

SURVEILLANCE OF, AND THE IMPACT OF COMMUNITY POLICING ON
ARREST-RELATED DEATHS (ARDS):
Exploring the surveillance of ARDs and the opportunities to prevent them in the United States

Joshua R Stovall

A thesis submitted in partial fulfillment of the
requirements for the degree of

Master of Public Health

University of Washington

2016

Committee:

Charbel El Bcheraoui

Hmwe Kyu

Program Authorized to Offer Degree:
Global Health: Health Metrics and Evaluation

©Copyright 2016
Joshua R Stovall

University of Washington

Abstract

SURVEILLANCE OF, AND THE IMPACT OF COMMUNITY POLICING ON
ARREST-RELATED DEATHS (ARDS):

Exploring the surveillance of ARDs and the opportunities to prevent them in the United States

Joshua R Stovall

Chair of the Supervisory Committee:

Dr. Charbel El Bcheraoui

Global Health

Background: In 2015, 1,356 deaths resulted from arrest-related interactions with US law enforcement – a near two-fold increase in known deaths in the previous ten years, according to open-sourced records. Strong public interest and controversy surrounding recent arrest-related deaths (ARDs) in the United States highlights the importance of a better understanding of the public health burden, the trends, and the factors associated with these ARDs. Indeed, little is known about these deaths or their relationship to policing practices. Our aim was to evaluate the official surveillance system for identifying, reporting, and monitoring ARDs. Then, using open-sourced death records, we sought to determine the association between ARDs and policing practices, specifically community-based policing.

Methods: We first evaluated the current surveillance system, the Deaths in Custody Reporting Program ARD collection (hereafter DCRP), assessing the system attributes and its level of usefulness to public health. Next, to investigate the impact of Community Policing we constructed a cross-sectional dataset using counts of ARDs from the open-sourced database, Fatal Encounters, a public-driven database documenting deaths through police interactions. We first compiled a panel data set from three periods of the Law Enforcement Management and Administrative Statistics (LEMAS) survey on ARDs. However,

due to poor overlap between panels, changes in survey design, and diminishing data quality in earlier years, we focused only on the most recent survey. We case-matched records of ARDs occurring between January 2012 and April 2016 from Fatal Encounters to the LEMAS responses, collected in 2012 from 2,826 law enforcement agencies. We used arrest counts from the 2012 Uniform Crime Reporting Program (UCRP) with imputed estimates for observations with incomplete reports. We included Census-derived community level characteristics for education, race, and poverty. We modeled the rate of ARDs as our outcome of interest, investigating the effect of Community Policing and other covariates.

Findings: The DCRP falls short of the level of completeness and quality necessary for any practical application as a surveillance system. State counts are reported on a quarterly basis but greatly underestimate the true burden. When restricted to homicides by law enforcement – a subset of ARDs – the DCRP was found to capture fewer than half of all deaths in the United States between 2003 and 2011. No studies have been identified that employ DCRP data to assess any prevention or control efforts, and no changes in policy or agency level practices have been attributed to data collected through the DCRP. 2,826 agencies completed the LEMAS in 2012. Of these, 813 (29%) were linked to one or more ARDs over the observed period. These agencies accounted for 3,380 (60.4%) of the reported ARDs in following years, with the remaining 2,219 unmatched to the law enforcement agencies sampled. Using a negative binomial model to account for the over-dispersion in our outcome, we found that greater adherence to the community policing model is associated with a reduced rate of ARDs (by a factor of 0.61; 95% CI: 0.42 to 0.87). Larger policing agencies and greater county-level poverty were both associated with higher rates of ARDs. For example, agencies with 100 additional officers have an estimated 1.65 times higher rate of ARDs than their smaller counterparts. Similarly, communities with 10% greater poverty have a 1.90 times higher rate. No significant association was observed between higher county rates of African-Americans and ARD rates.

Table of Contents

Introduction	6
Literature Review	7
Part I - Evaluation of the DCRP ARD Collection	8
ARD Surveillance History.....	8
Current Reporting System for ARDs.....	8
Public Health Significance	9
Purpose & Operation of System	9
System Attributes.....	9
Flexibility	11
Quality	11
Acceptability.....	11
Sensitivity	12
Specificity and predicted value positive	14
Representativeness.....	15
Level of Usefulness	16
Part II - Analysis of agency-level data and the impact of Community Policing.....	17
Conceptual Model.....	17
Methods.....	17
Study Design.....	17
Data sources.....	18
Study variables	18
Outcome	18
Statistical Analysis.....	20
Results.....	20
Discussion.....	22
Limitations.....	22
Conclusions	22
Bibliography	24

ARD Definition: An arrest-related death is defined as any death (e.g., gunshot, wound, cardiac arrest, or drowning) that occurs during an interaction with state or local law enforcement personnel, including those that occur i) during an attempted arrest or in the process of arrest; ii) while the person is in law enforcement custody (before transfer to jail); iii) shortly after the person’s freedom to leave is restricted. Note, not all deaths that occurred during an interaction with state or local law enforcement personnel are reportable to the ARD program. The scope excluded four general situations: (1) deaths of bystanders, hostages, and law enforcement personnel; (2) deaths by federal law enforcement agents; (3) deaths of wanted criminal suspects prior to police contact; and (4) deaths by vehicular pursuits without any direct police action (Banks, 2015).

Abbreviations:

ARD	Arrest-Related Deaths
BJS	Bureau of Justice Statistics
CDC	Centers for Disease Control and Prevention
DCRP	Deaths in Custody Reporting Program
DICRA	Deaths in Custody Reporting Act
DOJ	Department of Justice
FBI	Federal Bureau of Investigation
FE	Fatal Encounters
LEA	Law Enforcement Agency
LEH	Law Enforcement Homicide
LEMAS	Law Enforcement Management and Administration Survey
PVP	Predicted Value Positive
SHR	Supplementary Homicide Report
SRC	State Reporting Coordinator
UCRP	Uniform Crime Reporting Program

Introduction

Arrest-related mortality in the United States is an issue of increasing public interest. While the health burden alone is considerable, the nature of the deaths where lives are lost as a direct result of interactions with those entrusted to protect is provoking. The issue is further complicated by the racial and health disparities of those deaths and, most unfortunately, by the dearth of reliable data regarding the use of force, particularly in fatal outcomes. These incidents undermine the trust between the local police and the communities they serve. The high frequency and often unclear motives and circumstances surrounding such incidents has prompted a national movement (Black Lives Matter) as well as the rapid adoption of agency level interventions, such as Community Policing, body worn cameras, and Implicit Bias Training. These interventions, however, are not without costs, both financially and in terms of opportunity of foregone interventions. Identifying and understanding those tools that can minimize or prevent similar future incidents is critical if we hope to rebuild trust and ensure justice and accountability.

