LET THE PEOPLE KNOW THE FACTS
AND THE COUNTRY WILL BE SAFE.

ABRAHAM LINCOLN
Law Enforcement Epidemiology

Law enforcement epidemiology is the study of the acute and long-term effects of injuries and death during interaction action with law enforcement. It assesses mechanism and intent of injury and mortality among law enforcement, suspect, and bystander using data from electronic medical records, worker’s compensation claims, and survey data.

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Project

Aims

To build a comprehensive surveillance system to better characterize the magnitude of civilian and law enforcement injuries that occur each year in the U.S. and to guide policy reform that addresses police use of force tactics and strategies to build community trust in the police.
A Public Health Approach to Law Enforcement Epidemiology

Surveillance

What is the problem?

Reporting

What is the cause?

Analysis

What works?

Recommendations

How do you do it?

Problem

Response
Law Enforcement Epidemiology Project at the University of Illinois at Chicago

Project Goal

To provide surveillance data for the U.S., Illinois and Chicago on civilians injured during interactions with law enforcement and officers injured on the job. Because comprehensive data on civilian non-fatal and fatal injuries caused during interactions with law enforcement is lacking in the U.S., this site primarily focuses on civilian injuries.

Objectives

• Surveillance
  • Establish an active and sustainable surveillance program that will serve as a model for other states across the country.

• Reporting
  • Identify barriers to reporting.

• Analysis
  • Describe long-term impacts on individuals following an injury caused by law enforcement personnel.

• Recommendations
  • Develop policy recommendations for police reform

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Public Health Surveillance Defined

The ongoing, systematic collection, analysis, and interpretation of health-related data essential to planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those responsible for prevention and control.

Nationally, surveillance data relating to civilian injuries has several limitations:

- Undercounts both non-fatal and fatal cases by up to 50%+
- Police sources underestimate severity of injury
- Provide no clinical information about non-fatal injuries
- Provide no data on long-term impacts on individuals and communities
- No investment in research focusing on civilian injuries
- Little is known about risk factors and differences in control tactics because of paucity of research
- Focus is almost exclusively on firearm related deaths
Data Sources for Public Health Surveillance

Civilian Data

State & Local Data
- Ambulance
- Police Crash
- Hospital Data
- Death Records
- Media Reports
- Court & Investigation Data

National
- Ambulance
- Police Crash
- Use of Force
- Hospital Data
- Death Records
- Arrest Related Deaths
- Mortality in Correctional Institutions
- Media Reports

Law Enforcement Personnel Data

Local Data
- Police Crash Reports
- Hospital Discharge
- Worker’s Compensation Data

National Data
- BLS Non-Fatal Injuries
- BLS Fatal Injuries
- NIOSH Death Records
- FBI Fatality Data

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Law Enforcement Epidemiology Project

Snapshot: the last 20 years of law enforcement activities in the United States

- **1,500,000** Civilians have been injured during contact with law enforcement.
- **8,768** At least 8,768 civilians have been killed by law enforcement officers.
- **300,000** Law enforcement officers have been injured after experiencing an assault on the job.
Law Enforcement Epidemiology

Summary of U.S.-level data, 2001-2018

In the U.S., during the given years an estimated 1 million civilians experience police-related threat of or use of force resulting in a conservatively estimated 20,000 non-fatal injuries requiring hospital treatment and 100-500 deaths. Both white hemorrhage and Black hemorrhage American adults were found to be more frequent victims of use of force during police-related incidents. Bureau of Justice Statistics data shows nearly 26,000 police-related injuries and 10,000 police-related deaths. For civilians, it is only an estimated 3,000 to 4,000 serious injuries due to law enforcement and it is more snow every year as the use of force by law enforcement increases.

National Level Data

Ambulance Data

Prehospital Ambulance Runs

State and Local Level Data

We identify several data sources, accordingly to establish strengths and limitations, data dictionaries and ICD codes for identifying cases. Civilian Injury Tree View: Prehospital data | Hospital data | Death records | Media reports

CIVILIAN DATA

Data Sources

Facts and Figures

Research

Policy

POLICE DATA

Data Sources

Facts and Figures

Research

Policy
Law Enforcement Safety

Snapshot: During the most recent year of complete data, in 2018 law enforcement suffered...

- 56 officers were killed in the line of duty.
- 18,805 officers suffered injuries from accidents.
- 49,270 officers suffered injuries from assaults.

Available Information

The 2018 data includes deadly officer data patterns and provides by role that includes police, fire, and correctional officers across the United States. The data also includes information on injuries from accidents and assaults.

Higher Risk

In 2018, sworn enforcement officers consistently had the highest claim rates for work-related injuries.

Falls and Motor Vehicles Are Most Common Causes of Injury

The 2018 data shows that falls and motor vehicle accidents were the most common causes of injury for sworn officers.

Summary of National Data

Below are data tables that provide summarized data from the 2018 data analysis.

