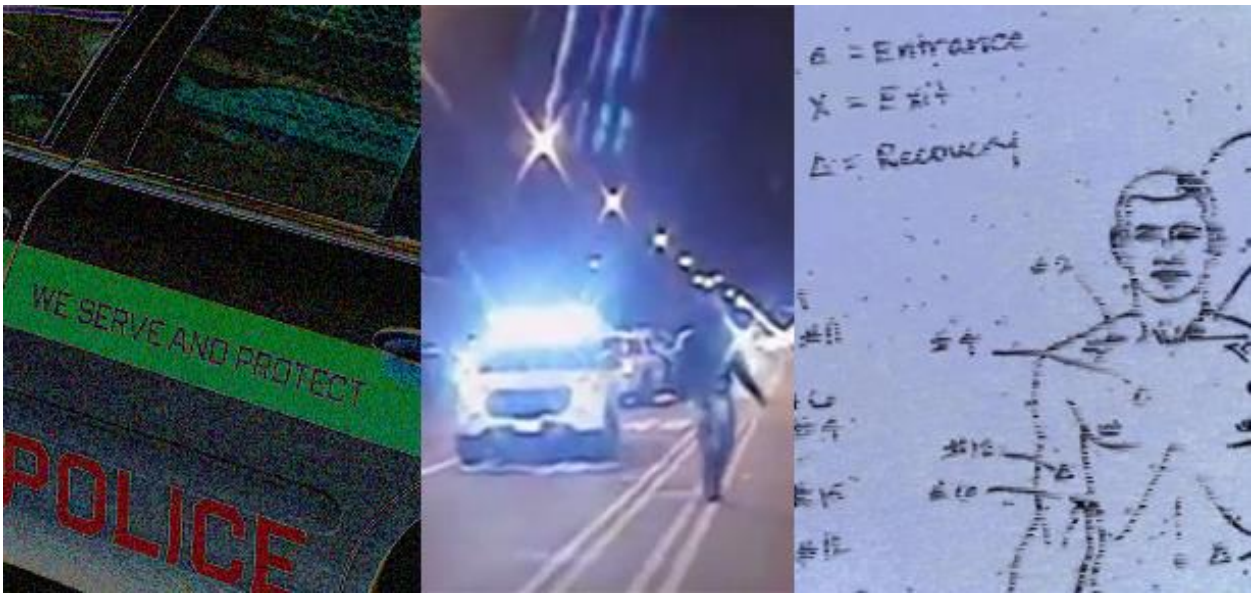
Surveillance of Civilians Injured by Law Enforcement:

Civilian Injuries Resulting in Hospitalization in Illinois, 2016-2022



Prepared by:

Lee Friedman, PhD[1]
Alfreda Holloway-Beth, PhD[1,2]

[1]University of Illinois at Chicago School of Public Health, Environmental and Occupational Health Sciences Division. 1603 West Taylor Ave. MC 922. Chicago, IL. 60612
Law Enforcement Epidemiology Project, www.policeepi.uic.edu

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Executive Summary

In a given year in the U.S., more than 50 to 60 million persons have contact with law enforcement personnel during traffic stops, street stops, arrests, traffic accidents or resident initiated contacts, of which an estimated one million experience use of or threat of force. In 2020, over 1 million U.S. residents experienced threat or nonfatal use of force during contact with law enforcement (Bureau of Justice Statistics, Police Public Contact Survey). Bureau of Justice Statistics data shows that 15% of the civilians who experience police threat or use of force are injured by law enforcement personnel, resulting in an estimated 250,000 civilian injuries annually, of which over 80,000 result in non-fatal injuries that require treatment in a hospital (CDC NEISS data).

Since 2000, across the U.S., more than 1.6 million U.S. civilians have suffered injuries requiring treatment in hospitals following contact with law enforcement and at least 11,038 have been killed (CDC MCOD data). However, law enforcement personnel are also at risk of injury, with over 351,000 police officers suffering injuries from assaults since 2000, and 1,225 officers having died through felonious means (FBI, Bureau of Justice Statistics). Currently, there exists comprehensive data regarding injuries suffered by law enforcement officers, but there is limited information on the civilians injured during these same encounters. In addition, the data regarding civilians that do exist are flawed. Data on civilian injuries coming out of police reports have been shown to undercount the number of cases, underestimate the severity of civilian injuries, and provide no information on acute and long-term consequences of the injuries.

In our previous work[1,2] we have described a framework for a comprehensive surveillance system based on existing public health data sources that can be implemented immediately to augment police reports and Bureau of Justice Statistics data. These data sources include prehospital ambulance run data, hospital outpatient and inpatient data, death records, newspaper and other media sources, and court records. Details on each of these data sources can be found at our website (https://policeepi.uic.edu/data-civilian-injuries-law-enforcement/data-sources-injuries-law-enforcement/).

The current report summarizes an analysis of one of these alternative public health data sources: the hospital outpatient and inpatient dataset. This report summarizes civilian injuries treated in Illinois hospitals between January 2016 and December 2022 (most recent data available at time of writing this report).

In this analysis, we found…

1. Civilian injuries caused by law enforcement impacts all citizens in the State, but the data demonstrates that African Americans are consistently and disproportionately the victims of both fatal and non-fatal injuries caused by law enforcement. The injury incidence rates among African-Americans are 5-10 times higher compared to white non-Hispanics depending on the region of residence.
2. Additionally, these injuries predominately affect males, persons between 15 and 44 years of age, and individuals on Medicaid or without health insurance, which are proxies for low income.

[1] *Holloway-Beth, A., Forst, L., Lippert, J., Brandt-Rauf, S., Freels, S., & Friedman, L. (2016). Risk factors associated with legal interventions. Injury Epidemiology, 3(1).*
[2] *Holloway-Beth A, Forst L, Freels S, Brandt-Rauf S, Friedman L. Occupational Injury Surveillance Among Law Enforcement Officers Using Workers' Compensation Data, Illinois 1980 to 2008. J Occup Environ Med. 2016 Jun;58(6):594-600.*

3. Civilian injuries are not isolated to major urban centers (Chicago Metropolitan Area, Rockford, Springfield), but occur throughout the State of Illinois. The overall injury rates are nearly equivalent across the three major geopolitical regions we analyze in our report: (1) Chicago (6.3 per 100,000), (2) Suburban Cook County (4.9 per 100,000), and (3) the rest of Illinois (5.5 per 100,000). We also present injury rates by ZIP code which demonstrate that some communities have substantially higher rates of injury caused by law enforcement. See our website to search for your community (https://www.policeepi.uic.edu).
4. African Americans had the highest incidence rates regardless of region, but the incidence rates were highest among African American residents living outside of Cook County and Chicago.
5. While injury rates have been significantly decreasing in Chicago and Suburban Cook County, there has been a substantial increase in injury rates since January 2022 across the remainder of Illinois.
6. Persons with neurologic conditions, substance use disorders and major psychiatric conditions, and those who are homeless are more likely to suffer an injury from law enforcement that requires hospital care.
7. The injuries suffered by civilians were consistent with known control tactics used by law enforcement targeting the head and upper extremities, with the most common serious injuries being fractures and open wounds.
8. For every death, there are approximately 40-70 non-fatal injuries that require treatment in a hospital; 12.8% of the civilians suffered traumatic brain injuries, which have potential long-term severe outcomes.
9. We identified 656 injuries caused by canines and conducted energy devices (e.g. TASERs). Nearly all of these injuries occurred within only a few municipalities. Training, policies, and utilization of K-9 units and conducted energy devices varies by jurisdiction. The hospital data clearly indicates that review of practices within municipalities where these sources of injuries nearly exclusively occur is warranted.