Arrest-related deaths (ARDs) occur most commonly among men, ages 25-34 (Burch, 2011). Using a national-level source of justifiable law enforcement homicides (LEHs) in the United States – Supplementary Homicide Reports (SHR) – the Bureau of Justice Statistics estimated that 31.8% of the ARDs reported from 2003 to 2011 were African-American, more than 2.5 times the expected proportion given population estimates. In 2015, approximately 1,356 persons died in arrest-related interactions with US law enforcement – a near two-fold increase in known deaths in the previous ten years according to

open-sourced reports through Fatal Encounters (Burghart, 2012). This recent and steep increase in ARDs necessitates a better understanding of the cause – be it an increase in deaths or improved surveillance in recent years. Irrespective, it is critical that we identify factors that can reduce and prevent these deaths.

The DCRP is the only official collection of ARDs. We attempt to provide a full evaluation to strengthen the current surveillance. Past efforts to assess this program have focused only on justifiable homicides and, largely, the completeness of the collection (Klinger, 2008; Fyfe, 2002). Most recently, the DCRP was evaluated by the BJS, though also focusing on the level of completeness and restricting to LEHs (Banks, 2015). To date there has been no gross evaluation of this ARD surveillance system since its inception. Furthermore, we examine agency level characteristics to assess the impact of the Community Policing intervention on ARDs to inform policy makers on strategies to decrease ARDs. Specifically, this study seeks to determine if greater use and adherence of the Community Policing model is associated with a lower burden of ARDs captured through open-sourced records.

Literature Review

The Bureau of Justice Statistics (BJS) defines ARDs as civilian deaths that occurred prior to, during, or following an arrest event or noncriminal incident and that were attributed to any use of force by state or local law enforcement; injuries sustained while attempting to elude law enforcement or injuries incurred while in custody; self-imposed events, such as suicides, accidents caused by the decedent, and intoxication; or, medical conditions or illness (Banks, 2015). Unlike many other collection efforts in the United States, the DCRP is unique in its inclusion criteria. Several reporting systems exist that capture a component of these incidents (CDCs WONDER and WISQARS) while others are more comprehensive but restricted in focus to subgroups of ARDs (i.e. the SHR and National Violent Death Reporting System (NVDRS)). The DCRP – under the administration of the BJS – is the only official system that attempts to collect national-level counts of all types of ARDs.

Past studies have focused on homicide by law enforcement (Binder & Fridell, 1984; Binder & Schart, 1980), and police shootings (Donahue & Horvath, 1991; Fyfe, 1981; White, 2002), though, with the exception of less than lethal uses of force (i.e. Tasers, and oleoresin capsicum spray), no studies have examined the impact of policing interventions on ARDs. This is likely due to limited reliable data. In an assessment of the ARD program the BJS estimated that, at best, only 49% of all law enforcement homicides were recorded over the study period and that, even when estimates from multiple official measures were pooled, researchers found that fewer than three in four LEHs were reported to either surveillance system (Banks & Planty, 2015). Earlier research suggests that national assessments of justifiable homicides are not complete or sufficiently reliable to adequately investigate ARDs (Fyfe, 2002). Klinger compared the aggregate justifiable counts reported by the FBI's SHR and DCRP data for a three-year period from 2003-2005 (2008). Consistent with Fyfe's assessment of police use of deadly force, Klinger reports inconsistent numbers for a substantial number of states over the three-year period.

Necessity for more complete and accessible data has led to a recent expansion in open-sourced collection efforts, often derived from or supported with media accounts. These collections have the advantage of availability through recent years, more granular levels of evaluation, and, to some extent, they avoid the issue of self-reporting by the officer or agency involved – the primary method for many records reported to the DCRP. Open-sourced data collection efforts include the Stolen Lives Project, initiated by the Anthony Baez Foundation and the National Lawyers Guild; the Fatal Encounters database started by Brian Burghart in 2012; and Killed by Police, established in 2013; among many others. Additionally, several news publications, notably the Washington Post and the Guardian, have begun researching and maintaining statistics on police shootings in recent years.

Another recent shift has been toward the examination of the racial disparities of the victims and uses of force. In a working paper, Fryer explored racial differences in police use of force in New York City, finding increased non-lethal uses of force among blacks and Hispanics, but no significant difference in the most extreme uses of force by race (2016). Using the US Police Shootings Database, another open-sourced collection effort, Ross found that, when examining the risk of death by police shootings, black unarmed men are about 3.49 times more likely to being shot as their white unarmed counterparts in the United States (2015). In a 2014 report, journalists with ProPublica documented a national racial disparity among young men, ages 15 to 19, using the FBI's SHR. They found that young black males were shot dead by police at 21 times the rate of their white counterparts (Gabrielson, Gochowski, & Sagara, 2014).

To date there has been no comprehensive evaluation of the DCRP program or attempt to assess the impact of any interventions on ARDs. This evaluation builds off what is known from previous assessment of LEHs, considering a range of program attributes to provide a holistic account of the DCRP surveillance system. Similarly, the analysis seeks to explain the impact of Community Policing if implemented for the purposes of reducing the frequency of ARDs.

Part I - Evaluation of the DCRP ARD Collection

ARD Surveillance History

The DCRP was implemented by the BJS in 2003 in response to the Deaths in Custody Reporting Act of 2000 (DICRA; P.L. 106-297). This program relies on State Reporting Coordinators (SRCs), staff working in all 50 states and the District of Columbia, to collect and report all ARDs to the BJS. Discretion is given to SRCs regarding methodology and is often subject to availability of resources, resulting in a variety of state-specific pathways for identifying ARDs and collecting data for these deaths. Though the DCRP was designed to be a census of all deaths that occur in the process of arrest in the United States, the variability in the identification and reporting of this data along with the varied participation from local LEAs and medical examiner's/coroner's offices has raised doubts about whether these methods were capable of capturing a census of ARDs and LEHs.

Although the BJS continues to collect information on deaths of individuals in custody, data collection for the ARD program was suspended March 31, 2014 pending review of the program, essentially eliminating the coordinated collection of ARDs.