- Fatality: Fatality and Fatally Injured Police by Gender, Race/Ethnicity, and Age Group
- Fatality: Fatality and Fatally Injured Correctional Officers by Gender, Race/Ethnicity, and Age Group
- Fatality: Fatality and Fatally Injured Firefighters by Gender, Race/Ethnicity, and Age Group
- Summary of Claims Data: By Occupation
- Summary of Claims Data: By Gender, Race/Ethnicity, and Age Group
Some Definitions
Law Enforcement Epidemiology – Intent of Injury

ICD 9- E970-979
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 legal execution

ICD 10 – Y35
• any injury sustained as a result of an encounter with any law enforcement official, serving in any capacity at the time of the encounter, whether on-duty or off-duty. Includes: injury to law enforcement official, suspect and bystander
Civilian Data - Results
Based on Bureau of Justice Statistics, each year:

- 50 million persons have contact with law enforcement personnel during traffic stops, street stops, arrests, crashes, or residential calls.
- 15% of these events involve threat of or use of force.
- Estimated 250,000 civilians are injured annually.
- 80,000 of these injuries are treated in hospitals.
National Data

Civilians Killed by Law Enforcement, U.S. 1999-2019

Washington

CDC WONDER
Based on data from our surveillance project, each year in Illinois:

- 10-20 deaths
- 70-100 serious injuries
- 1000 injuries requiring treatment in a hospital
- Less than 25% are taken into custody after discharge.
Legal Intervention by Sex & Age Group in Illinois from 2016-2020

(N=3548)

- Male: 17%
- Female: 83%

- 0 to 4 years: 9.50%
- 5 to 9 years: 15.40%
- 10 to 14 years: 34.40%
- 15 to 19 years: 20.30%
- 20 to 24 years: 12.10%
- 25 to 34 years: 5.70%
- 35 to 44 years: 5.70%
- 45 to 54 years: 5.70%
- 55 to 64 years: 5.70%
- 65 to 74 years: 5.70%
- 75 years and above: 0.50%
Legal Intervention by Race & Ethnicity in ILLINOIS from 2016-2020

- The rate of fatal and non-fatal injury involving African Americans is consistently 5-12x higher than all other groups, including:
  - Women
  - Non-urban areas
  - Across age groups
In Illinois, nearly 80% of individuals injured during encounters with law enforcement are uninsured or covered by Medicaid. These are proxies for low income in medical data systems. Among all patients, <30% are uninsured or have Medicaid.

This corresponds with national data showing that police activity is concentrated disproportionately in low income communities, as are police stops, search and seizures, arrests, charges and imprisonment.
Legal Intervention Cause of Injury 2016-2020

- In non-fatal cases, nearly all cases do not involve firearms.

- For fatal cases, 85% involve the discharge of a firearm (CDC data).

- **Firearms**
- **Explosives**
- **Gas**
- **Blunt Objects batons, flashlights**
- **Piercing Instrument**
- **Blows or Manhandling**
Legal Intervention Injuries, Illinois 2016-2020

- For every fatal injury there are 60-80 non-fatal cases
- Injuries primarily involve the head or upper extremities.
- 13% suffer traumatic brain injury
Legal Intervention Injury Trends by Region

Number of Civilians Injured by Law Enforcement

- Chicago
- Suburban Cook County
- Rest of Illinois

Years: 2016-2020
Legal Intervention Risk Factors

Rate of injury is nearly equivalent across three main regions – Chicago, Suburban Cook County and the rest of Illinois.

• This is not exclusively a problem with Chicago Police as frequently claimed.

Risk factors identified across all of Illinois include:

• Residents of lower income communities
• Black / African-American residents
• Persons with substance use disorders
• Persons diagnosed with psychosis or major depression
• Persons with paralysis and neurological disorders
• Summer months
Brief Research Highlight: Law Enforcement Personnel

In addition to research focusing on civilian injuries, we conduct occupational health research to identify risk factors and safety controls to reduce injuries among law enforcement personnel.

In Illinois,

- 80% of injuries caused by preventable non-violent sources
- Correctional officers have highest risk of occupational injury
- Median days of lost work 10-12 days
- Most common causes of injury are falls, motor vehicle crashes, overexertion, being struck by or caught between objects.
- Most injuries involve extremities
- Most officers suffer substantial permanent disability
- Safety controls exist, they just need to be implemented!
Next Steps
History of Applying for Funding to Develop a System to Track Acute and Long-term Effects of Legal Interventions

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Current and Future Research

Expand surveillance model to other states – MN, MI, IN, WI
Partnering with other researchers that focus on different elements using law enforcement data sources – Center Policing Equity
Research on long term effects of injuries on civilians
Stakeholder interviews regarding barriers to reporting civilian injuries
Expanding research on correctional officers and security officers
New Insights Provided by Surveillance System

New Insights: Current data systems are limited and focus on fatal incidents. Our surveillance system has shown that for every death, there are approximately 60-80 non-fatal injuries that require treatment in a hospital, and an additional 50 injuries that do not require hospital care. We have used our surveillance system to:

Link datasets to evaluate underreporting of fatal cases, describe clinical outcomes following crashes involving police vehicles, and quantify the universe of civilian injuries.

Provide current and accessible data to stakeholders that is easy to use and interpret.

Assess temporal trends across jurisdictions and incidence data by ZIP code, including data on ethnic disparities.

Highlight the severity of non-fatal incidents, including the large proportion of traumatic brain injuries.

Enumerate the disproportionate burden on African-Americans.

Demonstrate that equivalent high rates of injury persists outside of major urban centers.

Identify various risk factors for injury, and correlate mechanism of assault with severity of injury.

Describe research needs relating to safer control tactics, efficacy of de-escalation tactics, and long-term adverse outcomes on affected individuals and communities.