Incidents of law-enforcement-related injury are frequently dismissed, in part, because they are anecdotal. The lack of comprehensive surveillance data permits a narrative to persist that the problem does not exist, is exaggerated, or simply being used as a political tool. Before we can define policy on reporting requirements, accountability and training, we need to define the problem. This can only be done through a comprehensive surveillance program.

Background

Civilians injured by law enforcement is a growing problem

The number of civilians suffering both fatal and non-fatal injuries during contact with law enforcement personnel has risen sharply during the last 20 years, with a more precipitous increase in fatal injuries occurring since 2010.

Public attention to deaths of civilians caused by law enforcement personnel, also referred to as law-enforcement-related deaths or deaths caused during legal intervention, has grown tremendously. Coinciding with the increase in public awareness of this serious public health problem, data collected by the US Centers for Disease Control and Prevention (CDC) based on hospital and death records, shows that the number of both fatal and non-fatal injuries caused by law enforcement personnel has risen sharply during the last 20 years.[1]

However, even CDC numbers likely underestimate injuries suffered by civilians during contact with law enforcement personnel. According to the Bureau of Justice Statistics data, approximately 15% of civilians who have force used or threatened during their encounter with police are injured, but only about 37% of those injured seek medical care and would be captured by CDC surveillance systems.[1-4] In addition, data from major news sources such as The Guardian, Washington Post, and Reuters, identify substantially more civilian deaths than reported by the CDC, which relies solely on death certificates.

Furthermore, while the growing number of injuries has raised concerns for the safety and wellbeing of citizens nation-wide, data consistently show that African Americans are at least 3-times more likely to be injured and twice as likely to be killed than white non-Hispanics by law enforcement personnel.[1]

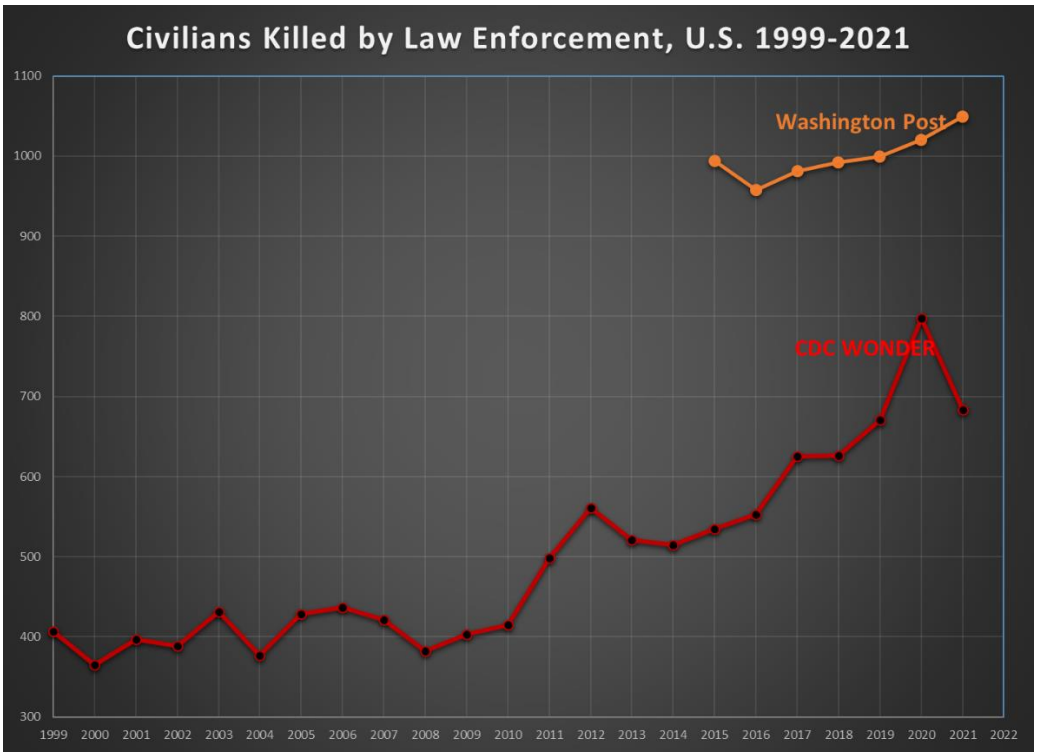
Problem Statement

Existing surveillance data is flawed

Data on civilian injuries coming from police reports have been shown to undercount the number of cases and underestimate the severity of injuries.

Currently, comprehensive data exist that details the injuries and fatalities suffered by law enforcement officers, but there is limited information on the civilians who are injured during contact with law enforcement. In addition, the data that do exist on civilian injuries have been shown to be flawed in that they undercount the number of cases, underestimate the severity of civilian injuries, and provide no information on acute and long term outcomes.[5-10] The data on civilian fatalities, in particular, suffer from the prevailing limitation common to all death records, in that they poorly capture cause of death, potentially resulting in a substantial underestimation of the true number of civilians killed by law enforcement

officers. This is reflected in public data aggregated by The Washington Post which identifies 20-50% more civilian deaths each year compared to the primary federal government data source which relies on death certificates.



**2021 most current year of data available*

Lack of alternative surveillance data

Despite the fact that up to 250,000 people are estimated to suffer injuries during contact with law enforcement personnel in a given year in the U.S.[1-4] there remains a paucity of epidemiologic research on this topic. Currently, publicly available data are limited to describing basic demographic characteristics of the injured or killed civilians, but do not provide any comprehensive data describing risk factors, mechanisms of injury, severity of injury, clinical outcomes or spatial clustering of incidents. In the absence of adequate surveillance data, it is difficult to identify appropriate policy needs to address this public health issue.

Public health data indicate that for every 1 death there are approximately 125 non-fatal injuries (all severity types including injuries that are not treated in a hospital; 40-70 of which are treated in hospitals).

The current narrative is too narrow

While the media and social justice groups have raised public awareness of firearm related deaths, there continues to be little discussion about deaths caused by presumably less lethal means or the large number of civilians who are injured but do not die. This myopic view of the circumstances surrounding these types of injuries stems from a lack of data. Public health data can help with our understanding of health outcomes, and even tell us about psychosocial

ramifications to the injured individual and their families. Only through a comprehensive surveillance system can we provide an accurate picture of the magnitude and severity of this serious social issue, in order to inform us about the appropriate policy changes that are needed to improve the situation.

Methods

What is the objective of the annual report?

In our previous work, we have described a framework for a comprehensive surveillance system based on existing public health data sources that can be implemented immediately to augment police reports and Bureau of Justice Statistics data. These data sources include prehospital ambulance run data, hospital outpatient and inpatient data, death records, newspaper and other media sources, and court documents that are compiled by local Chicago researchers. A more detailed description of these data sources and links to them can be found at https://policeepi.uic.edu/data-civilian-injuries-law-enforcement/data-sources-injuries-law-enforcement/.