Current Reporting System for ARDs

Today, the official reporting of ARDs is guided by the Deaths in Custody Reporting Act of 2013, reauthorized in 2014 and signed into law in early 2015 (P.L. 113-242). It mandates that all states receiving DOJ assistance report all ARDs on a quarterly basis. This law was previously in effect from 2000 through its expiration in 2006. The notable difference with this reauthorization is the financial penalty for non-compliant agencies, up to 10% of DOJ funding may be withheld in such events. Despite this reauthorization, data collection for ARDs is still currently under suspension while the program is in review.

At present, the BJS, in partnership with RTI International, is conducting a pilot study to determine the most efficient and comprehensive means of identifying ARDs and is collecting information about individuals and the circumstances regarding their deaths (Banks, 2015).

Public Health Significance

More than 4,800 ARDs occurred between 2003 and 2009, the last year of DCRP figures (Burch, 2011). In the following six years, open-sourced records indicate that this toll has surpassed 10,000 with over 1,356 citizen deaths in 2015 alone (Burghart, 2012). This represents a near 2-fold increase in annual arrest-related mortality over the last decade.

In qualitative review of the media accounts, official agency narratives, and coroners' reports, it is apparent that decedents experiencing severe mental illness and/or the effects of substance abuse at the time of death is not uncommon. More empirically there is a significant racial disparity, as noted by previous researchers, as well as the BJS in the SHRs, with African-Americans and Hispanics apportioned a larger than expected share of the mortality than non-Hispanic whites (Fryer, 2016; Ross, 2015).

There is also a financial component to consider. To our knowledge, no expenditure review has taken place to assess the costs attributable to legal settlements for police misconduct resulting in citizen deaths. Wrongful deaths cases constitute a significant, and, in many cases, growing share of the legal burden borne by cities, nearing or exceeding the combined costs for other misconduct settlements. In November of 2015, the Washington Post documented 31 awards and civil settlements to families resulting from police shootings. The amounts ranged from \$7,500 to \$8.5M. At the time of reporting, an additional 12 cases were pending (Rich, Hawkins, & Higham, 2015). With examples going back to February of 2013, the National Police Accountability Project (NPAP), documented another \$55.2M in awards and settlements (2016). Understanding the nature of these deaths, and particularly the risk factors for ARDs, is in the financial interests of local governments and LEAs.

Purpose & Operation of System

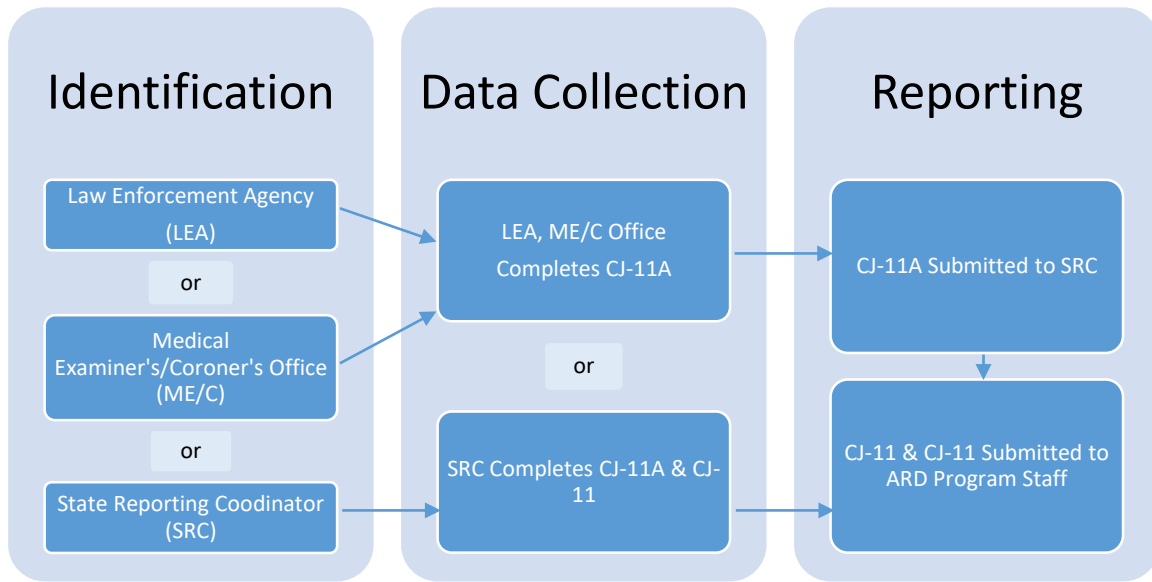
The leading aim of the DCRP is to survey and report all ARDs in the United States. This surveillance is intended to support a better understanding of the circumstances surrounding these deaths, including the details leading up to the fatal interaction between the decedents and law enforcement involved and characteristics of the decedents. Such knowledge could inform training and policies to support safe, accountable interactions between law enforcement and the communities they serve. Accurate and comprehensive accounting of deaths that occur during the process of arrest is critical for LEAs to demonstrate responsiveness to the citizens and communities that they serve through transparency of law enforcement policing practices as well as accountability for the actions of officers.

System Attributes

2011, the last year of available data, marked the highest level of state reporting to the ARD program with 47 participating US states and the District of Columbia. The collection methods vary widely across and within reporting states, and at present only three – Texas, California, and Maryland – have implemented mandatory reporting requirements. The DCRP program is straightforward in scope, though through variations in the identification and reporting of incidents both across and within states, the process has taken many forms.