This annual report summarizes one of these public health data sources: the hospital outpatient and inpatient dataset. The objectives of the current analysis are to (1) demonstrate the feasibility of using hospital data, and (2) analyze the incidence, spatial distribution and clinical outcomes of civilian injuries treated in Illinois hospitals to provide necessary data to key stakeholders.

Methods for the current report

We conducted a retrospective analysis of all legal intervention injuries in the State of Illinois occurring between January 1, 2016 and December 31, 2022 using the outpatient and inpatient hospital databases. Both databases are derived from billing records. The outpatient database includes patients treated in emergency rooms for less than 24 hours who were not admitted to the hospital. The inpatient database includes patients treated for 24 hours or more. Both datasets include information on patient demographics, exposure information, health outcomes, and economic outcomes. Based on the annual state audit of hospitals, the hospitals included in the datasets comprise 96.5% of all patient admissions statewide.[11]

All patients with ICD-10-CM cause of injury codes indicating injuries caused during a legal intervention were included in the analysis (Y35.0 to Y35.9). The ICD-10 category for injuries caused by legal intervention includes “injuries inflicted by the police or other law-enforcing agents, including military on duty, in the course of arresting or attempting to arrest lawbreakers, suppressing disturbances, maintaining order, and other legal action.” The sixth digit of the ICD-10 codes identifies whether the injured person is a suspect, bystander or law enforcement official. For this report, we omit all cases where the 6th digit is 1

(Y35.XX1), which indicates that a law enforcement official or security guard was the injured party. The data relating to injured law enforcement personnel are summarized in a different report on our website (https://policeepi.uic.edu/law-enforcement-safety/).

All statistical analyses were conducted using SAS software (v.9.4; SAS Institute Inc., Cary, NC). As part of the descriptive analysis we compared demographic characteristics, geospatial trends, temporal trends, injury severity and hospital course of treatment measures. Publicly available data tables were created showing average annual incidence rates by ZIP code (https://policeepi.uic.edu/data-civilian-injuries-law-enforcement/facts-figures-injuries-caused-law-enforcement/).

Results – Non-Fatal Civilian Injuries Treated in Illinois Hospitals

Demographics and Clinical Outcomes

We identified 5,172 patients treated for injuries caused during contact with law enforcement personnel from 2016-2022. The majority of patients were male (83.1%) with a mean age of 33.5 years. The patients were disproportionately Black or African American (44.5%); this is in stark contrast to general population demographics where only 13.8% of the Illinois population identifies as Black or African American (**Table 1**). Almost all the patients were treated as outpatient ED visits (n=4,965, 96.0%), and less than half were treated in hospitals with trauma units (n=2,463, 47.6%).

Of the total hospital visits, 73 (1.4% of total) of the injuries were suffered by bystanders, and the remainder were suffered by persons coded as suspects. The bystander injuries disproportionately occurred among residents of Chicago, ages 20-24 years, females, Hispanic/Latinos, and during May 2020 (George Floyd protests), but they were less likely to be admitted as inpatients, require surgical intervention, or have substance use disorders or psychiatric conditions. None died, but four appear to have been arrested at the time of discharge (discharged to court or law enforcement).

As seen in our previous work, among those identified as "suspects" the most commonly reported comorbidities were alcohol abuse and dependence (9.0%), drug abuse and dependence (7.9%), psychoses and depression (7.2%), and paralysis and other neurological disorders (1.8%). Among those admitted to the hospitals, the mean length of hospitalization was 5.6 days. In addition, 2.5% required a surgical intervention to manage their injuries (**Table 2**).

There were 61 persons identified as homeless suffering injuries by law enforcement. While only 3.1% of non-homeless persons were admitted to a

hospital, 45.9% of homeless persons were admitted to the hospital. Homeless individuals were more likely to suffer serious injuries; 37.7% suffered a traumatic brain injury, internal organ injury, fracture, amputation or crush injury compared to 21.6% of non-homeless persons.

Types of Injuries and Body Parts Affected

12.8% of civilians suffered traumatic brain injuries, which has potential severe long-term outcomes.

An important finding from the analysis was that non-fatal injuries are very common. Based on CDC and Washington Post data, 74-140 Illinois residents have been killed by law enforcement during the period of 2016-2022. **For every death, there are approximately 40-70 non-fatal injuries that require treatment in a hospital.** The most common types of injuries suffered by these patients were contusions (45.8%), open wounds (19.5%), sprains or strains (12.7%), fractures (11.2%), internal injuries (2.8%), dislocations (1.4%) and poisoning/toxic effects (1.8%) (**Table 3**). Injuries were spread across the body but were concentrated to the head (31.8%) and upper extremities (35.2%). In fact, 12.8% (n=661) of civilians suffered a traumatic brain injury by law enforcement, which has the potential for severe long-term outcomes. The distribution of injuries to other body regions were as follows: torso (22.0%), legs (16.3%) and systemic effects (8.8%). Most fractures occurred to the head and face (n=220), upper extremities (n=214), and torso (n=82). Twenty-five civilians suffered fractures of the vertebral column. Open wounds predominately occurred on the head and face (n=500), upper extremities (n=280) and torso (n=213).

Spatial Distribution of Injuries

Injuries occurred among residents living across the entire State of Illinois and were not isolated to major urban centers. In fact, the largest number of patients were residents of areas outside of Cook County (n=2,919, 56.4%), followed by residents of Chicago (n=1,208, 23.4% of all cases) and suburban Cook County (n=849, 16.4%). There were 196 civilians injured who were not residents of Illinois (3.8%). This is very similar to the distribution of the total population in Illinois in which 59.2% live outside Cook County, 21.3% live in Chicago and 19.5% live in suburban Cook County. When we analyzed the region in which the patients were treated, we found that less than half of the patients were treated in the greater Chicago area within Emergency Medical Services (EMS) regions 7 through 11 (n=2,129; 41.1%). These EMS regions cover Cook County and the collar counties around Chicago.

Temporal Trends

The monthly number of hospitalizations increased between 2016 and 2019, but has shown a decline during the pandemic period of 2020-2022. However, there appears to be an increase in the number of injuries among residents living outside of Cook County/Chicago since the beginning of 2022. We observed a seasonal pattern with a marked increase in cases during the warmer months of April

through September in all three geopolitical regions in Illinois (Chicago, Cook County and Remainder of Illinois). (**Figures 1 and 2**).

An evaluation of trends in civilian injuries by region showed that the rate of injuries involving residents of Chicago did not significantly change between 2016 and 2019, then began to significantly decline by 2.2% per month in August 2019 ($p<0.001$). In suburban Cook County, the trend in rate of injuries has been significantly declining since 2016 by 1.0% per month (accounting for seasonality) with no significant change in trend during the seven year period ($p<0.001$). Among residents of the rest of Illinois, the rate of injuries caused by law enforcement were increasing significantly by 1.0% per month prior to June 2019 ($p<0.001$), then began to decrease by 2.3% per month until January 2022 ($p<0.001$). Since the start of 2022, the rate of injury has increased among residents of the rest of Illinois by 7.8% ($p=0.002$). This recent increase in injury rates in the rest of Illinois appears to be driven by an increase both in injuries among Black or African American residents (increase 13.9% in 2022; $p<0.001$) and non-Hispanic white residents (increase 7.7% in 2022; $p=0.009$). There has been no significant change in the trend of injury rates among Hispanics and Latinos in Illinois over the seven-year period.

Most Common Cause of Injury

The most common cause of injury came from blows or manhandling, not from firearms.

The most common cause of injury came from blows or manhandling, not from firearms (**Table 4**). Firearms were the cause of 0.9% of all non-fatal injuries (n=95). However, among the 23 deaths occurring in the hospitals, 18 of them resulted from firearm injuries. Based on CDC and Washington Post data, 74-140 Illinois residents have been killed by law enforcement between 2016-2022. This indicates that only 16.4-31.1% of deaths are captured in hospital records. Since not every county in Illinois requires an autopsy by a medical examiner or coroner for violent deaths, it increases the probability that civilian deaths are undercounted in traditional surveillance systems especially if the person completing the death certificate is unaware of the circumstances relating to the fatality.

The category for "blows or manhandling" excludes injuries caused by commonly used blunt objects such as batons and flashlights. The category for "blows or manhandling" typically involves injuries resulting from pushing or throwing the civilian against objects including the ground (tackling, throws, insertion into vehicles), submission holds including sitting on the civilian or choke holds, maneuvers used to shackle citizen (arm rotation, bending), blows to the civilian's body using officer extremities, and falling and tripping (often caused by being pushed/shoved). However, many of the mechanisms of injury identified involve some aspect of "manhandling" such as caught between objects, foreign objects that enter the skin during submissions, motor vehicles, "slip, trip and falls", and being struck by or against an object (Table 4).

There were also 576 persons treated for injuries sustained after use of a conducted energy device (13.6% of total; e.g. TASER). Injuries sustained by conducted energy devices occurred disproportionately by residents of Chicago and in the remainder of Illinois outside of suburban Cook County. Spatially half of all of these injuries occurred in the municipal jurisdictions of Chicago, Rockford, Peoria, Springfield, Decatur, Galesburg, Chicago Heights, Danville and Loves Park.

An additional 80 persons sustained injuries from dog bites. Nearly all of the injuries sustained from dogs occurred in two counties (n=41) in Winnebago County and Madison County. Spatially these injuries were most common in the following municipalities: Rockford (n=19) and Alton (n=6), and Edwardsville (n=4). Only eight injuries from dog bites occurred in all of Cook County.

In addition, there were three civilians reported being sexually assaulted by law enforcement personnel, two of the victims were African American men and one was a non-Hispanic white female.

There was a marked increase in the mechanism of injury coded as "unspecified means" in the new ICD-10 data (years 2016 forward) compared to ICD-9 coded data (prior to 2016). When ICD-9 codes were used, only 10.7% of injuries were coded as unspecified. However, under the new coding system, 32.3% of all injuries were coded as "unspecified mechanism". There is a need to identify the reasons for use of the unspecified codes. The code categories in the ICD-10 for mechanism of injury are virtually identical to the ICD-9 categories. It is possible that the ICD-10 codes are too narrow to accurately represent modern policing control tactics or coders are not provided sufficient details in the medical records to accurately capture mechanism.

Crude Average Annual Incidence Rates

The incidence rates for Black or African American citizens was 5-10 times higher than White non-Hispanics, throughout the State of Illinois.

The average annualized crude incidence rates of hospitalization visits for injuries caused by law enforcement were 6.3 per 100,000 residents of Chicago, 4.9 per 100,000 residents of suburban Cook County (excluding Chicago), and 5.5 per 100,000 residents in the remainder of the State of Illinois. In addition, Black or African Americans had the highest incidence rates regardless of region, but was highest among Black or African American residents living outside of Cook County (**Table 5**). In contrast, the hospital visitation rate was nearly double among Hispanics and Latinos living in suburban Cook County, compared to Hispanics and Latinos living in Chicago or the rest of Illinois. Among white non-Hispanics, the hospital utilization rates were more than 2-times higher among those living outside of Cook County.

We calculated rate ratios comparing incidence rates for all ethnicities compared to white non-Hispanic residents. The data shows that civilian injuries caused by law

enforcement impacts all citizens in the State, but Black or African American residents are consistently and disproportionately the victims of injuries caused by law enforcement that require medical care at a hospital. Black or African Americans were 5 to 10 times more likely to be treated in a hospital for injuries caused by law enforcement compared to white non-Hispanics across the three regions analyzed in this study. Hispanics and Latinos were slightly less likely to be treated in a hospital if they lived outside of Cook County, but twice as likely if they lived in suburban Cook County.

The "All Other" category mainly comprised of those identifying as "other race". In Chicago, persons in the "All Other" category were 6.6-times more likely to seek treatment for injuries caused by law enforcement compared to white non-Hispanic residents. Muslims, Sikhs, south Asians and other religious and cultural groups experience generalized discrimination and violence, as well as being targeted by law enforcement, especially since 9/11. Our data indicates the need to further research policing in minority communities that are typically not discussed, as well as the accuracy of race and ethnicity variables especially for individuals who identify as multi-racial.

Discussion

The very idea of what constitutes an acceptable level of force remains unclear and varies by jurisdiction and officer.

The very idea of an acceptable level of force is unclear. According to the fourth amendment, police must be "reasonable" in the level of force they use in an arrest and only use deadly force in "defense of life or when necessary" to make a difficult arrest. The language used in the constitution leaves a substantial area of interpretation. Thus, the acceptable levels of force used and tolerated can vary greatly from state to state, from one law enforcement jurisdiction to the next, and certainly between individual officers. It is important that scientific and statistical analyses aid in the development of a more precise definition of an acceptable level of force that protects both law enforcement officers and civilians.

In our analysis, the vast majority of patients were discharged home (69.1%). It is unclear if those discharged home or to a different medical facility were (1) arrested during the legal intervention and arraigned while in the hospital, (2) involved in the use of force when no crime was committed, or (3) a crime was committed and the use of force was justified, but charges were not filed. However, it is rare to arraign a person not present in the courtroom, and if charges were pressed, a greater proportion of these individuals would likely be transferred to a jail with an infirmary after they were stabilized in a community-based hospital. In this analysis, only 24.5% were discharged to the courts or custody of law enforcement.

Civilian injuries treated in hospitals are consistent with common use of force tactics, many of which result in serious adverse health outcomes.

The injuries and affected body parts documented in the hospital records were consistent with the most commonly reported methods of force used by law enforcement—grabbing, tackling, pushing/shoving, striking (with flashlight or baton), and control holds.[13-14] The primary focus of public debate relates to

firearm injuries. However, firearms caused only 1.9% of the injuries treated in hospitals. For every death, there are approximately 40-70 non-fatal injuries that require treatment in a hospital. Control tactics that do not involve firearms resulted in many serious injuries, including 661 traumatic brain injuries (12.8% of all cases). Research has demonstrated that even apparently mild brain injuries can result in long-term impairment.[15-17] Additionally, we identified 656 injuries caused by canines and conducted energy devices that occurred within only a few municipalities. Training, policies, and utilization of K-9 units and conducted energy devices varies by jurisdiction. The hospital data clearly indicates that review of practices within municipalities where these sources of injuries nearly exclusively occur is warranted

Law enforcement is a dangerous and often thankless job. However, confusion and distrust of law enforcement personnel by civilians and the daily hazards and general stresses faced by officers exacerbate the probability of physical or lethal force.