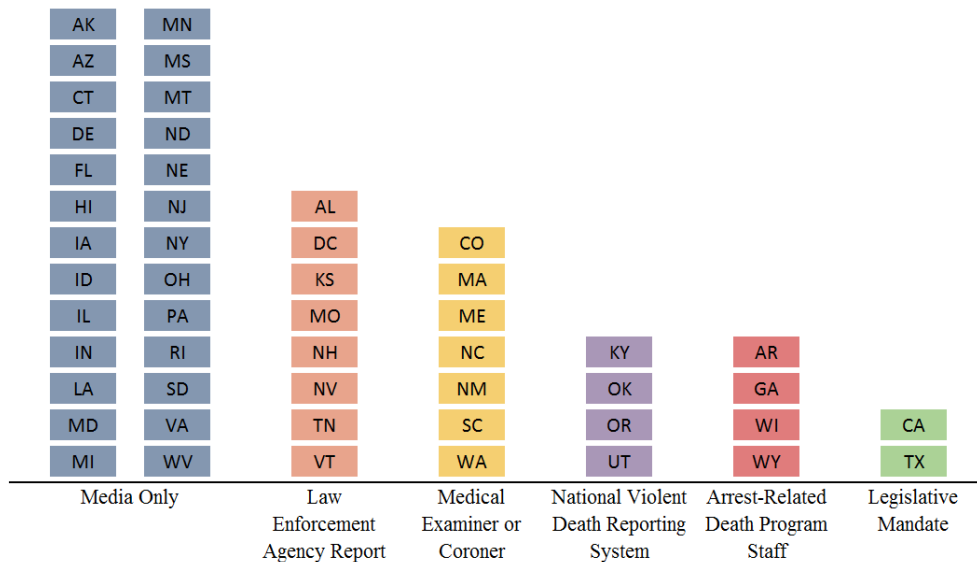
When a reportable death is identified, State Reporting Coordinators (SRCs) obtain information about the circumstances of the death and submit the information to BJS via an incident report form, CJ-11A, and quarterly, via a state count summary, CJ-11 (Figure 1). The CJ-11A collects identifying information, demographic characteristics (sex, age, ethnicity, race), weapon used (if cause of death), time, location, manner of death, cause of death, and medical evaluation indicating the presence of a controlled substance. Questions also address behavioral observations (did the deceased appear intoxicated, exhibit any mental health problems, verbally threaten, etc.). The CJ-11A was designed to ensure that the incidents reported meet the definition of an ARD and other inclusion criteria.

Figure 1, A Simplification of the ARD Identification and Reporting Process



In figure 2, we see that the primary method for identifying ARDs varies substantially by state. As of 2011, 26 SRCs relied, principally, on media reports to identify deaths for follow-up. This method depends on the assumption that the media reports both i) all ARDs, and ii) with sufficient detail that the events can be identified as a potential ARD to be investigated. Note, in 2015 Maryland passed a public safety bill, HB 973, to join California and Texas in mandating the reporting of all deaths involving a law enforcement officer. Once identified, the SRCs collect details of the incident from the entity responsible for completing CJ-11A. This too varies substantially, with 20 states delegating LEAs to be responsible, 16 states retaining responsibility with the SRC, and nine assigning external or multiple entities responsibility for reporting. Note: in 2011, four states did not submit ARD data.

Figure 2, SRC Primary Methodology for Identifying ARDs by State, 2011



Source: Duren Banks, Caroline Blanton, Lance Couzens, Devon Cribb, RTI International, March 2015

While the BJS's Data Quality Profile found that 47 states and the District of Columbia reported state summary counts in 2011 (Banks, 2015), they did not comment on the level of non-reporting at the agency level or throughout the year. Furthermore, the poor quality and lack of completeness for the incident reports submitted to the SRCs and then to the BJS indicates either a lack of training or a lack of acceptability with the measurement tool.

Other attributes that might affect the overall acceptability of the program once reinstated include the burden of data collection and reporting; the cost of training, case investigation, and time documenting incidents; and community pressure for participation, compliance and transparency. However, because these fatal occurrences are fairly rare for most LEAs in a given year, the burden and cost are expected to be relatively minimal.

The 2015 pilot study being conducted by the BJS and RTI International builds off of recent data collection improvements in the CJ-11A and appears set to collect several data elements regarding the use of force; the decedent's behavior (i.e. violent actions, signs of mental illness or substance abuse); and – if the decedent was believed to be armed – whether or not he or she displayed, discharged or used the weapon. These pilot incident reports are uncomplicated and, if adopted, are expected to have a low estimated time burden (32 minutes for LEAs and 24 minutes for Medical Examiner's/Coroner's Office) similar to the current reporting burden (Planty, 2015).

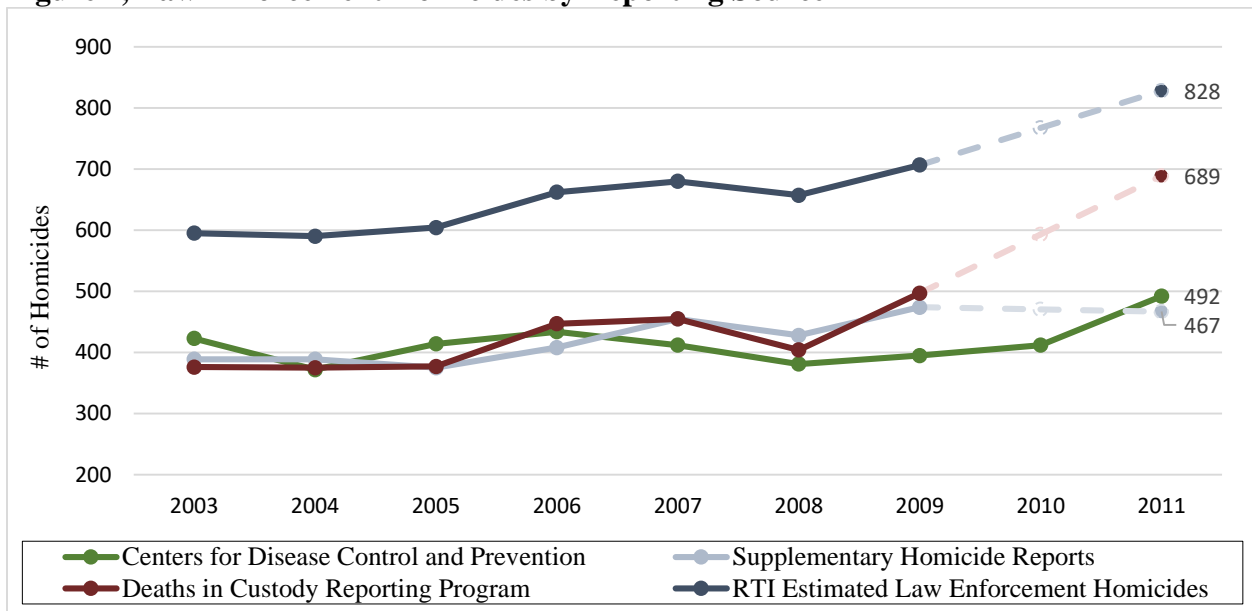
This pilot study does not consider other surveillance system attributes, nor do the authors seek to address the wide state-by-state variance in how deaths are identified and incident data is collected, the principal challenge in coordinating a national enumeration of deaths. To our knowledge, there are no clear incentives by the BJS to address the non-responsiveness that occurs across specific data elements, including “the most serious offense with which the deceased was being charged at the time of death.”