Confusion and distrust of law enforcement personnel by civilians, and the daily hazards and general stresses faced by law enforcement personnel while on the job exacerbate the probability of physical or lethal force. Reports by law enforcement personnel and civilians differ starkly. Perceived threat to an officer is the most commonly reported reason for use of force by law enforcement personnel. Among civilians, the 2020 Police Public Contact Survey (PPCS; Bureau of Justice Statistics) reports that 45.9% reported that they felt the law enforcement personnel's use of force was excessive when an officer threatened or used force.[4] In the same survey, only 19.6% of civilians who were involved in contact with law enforcement personnel in which force was used or threatened behaved in one or more of the following ways: disobeyed, fled, pushed, grabbed, hit, resisted arrest, or insulted.[4] The 2020 PPCS also shows that only 1.4% of the civilians who had force used against them reported that they "pushed, grabbed, or hit the officer(s)".[4] There is a clear divide between the perceptions of law enforcement personnel and civilians.

A key issue is that statistics that rely on complaint data severely underestimate civilian concerns about excessive use of force. In the same 2020 BJS study cited above, only 16.2% of civilians who felt the officers "used excessive force" filed a complaint.[4] In Illinois, there is some evidence in the literature that excessive use of force by law enforcement personnel is not an infrequent event. In the past, the Chicago Police Department (CPD) in particular has had problems with allegations of excessive force. Based on a major report from the University of Chicago School of Law, 1,774 claims of police brutality were filed against officers of the CPD alone between 1999 and 2004.[18] However, this issue is difficult to research because of the lack of adequate data. In Illinois and more broadly across the U.S., there are no policy directives that require publicly accessible repositories for such information as seen with other types of violent injuries, such as mandated reporting of child or elder abuse.

While other countries have registries for injuries caused during contact with law enforcement personnel, in the U.S. the public is largely left to search through media reports, publicly released documents from Bureaus of Internal Affairs or Independent Police Review Authorities, and court documents for information on

the subject. The FBI has recently made an effort to gather data on use of force and resulting injuries through the National use-of-force data system. The use-of-force data system is intended to capture injuries treated in hospitals and fatalities. Despite 149 law enforcement jurisdictions in Illinois reported data to the FBI, only 17 incidents were reported to the FBI in 2019 and 2020. This represents less than 1% of the cases we identified through the hospital data system. However, if only fatal injuries are being reported to the FBI, then the numbers align with the CDC and Washington Post counts. The main issue is that reporting is voluntary and the agencies reporting data to the FBI only covers 61% of sworn officers.

As an illustration of the magnitude of incidents and the cost to taxpayers for police misconduct, the City of Chicago alone has paid out about $500 million in taxpayer money (2010-2020) in civil suits for incidents involving wrongful deaths, excessive force, false arrests, illegal detentions, illegal search and seizure, civil rights violations and property damage. Since it is mandatory for police to report civilian injuries to their departments, these data should be compiled, analyzed and publicly distributed on annual basis in an effort to identify ways to reduce these types of injuries and civil rights violations, as is done in Australia.

Policy Implications

THE ROAD FORWARD

Before we can define policy on reporting requirements, accountability and training, we need to define the problem. This can only be done through a comprehensive surveillance program.

There is a need for: one, a national investment in a comprehensive surveillance system documenting law enforcement-related fatal and non-fatal injuries; two, a paradigm shift identifying injuries caused during legal intervention as a public health issue, rather than exclusively as a criminal justice issue; and three, improved accountability and training of officers.

Developing a Comprehensive Surveillance System

Government and media reports show that non-fatal and fatal injuries caused by law enforcement personnel have been increasing since the year 2000 and has disproportionately impacted Black or African Americans. However, these incidents are frequently dismissed, because they are anecdotal. The lack of data exacerbates the common view that the problem does not exist, is exaggerated, or simply being used as a political tool by “anti-police” constituents. Before we can define policy on reporting requirements, accountability and training, we need to define the problem. This can only be done by investing in a comprehensive national surveillance program.[19,20]

In a previous study we conducted, we proposed the development of a comprehensive surveillance system to monitor civilians injured by law enforcement personnel that does not rely on any single data source, but rather multiple data sources, in addition to data collected and reported by law enforcement agencies. Our framework for a comprehensive surveillance system

identified existing data sources that can be used immediately to augment police reports and Bureau of Justice Statistics data. These data sources include prehospital ambulance run data from IDPH, hospital outpatient and inpatient data from the Illinois Hospital Association, death records from local coroners or the NVDRS, newspaper and other media sources, and court documents. The data needs to be made publicly available, and the surveillance system needs to involve all stakeholders including policy makers, citizen advocacy groups, the Bureau of Justice Statistics, and especially, law enforcement. A description of these data systems can be found at: https://policeepi.uic.edu/data-civilian-injuries-law-enforcement/data-sources-injuries-law-enforcement/.

Need for A Paradigm Shift: Legal Intervention Injuries are a Public Health Issue

There has been a call for a paradigm shift by researchers who understand that this is a public health issue rather than solely a criminal justice problem. In turn, these researchers have called for the collection and reporting of law enforcement related injuries and deaths by public health entities, to augment current criminal justice sources. Law enforcement related violence has proven to be in alignment with the issues that public health strives to deal with, such as social and structural determinants of health, especially the correlation between violence, socioeconomic status and race in the United States. Many researchers believe that we could use the existing public health data infrastructure to implement mandatory reporting seamlessly.[19]

Injuries caused through legal intervention impacts the individual and the community as a whole. The public health model can provide new insights that can be used to prevent these injuries from ever occurring. In a statement by the Public Health and the Policing of Black Lives, they have called for recognition that certain police activities cause harm to the public, and, in fact, adds to existing racial disparities. The persistent disparity observed in the data may be attributable to policing activities that encourages profiling, harassment, and aggressive behavior towards specific citizens in the United States, especially African Americans. According to Geller, these injuries and deaths create mental trauma in families, communities and especially among young men in urban communities.[12] The hope is that by implementing public health policies for active surveillance of law-enforcement-related injuries and deaths, the data can inform policy makers on how to best reduce or eliminate unwarranted injury.

Policies that Improve Accountability and Training of Officers

Civilian injuries caused during contact with law enforcement is a public health issue and requires policies and safeguards to be put in place to reduce the rates of fatal and non-fatal civilian injuries, while safeguarding the health and wellbeing of law enforcement personnel. Surveillance data can inform the following key policy issues:

- Mandatory reporting of use of force and resulting injuries to an independent agency.
- Public access to data on all egregious cases of civil rights violations and repeat offenders.
- Establishment of independent agencies to receive, investigate and adjudicate all complaints of civil rights violations with the power to discipline/fire/initiate criminal proceedings.
- Extend protections from retaliation for civilians who file complaints to 10 years from the date of complaint.
- Evaluate recruitment and screening strategies for new cadets.
- Develop a system to assess implementation of novel non-lethal tactics and evaluate existing non-lethal techniques on an ongoing basis.
- Develop ongoing training programs for officers involving unconscious bias and how to interact with disabled, intoxicated and mentally ill persons.
- Assess officer burnout and PTSD, and provide rotations out of difficult positions/precincts.
- Eliminate arrest/citation/summons quotas.
- Extend whistleblower protections to 10 years from the date of complaint for officers (current law protects officers for 30-90 days).
- Add data on civilian complaints, suits, injuries and deaths to annual performance reviews of officers, supervisors and commanders.
- Provide law enforcement personnel commensurate salaries for 40 hours of work (without having to work overtime).
- Establish a non-law enforcement emergency response unit to respond to 911 calls relating to persons with mental health conditions and non-violent complaints based on social work models (similar to Fire Department EMT response). These first responders would be called to scenes involving drug use, public disturbances, vagrancy, loitering, vandalism and other non-violent violations.

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Tables and Figures

Table 1: Demographics Characteristics of Patients Treated for Injuries Caused by Legal Intervention, 2016-2022 in Chicago, Cook County (not including Chicago) and the Remainder of the State of Illinois

	CHICAGO ONLY (N=1208)	COOK COUNTY W/O CHICAGO (N=849)	REST OF ILLINOIS (N=2919)	NOT ILLINOIS RESIDENT (N=196)	Total (N=5172)
Race / Ethnicity					
Black or African American	849 (70.3%)	430 (50.6%)	944 (32.3%)	78 (39.8%)	2301 (44.5%)
White Non-Hispanic	93 (7.7%)	189 (22.3%)	1623 (55.6%)	88 (44.9%)	1993 (38.5%)
Hispanic/Latino	134 (11.1%)	166 (19.6%)	182 (6.2%)	14 (7.1%)	496 (9.6%)
American Indian or Alaska Native	1 (0.1%)	1 (0.1%)	3 (0.1%)	0 (0.0%)	5 (0.1%)
Asian	1 (0.1%)	5 (0.6%)	11 (0.4%)	1 (0.5%)	18 (0.3%)
Native Hawaiian/Pacific Islanders	0 (0.0%)	1 (0.1%)	3 (0.1%)	2 (1.0%)	6 (0.1%)
Other Race	125 (10.3%)	50 (5.9%)	104 (3.6%)	11 (5.6%)	290 (5.6%)
Multiracial	1 (0.1%)	4 (0.5%)	19 (0.7%)	1 (0.5%)	25 (0.5%)
Unspecified	4 (0.3%)	3 (0.4%)	30 (1.0%)	1 (0.5%)	38 (0.7%)
Sex					
Male	1024 (84.8%)	714 (84.1%)	2390 (81.9%)	168 (85.7%)	4296 (83.1%)
Female	184 (15.2%)	135 (15.9%)	529 (18.1%)	28 (14.3%)	876 (16.9%)
Pregnant	0 (0.0%)	0 (0.0%)	1 (0.0%)	0 (0.0%)	1 (0.0%)
Age					
0 to 4 years	0 (0.0%)	0 (0.0%)	1 (0.0%)	0 (0.0%)	1 (0.0%)
5 to 9 years	1 (0.1%)	0 (0.0%)	1 (0.0%)	0 (0.0%)	2 (0.0%)
10 to 14 years	10 (0.8%)	7 (0.8%)	33 (1.1%)	3 (1.5%)	53 (1.0%)
15 to 19 years	117 (9.7%)	101 (11.9%)	275 (9.4%)	10 (5.1%)	503 (9.7%)
20 to 24 years	230 (19.0%)	120 (14.1%)	356 (12.2%)	28 (14.3%)	734 (14.2%)
25 to 34 years	421 (34.9%)	300 (35.3%)	1006 (34.5%)	75 (38.3%)	1802 (34.8%)
35 to 44 years	238 (19.7%)	170 (20.0%)	663 (22.7%)	41 (20.9%)	1112 (21.5%)
45 to 54 years	111 (9.2%)	89 (10.5%)	385 (13.2%)	24 (12.2%)	609 (11.8%)
55 to 64 years	59 (4.9%)	46 (5.4%)	160 (5.5%)	11 (5.6%)	276 (5.3%)
65 to 74 years	17 (1.4%)	13 (1.5%)	34 (1.2%)	2 (1.0%)	66 (1.3%)
75 years and above	4 (0.3%)	3 (0.4%)	5 (0.2%)	2 (1.0%)	14 (0.3%)
Mean Age (sd)	32.4 (sd=12.7)	33.0 (sd=12.7)	34.0 (sd=12.1)	35.0 (sd=14.5)	33.5 (sd=12.5)
Homeless	17 (1.4%)	12 (1.4%)	28 (1.0%)	4 (2.0%)	61 (1.2%)
Injured in Derelict/Abandoned Housing	61 (5.0%)	19 (2.2%)	99 (3.4%)	11 (5.6%)	190 (3.7%)
Payer type					
Self-pay/Self-administered	296 (24.5%)	189 (22.3%)	551 (18.9%)	98 (50.0%)	1134 (21.9%)
Charity	32 (2.6%)	22 (2.6%)	17 (0.6%)	8 (4.1%)	79 (1.5%)
Medicaid	608 (50.3%)	430 (50.6%)	1608 (55.1%)	51 (26.0%)	2697 (52.1%)
Medicare	45 (3.7%)	46 (5.4%)	219 (7.5%)	4 (2.0%)	314 (6.1%)
Private Insurance	193 (16.0%)	139 (16.4%)	411 (14.1%)	28 (14.3%)	771 (14.9%)
Workers' Compensation	18 (1.5%)	8 (0.9%)	21 (0.7%)	0 (0.0%)	47 (0.9%)
ChampUS or ChampVA	1 (0.1%)	2 (0.2%)	9 (0.3%)	3 (1.5%)	15 (0.3%)
Other	15 (1.2%)	13 (1.5%)	83 (2.8%)	4 (2.0%)	115 (2.2%)
Year					
2016	176 (14.6%)	144 (17.0%)	364 (12.5%)	18 (9.2%)	702 (13.6%)
2017	207 (17.1%)	139 (16.4%)	376 (12.9%)	27 (13.8%)	749 (14.5%)
2018	192 (15.9%)	171 (20.1%)	463 (15.9%)	43 (21.9%)	869 (16.8%)
2019	205 (17.0%)	134 (15.8%)	505 (17.3%)	36 (18.4%)	880 (17.0%)
2020	185 (15.3%)	95 (11.2%)	409 (14.0%)	31 (15.8%)	720 (13.9%)
2021	133 (11.0%)	70 (8.2%)	381 (13.1%)	18 (9.2%)	602 (11.6%)
2022	110 (9.1%)	96 (11.3%)	421 (14.4%)	23 (11.7%)	650 (12.6%)

Table 2: Severity of Injury Measures and Discharge Outcomes Among Patients Treated for Injuries Caused by Legal Intervention, 2016-2022 in Chicago, Cook County (not including Chicago) and the Remainder of the State of Illinois