Pressure from the community has led to state-mandated reporting in California, Texas, and, more recently, Maryland. As this public health issue remains in focus, largely through high profile and controversial events, pressure will likely increase for other states to require reporting with incentives that extend beyond the federal mandate.

Sensitivity

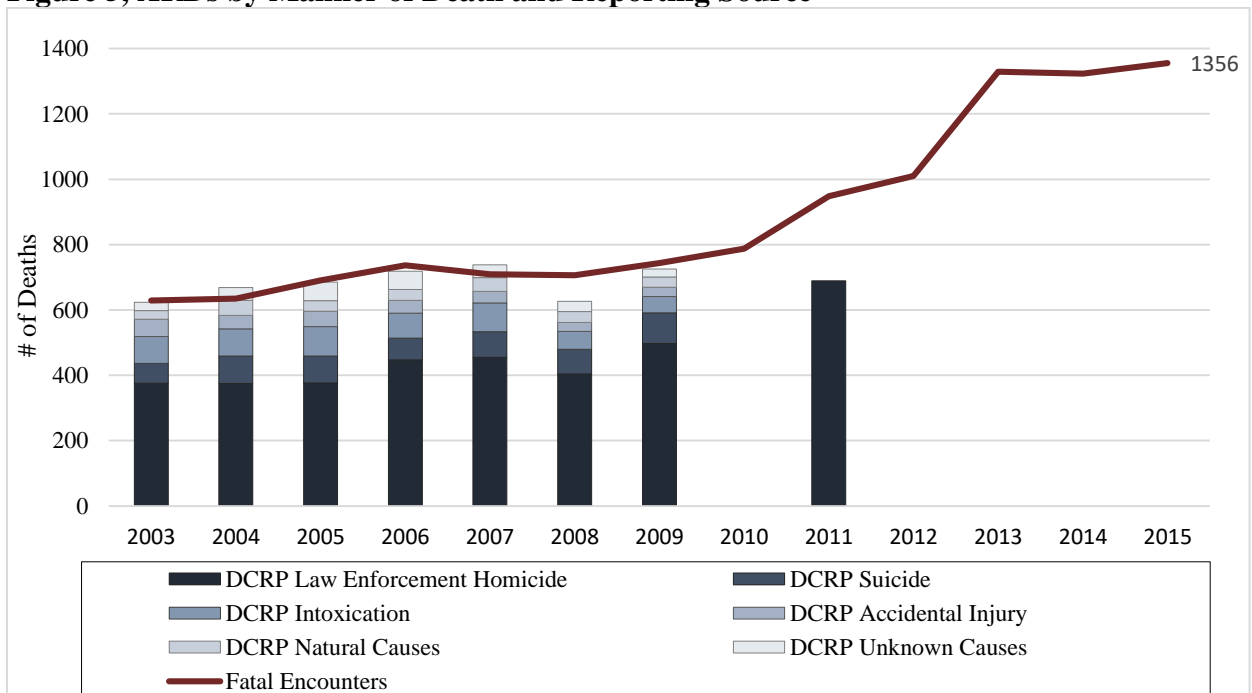
In March of 2015, RTI International issued a technical report where they evaluated the coverage of the program, case-linking fatalities in the ARD collection to SHRs. The SHRs provide additional details about each homicide incident, including the jurisdiction, time, victim and offender demographic characteristics, weapon, the circumstances surrounding the incident (e.g. argument, robbery, gang-related), and, when known, the relationship between the victim and offender. While the DCRP records all manners of death that occur in the process of arrests, the SHR is restricted to LEHs. To make this comparison, the authors restrict both data sets to homicides by law enforcement. In their study period (2003-2009 and 2011), the authors found that the DCRP captured only 36% to 49% of all LEHs in the United States. When the researchers pooled data from both sources this coverage increases, at best, to 72% – failing to capture over a quarter of the estimated deaths. In figure 4 we see that, over time, the ARD collection has improved but is still well below the author's expected universe of LEHs. The RTI technical report did not find any statistical variations in coverage for observed homicides based on the regional geographic differences or the primary identification method used in 2011 (Banks, 2015). We also see that the CDC WONDER counts closely follow the SHR.

Figure 4, Law Enforcement Homicides by Reporting Source



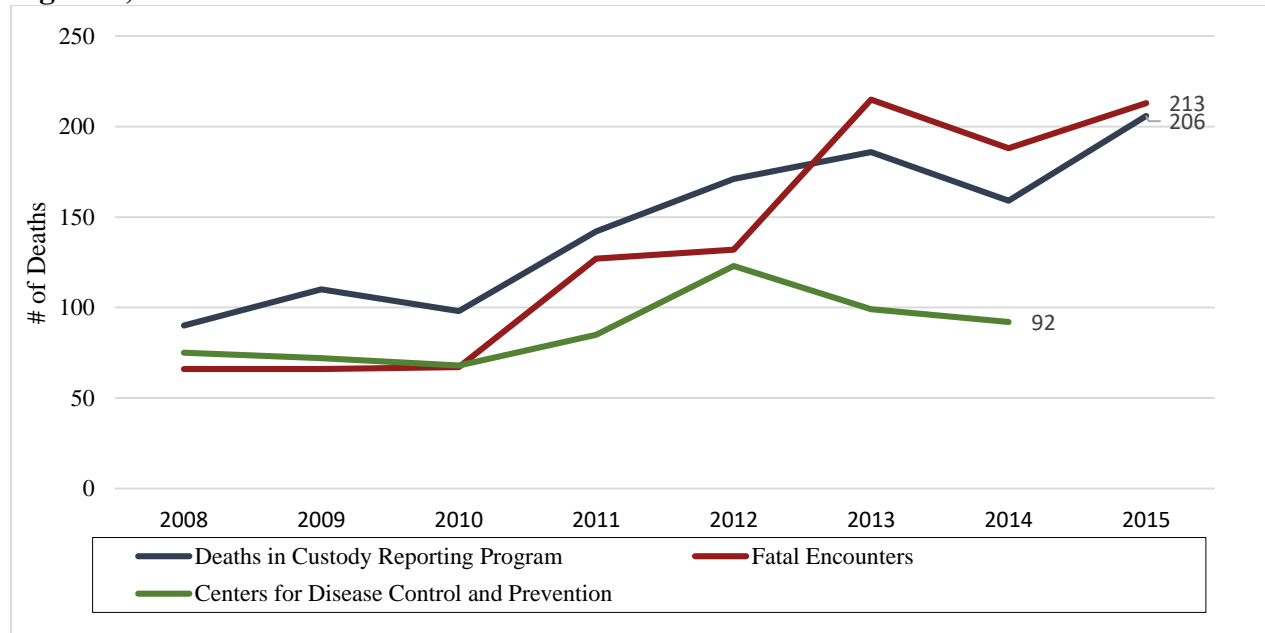
This assessment, however, only evaluates the capture of LEHs. As the investigators note, if they were to include ARDs due to illness, overdose, accident or other manners of death as included in the BJS’s definition of reportable ARDs, their coverage estimates would be significantly reduced. Comparing the full DCRP collection to the open-sourced count recorded through Fatal Encounters (figure 5), we see that these systems are closely matched and are both likely to be significantly underestimating the universe of ARDs. Additionally, we see a stark increase in the number of observed ARDs in recent years via the open-sourced records, a trend that – because of a dearth in accessible data or summary reports – has been missed by the official surveillance system.