	CHICAGO ONLY (N=1208)	COOK COUNTY W/O CHICAGO (N=849)	REST OF ILLINOIS (N=2919)	NOT ILLINOIS RESIDENT (N=196)	Total (N=5172)
Hospital Treatment					
Inpatient Cases (>24 hrs at initial hospital)	50 (4.1%)	43 (5.1%)	98 (3.4%)	16 (8.2%)	207 (4.0%)
Treated in Facility with a Level 1 or 2 Trauma Unit	387 (32.0%)	347 (40.9%)	1646 (56.4%)	83 (42.3%)	2463 (47.6%)
Underwent operation at initial hospital	45 (3.7%)	33 (3.9%)	46 (1.6%)	6 (3.1%)	130 (2.5%)
Required Mechanical Ventilation / Intubation	7 (0.6%)	6 (0.7%)	16 (0.5%)	1 (0.5%)	30 (0.6%)
Mean Length of Hospitalization in Days (admits only; sd)	5.5 (sd=7.0)	6.6 (sd=9.1)	5.5 (sd=4.6)	4.4 (sd=4.0)	5.6 (sd=6.3)
Mean Hospital Charges in $USD	5250 (sd=12395)	8550 (sd=33438)	5888 (sd=15652)	7946 (sd=19262)	6255 (sd=19316)
Severity of Injury					
Died at initial hospital or sent to hospice	4 (0.3%)	7 (0.8%)	10 (0.3%)	2 (1.0%)	23 (0.4%)
Discharge Status					
Routine Discharge (Home/ Home Health/Home Care Services)	908 (75.2%)	568 (66.9%)	1985 (68.0%)	114 (58.2%)	3575 (69.1%)
Discharge to Another Acute Care Facility	8 (0.7%)	11 (1.3%)	51 (1.7%)	5 (2.6%)	75 (1.5%)
Discharge to Intermediate or Long Term Care Facility (inc. Skilled Nursing Facilities and Rehabilitation Centers)	3 (0.2%)	3 (0.4%)	4 (0.1%)	1 (0.5%)	11 (0.2%)
Discharge to a Psychiatric Facility	13 (1.1%)	29 (3.4%)	59 (2.0%)	3 (1.5%)	104 (2.0%)
Discharged to Court / Law Enforcement	251 (20.8%)	218 (25.7%)	737 (25.2%)	63 (32.1%)	1269 (24.5%)
Died at initial hospital or sent to hospice	4 (0.3%)	7 (0.8%)	10 (0.3%)	2 (1.0%)	23 (0.4%)
Left Against Medical Advice	18 (1.5%)	11 (1.3%)	63 (2.2%)	7 (3.6%)	99 (1.9%)
Other/Unspecified	3 (0.2%)	2 (0.2%)	10 (0.3%)	1 (0.5%)	16 (0.3%)

Table 3: Type of Injuries Suffered Among Patients Treated for Injuries Caused by Legal Intervention, 2016-2022 in Chicago, Cook County (not including Chicago) and the Remainder of the State of Illinois

Body Region	CHICAGO ONLY (N=1208)	COOK COUNTY W/O CHICAGO (N=849)	REST OF ILLINOIS (N=2919)	NOT ILLINOIS RESIDENT (N=196)	Total (N=5172)
Nature of Injury					
Any Traumatic Brain Injury	144 (11.9%)	90 (10.6%)	404 (13.8%)	23 (11.7%)	661 (12.8%)
Fracture	105 (8.7%)	95 (11.2%)	349 (12.0%)	29 (14.8%)	578 (11.2%)
Dislocation	13 (1.1%)	12 (1.4%)	43 (1.5%)	3 (1.5%)	71 (1.4%)
Internal	39 (3.2%)	28 (3.3%)	74 (2.5%)	5 (2.6%)	146 (2.8%)
Open Wound	212 (17.5%)	125 (14.7%)	628 (21.5%)	42 (21.4%)	1007 (19.5%)
Amputation	0 (0.0%)	0 (0.0%)	1 (0.0%)	0 (0.0%)	1 (0.0%)
Burns	3 (0.2%)	2 (0.2%)	4 (0.1%)	0 (0.0%)	9 (0.2%)
Blood vessels	2 (0.2%)	1 (0.1%)	5 (0.2%)	1 (0.5%)	9 (0.2%)
Crush	2 (0.2%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (0.0%)
Superficial Injury or Contusion	561 (46.4%)	404 (47.6%)	1313 (45.0%)	91 (46.4%)	2369 (45.8%)
Sprain or Strain	125 (10.3%)	120 (14.1%)	382 (13.1%)	31 (15.8%)	658 (12.7%)
Foreign Body	1 (0.1%)	1 (0.1%)	5 (0.2%)	2 (1.0%)	9 (0.2%)
Other Effects of External Causes	78 (6.5%)	26 (3.1%)	214 (7.3%)	8 (4.1%)	326 (6.3%)
Poisoning	10 (0.8%)	3 (0.4%)	28 (1.0%)	0 (0.0%)	41 (0.8%)
Other Toxic Effects	9 (0.7%)	5 (0.6%)	33 (1.1%)	3 (1.5%)	50 (1.0%)

Table 4: Cause of Injury of Patients Treated for Injuries Caused by Legal Intervention, 2016-2022 in Chicago, Cook County (not including Chicago) and the Remainder of the State of Illinois

	CHICAGO ONLY		COOK COUNTY W/O CHICAGO		REST OF ILLINOIS				
	Outpatient (N=1158)	Inpatient (N=50)	Outpatient (N=806)	Inpatient (N=43)	Outpatient (N=2821)	Inpatient (N=98)	Total	Total Deaths	CFR
Cause of Injury[a]									
Sexual Assault Rape	0 (0.0%)	0 (0.0%)	1 (0.1%)	0 (0.0%)	2 (0.1%)	0 (0.0%)	3 (0.1%)	0	0.0%
Bit by Dog	3 (0.3%)	0 (0.0%)	5 (0.6%)	0 (0.0%)	71 (2.5%)	1 (1.0%)	80 (1.6%)	0	0.0%
Blows Manhandling	496 (42.8%)	18 (36.0%)	311 (38.6%)	13 (30.2%)	1070 (37.9%)	25 (25.5%)	1933 (38.9%)	4	0.2%
Blunt Object	42 (3.6%)	1 (2.0%)	15 (1.9%)	1 (2.3%)	62 (2.2%)	3 (3.1%)	124 (2.5%)	0	0.0%
Conducted Energy Device	121 (10.4%)	3 (6.0%)	59 (7.3%)	1 (2.3%)	384 (13.6%)	8 (8.2%)	576 (11.6%)	0	0.0%
Ergonomic and motion related hazard	1 (0.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	4 (0.1%)	0 (0.0%)	5 (0.1%)	0	0.0%
Firearm Gun	17 (1.5%)	8 (16.0%)	8 (1.0%)	12 (27.9%)	26 (0.9%)	24 (24.5%)	95 (1.9%)	18	18.9%
Foreign Object	0 (0.0%)	0 (0.0%)	1 (0.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.0%)	0	0.0%
Gas	3 (0.3%)	0 (0.0%)	6 (0.7%)	1 (2.3%)	14 (0.5%)	0 (0.0%)	24 (0.5%)	0	0.0%
Motor Vehicle	10 (0.9%)	2 (4.0%)	14 (1.7%)	0 (0.0%)	26 (0.9%)	1 (1.0%)	53 (1.1%)	1	1.9%
Overexertion	1 (0.1%)	0 (0.0%)	1 (0.1%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (0.0%)	0	0.0%
Patient did not suffer injury	49 (4.2%)	1 (2.0%)	53 (6.6%)	2 (4.7%)	117 (4.1%)	3 (3.1%)	225 (4.5%)	0	0.0%
Sharp Object	31 (2.7%)	4 (8.0%)	10 (1.2%)	0 (0.0%)	51 (1.8%)	2 (2.0%)	98 (2.0%)	0	0.0%
Slip Trip Fall	16 (1.4%)	3 (6.0%)	8 (1.0%)	1 (2.3%)	58 (2.1%)	4 (4.1%)	90 (1.8%)	0	0.0%
Struck by or Against Object	7 (0.6%)	0 (0.0%)	2 (0.2%)	0 (0.0%)	26 (0.9%)	1 (1.0%)	36 (0.7%)	0	0.0%
Suicide Self Harm	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (2.3%)	3 (0.1%)	1 (1.0%)	5 (0.1%)	0	0.0%
Temperature related injury	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1 (0.0%)	0 (0.0%)	1 (0.0%)	0	0.0%
Travel and Privation - Travel and moti	2 (0.2%)	0 (0.0%)	2 (0.2%)	0 (0.0%)	11 (0.4%)	1 (1.0%)	16 (0.3%)	0	0.0%
Unspecified means of injury	359 (31.0%)	10 (20.0%)	310 (38.5%)	11 (25.6%)	895 (31.7%)	24 (24.5%)	1606 (32.3%))	0	0.0%