Figure 5, ARDs by Manner of Death and Reporting Source



To understand if this increase is a reflection of a rise in mortality or increased sensitivity, we focus on the State of California for their comparatively strict requirements for the reporting of ARDs (Gov code 12512.5 C.F.R. § 12001-13000) and high fatality counts in recent years. In figure 6 we see that the California DCRP, when state mandated, can achieve a greater level of sensitivity than the CDC (primarily a measure of LEHs) and, for several years, open-sourced records collected through FE.

Figure 6, California ARD Collection



The RTI technical report also found that, in 2011, approximately one in every five cases in California were reported to the SHR only (Banks, 2015). Here the California DCRP count exceeds the open-sourced data for this and neighboring years, indicating that all collection sources, at least at that time, have consistently underestimated the burden. We also see that from 2008, there has been a 2-fold increase in the DCRP count in California, where reporting has continued unabated since the expiration in 2006 and temporary suspension at the national level in 2014. This is consistent with our national open-sourced trend, suggesting that the recent and sharp spike is a component of both a rise in arrest-related mortality and improvements in the identification of deaths. Similarly, in 2011, the Texas ARD collection failed to identify 14% of LEHs captured through SHRs. These discrepancies suggest that the state mandates are not sufficient measures for achieving complete coverage.

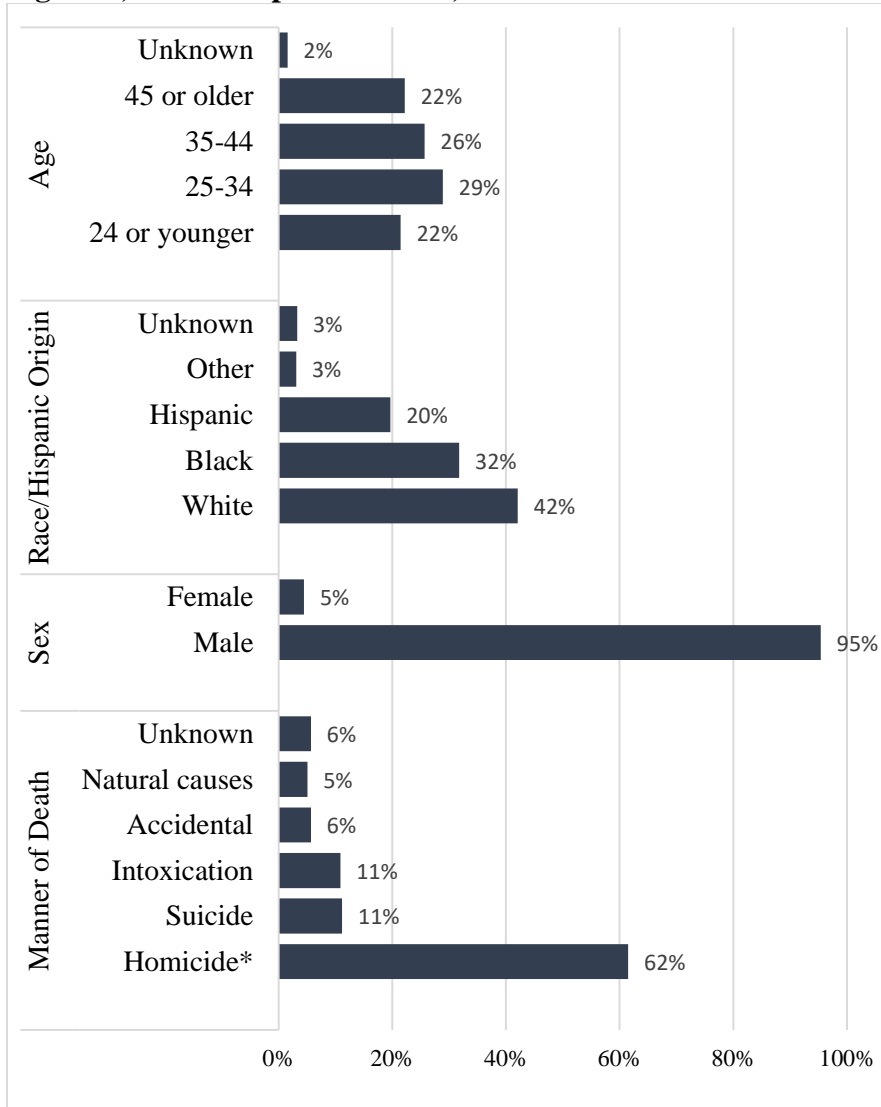
Specificity and predicted value positive

Under the DCRP collection, the BJS affirms that identified deaths meet the criteria for inclusion by obtaining information to complete a CJ-11A for each potential ARD. To our knowledge, there have been no attempts to assess the submitted reports for veracity and accuracy. While the limitations in case detection are still inexact, the shortcomings are clear and sizable. In contrast, without an assessment of reported cases, the specificity and predicted value positive (PVP) remain largely unknown. Because the identification for each ARD has a low attributable human resource and financial cost, the false identification of an ARD would constitute a minimal burden and may not be problematic if the PVP is low. However, for research purposes, a high PVP could significantly bias research findings, and some effort should be made by the BJS to assess the reported cases.

Representativeness

The DCRP summary statistics from 2003-2009, highlight a gender gap with males comprising 95% of reported deaths (Burch, 2011). Though a recorded ARD is more likely to be white non-Hispanics, the disparity by race is evident when considering the proportion of respective races in the general population.

Figure 7, DCRP Reported ARDs, 2003-2009

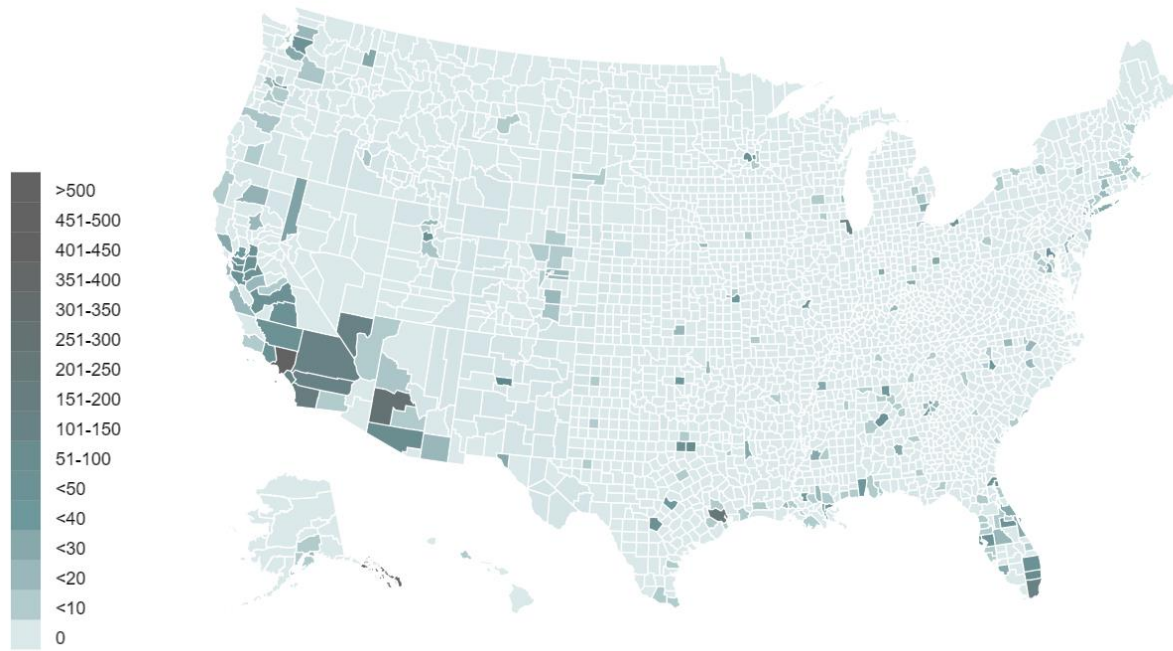


*Includes death by law enforcement and other persons.

At the agency level the DCRP indicates that larger LEAs (more than 250 sworn personnel) have a greater share of deaths respective to their number of arrests (60.7% of known ARDs vs. 49.1% of reported arrests).² When considering just LEHs, 731 (24.7%) deaths occurred in the process of arrest for nonviolent offenses. Reviewing Manner of Death by Race, we see that white, non-Hispanics accounted for 60% of all reported suicides, while African-Americans bore the leading share of deaths by “Accident,” “Intoxication,” and “Unknown” (41%, 41%, and 36%, respectively). Over the 7 years of reported counts, deaths increased by 32% for LEHs and 57% for Suicide.

Because the BJS does not release individual attributes or population summaries for the ARD program, we cannot directly assess the geographic level of representativeness. However, using open-sourced records, we can visualize the distribution of ARDs across the United States.

Figure 8, ARDs by US County, 2000-2015



A county level choropleth of known ARDs collected via the open-sourced database, Fatal Encounters, shows significant geographic variation in the raw counts of ARD between 2000 and 2015. Specifically, the figure shows strong geographic clustering with a majority of known deaths occurring in Southern California, Southern Arizona, and the Miami-Dade Florida area. Note, however, that the vast majority of US counties have zero identified ARDs over this period, suggesting the determinants of ARDs might also be region dependent.

Level of Usefulness

The ARD program, prior to its temporary suspension, was not an effective surveillance system. State counts are reported to the BJS on a quarterly basis but greatly underestimate the true burden. When estimates are made available to the public, it is often years in delay with official counts still unavailable for 2010, 2012, and 2013. Given this delay, there is little to support this system's capacity for timely detection. Because the majority of the increase in deaths observed through open-sourced reports has occurred in the last five years, this system also appears to be unable to estimate the magnitude or detect changes and trends in arrest-related mortality. No studies have been identified that employ DCRP data to assess any prevention or control efforts. Similarly, no changes in policy or agency level practices have been attributed to data collected through the DCRP.

The DCRP falls short of the level of completeness and quality necessary for any practical application as a surveillance system. As the only official collection of ARDs, the DCRP should be employable for assessing the impact of policing interventions, identifying racial disparities, and detecting aberrant circumstances and outlying LEAs. Expecting anything less would be compromising on a system intended to ensure trust through the promotion of transparency and accountability.

Part II - Analysis of agency-level data and the impact of Community Policing

Conceptual Model

To our knowledge, there are 4 dominant policing models in the US: Traditional, Community, Problem-Oriented, and Zero-Tolerance Policing (Community Oriented Policing Services [COPS], 2012). However, because of large cross-over between the community and problem-oriented model – largely in ways that are most important to this investigation, and because the increased adoption of problem-oriented elements in the last 20 years as formal criteria for the CP model – we only discuss how the community model differs from the traditional and zero-tolerance policing models.

The traditional model of policing has a narrow focus that is often reactive and central to combating serious crimes. This model has few interventions for crime prevention and addressing public health issues that might be the catalyst for a police engagement such as substance abuse or mental illness. Because arrests are the primary measure of success and tool for compliance, this model promotes aggressive patrol and enforcement tactics and leads to large officer-level discretion in the use of force – generally without regulation or accountability. Similarly, Zero-Tolerance is narrowly focused on maintaining order – largely with priority based on location and behavior. This model also prioritizes arrests and field stops as measures of success.