[a]Total may exceed column totals because some patients may have more than one cause of injury listed

Table 5: Average Annual Crude Incidence Rates by Race/Ethnicity and Region in the State of Illinois, Outpatient and Inpatient Cases of Patients Treated for Injuries Caused by Legal Intervention, 2016-2022

	CHICAGO ONLY		COOK COUNTY W/O CHICAGO		REST OF ILLINOIS		ALL OF ILLINOIS	
Race / Ethnicity	**Crude Average**	**Rate Ratio**	**Crude Average**	**Rate Ratio**	**Crude Average**	**Rate Ratio**	**Crude Average**	**Rate Ratio**
Black or African American	15.5	10.5	14.5	6.7	22.8	5.5	17.7	5.0
Hispanic/Latino	2.5	1.7	4.5	2.1	2.9	0.7	3.1	0.9
White Non-Hispanic	1.5	REF	2.2	REF	4.1	REF	3.5	REF
Other	6.6	4.5	3.2	1.5	4.8	1.2	4.9	1.4
Total	6.3	~	4.9	~	5.5	~	5.6	~

Figure 1: Monthly Trend in the Rate of Civilians Injured During Legal Interventions by Geopolitical Region, 2016-2022 in Chicago, Cook County (not including Chicago) and the Remainder of the State of Illinois

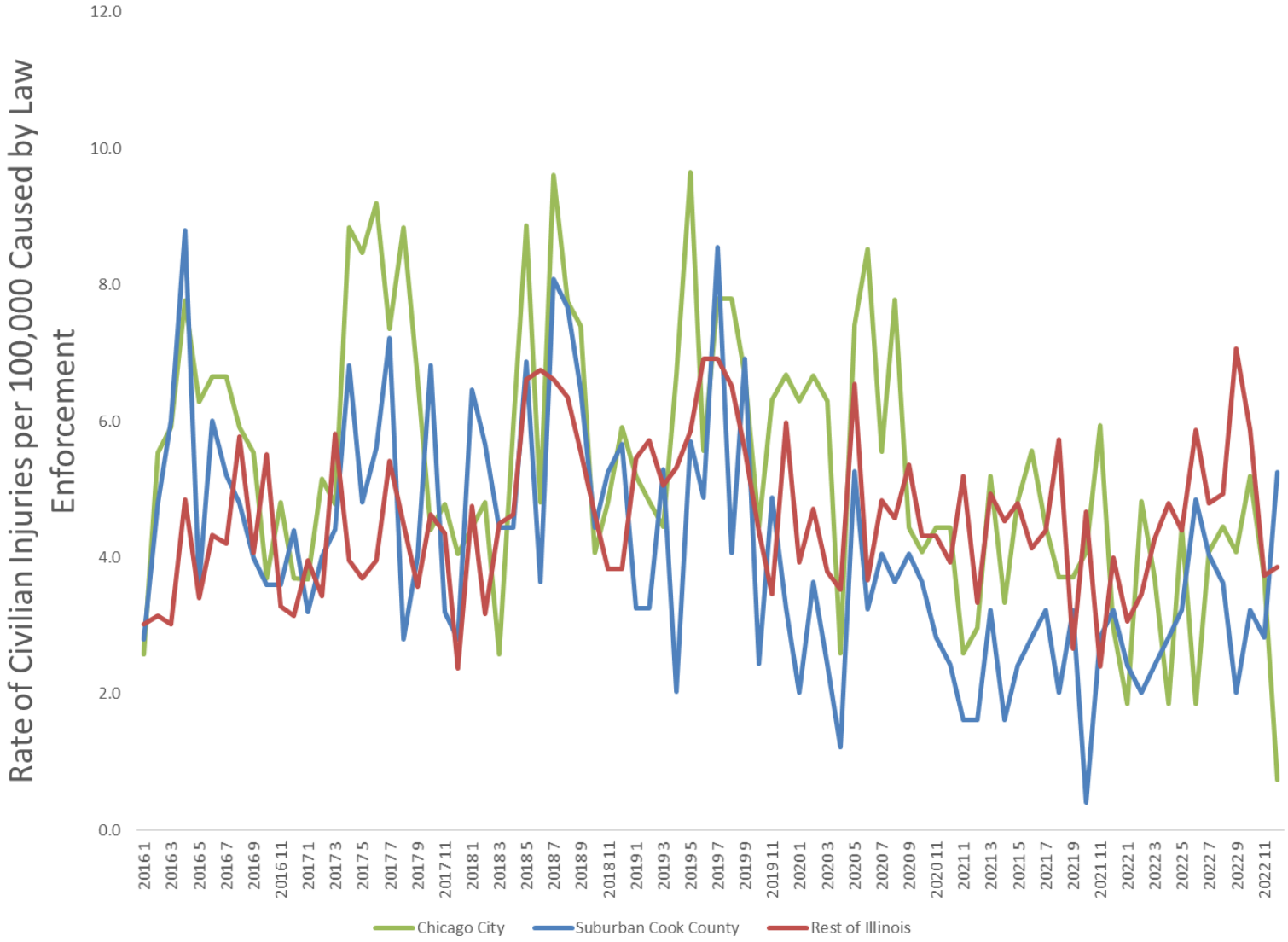

Figure 2: Monthly Trend in the Rate of Civilians Injured During Legal Interventions by Race/Ethnicity per 100,000 Residents, 2016-2022 in Chicago, Cook County (not including Chicago) and the Remainder of the State of Illinois