Community Policing (aka, Community-Oriented Policing, or Community Based Policing) is a model that focuses on community building through crime prevention, problem solving, community partnerships, and fundamental agency reorganization. It emphasizes collaborative partnerships between the LEA and the individuals and organizations they serve to develop solutions to problems and increase trust in police (COPS, 2016). Adoption of this model began in late 90's and was, to some degree, used by 58% of LEAs as of 2003. Community Policing is a popular program in the United States with hundreds of thousands of offices at over 13,000 of the 18,000 US enforcement agencies trained in the model in the last 15 years. Since 1994, the DOJ's Office of Community Oriented Policing Services (COPS) has invested more than \$14 B in initiatives that advance community policing (COPS, 2016).

While Community Policing makes many claims, the reduction of ARDs is not among the direct expected outcomes. We believe that crime plays a significant role in this association, however, because reduced crime is the primary objective of community policing – a change that would result in fewer interactions and arrests – we are considering crime to be in the causal pathway and have chosen not to adjust for this factor. Additionally, we expect many of the components of community policing to be directly associated with ARDs and, we believe, are protective of ARDs.

Methods

Study Design

Because of the DCRP's unavailability in recent years, we derived records from the open-sourced database, Fatal Encounters (FE). We restricted this data set to only include deaths by local and state US law enforcement and only those ARDs occurring between January 2012 and April 2016.

Next, we matched ARDs to Law Enforcement Management and Administrative Statistics (LEMAS) survey respondents on both the name of the LEA and the state where the death occurred. 2,826 agencies completed the LEMAS, in 2012 (LEMAS, 2013). Of these, 813 (29%) were linked to one or more ARDs

over the observed period. These agencies accounted for 3,380 (60.4%) reported ARDs in following years, with the remaining 2,219 unmatched to the LEAs sampled. We then merged the 2012 Uniform Crime Report for known arrests using the BJS 2012 Law Enforcement Agency Identifiers Crosswalk (Crosswalk, 2012). These identifiers enabled county-level matching based on FIPS codes. We included county-level Census estimates for education, race, and poverty from 2012.

Data sources

Fatal Encounters: FE identifies and collects records through different means. In order of number of records reported: i) paid researchers; ii) public records requests; iii) open-sourced data. All open-sourced records are researched to avoid duplication and investigated to verify the event and surrounding circumstances. We included records occurring between Jan. 1, 2012 and Apr. 30, 2016. Victim demographic characteristics and uses of force were not assessed in this study. FE relies heavily on police reports, official statements, and circumstantial details reported by the media. Because these details are often directly or indirectly derived from the LEAs involved, they suffer from similar levels of non-reporting as the DCRP. While researchers are able to verify the occurrence of most deaths, including location and time, information about the decedents and circumstance surrounding the death are often withheld by US law enforcement and was therefore not included in this analysis.

LEMAS: The Bureau of Justice Statistics' LEMAS survey is conducted periodically and includes data from a nationally representative sample of LEAs in the United States. The 2013 LEMAS was sent to 3,272 state and local LEAs including 2,327 local police departments, 895 sheriff's offices, and the 50 primary state LEAs. We examined the response data for LEAs participating in the 2013 LEMAS with detailed policing and administrative practices for the 2012 operating year (N=2,826).

County Characteristics: We obtained community level characteristics for respective counties – the most reliable level of granularity for matching to LEAs with varying catchment areas. 2012 Census estimates were used for percent of high school dropout (U.S. Census, 1970-2014, Educational Attainment), percent African-American/Black (U.S. Census, 2010-2012, Population Estimates), and percent of poverty as measured by the Small Area Income and Poverty Estimates Program (U.S. Census, 2012, Poverty Estimates).

Study variables

Community Policing: We generated a factor score of Community Policing using the eight characteristics described in table 1. The factor analysis was performed using the polychoric command in Stata (Kolenikov, & Angeles, 2004) to deal with the fact that the Community Policing items are dichotomous variables. One factor emerged with an eigenvalue greater than one, explaining 97% of the variance, with factor loadings ranging from 0.494 to 0.736.

Covariates: We estimated a factor score of severe to lethal use of force, using the six policies authorizing use of force – variables described in table 1. The factor analysis was performed using the polychoric command in Stata (Kolenikov, & Angeles, 2004) to deal with the fact that the authorizing use of force variables are ordinal variables. One factor emerged with an eigenvalue greater than one, explaining 87% of the variance, with factor loadings ranging from 0.254 to 0.810.

The number of full-time sworn officers, along with the county-level community attributes (percent African-American, percent of poverty, and percent of population with less than a high school diploma) were included as covariates in our models.

Outcome

Our outcome measure was ARDs collected through the open-source database, Fatal Encounters. This variable is modeled as a rate of known arrests, as reported by the 2012 Uniform Crime Report. For LEAs

with missing periods of reported arrest data (1,623 of 17,010 LEAs), we imputed estimates using recommended UCR estimating procedures (Noonan, 2014). The suggested method differs based on the number of missing months: if more than 3 months of reports were missing, estimates were derived based on the mean arrests rates for agencies within the same population ventile, otherwise a full year was estimated based on the LEAs' reported arrests for the months available. This denominator includes known ARDs, assuming that, had the events not been fatal, the decedents would have been included in the UCR reports of arrests.

Table 1, Variable Descriptions

	Description	Miss	N	Mean	SD
Law Enforcement Agency					
ARD	Arrest-Related Deaths	0	2,826	1.20	4.94
FT* Sworn	Total number of full-time sworn officers	0	2,826	163.92	824.96
Community					
Percent African-American	Percent of African-Americans in county served by LEA	192	2,634	10.94	12.45
Percent of Poverty	Percent of poverty in county served by LEA	68	2,758	15.86	5.74
Percent HS Dropout	Percent of adult population with less than high-school diploma	68	2,758	13.50	5.84
Community Policing**				Min	Max
Mission Statement	Community Policing component in mission statement	70	2,756	0	1
SARA	SARA-type problem-solving actively encouraged	68	2,758	0	1
Evaluation	Evaluation criteria for patrol officers includes collaborative problem-solving	93	2,733	0	1
Problem Solving	Problem-solving partnership or written agreement with local organization	68	2,758	0	1
Beats	Same patrol officers regularly assigned responsibility for areas or beats	63	2,763	0	1
Survey	Utilized information from community survey	71	2,755	0	1
Training In-Service	At least 8 hours of Community Policing training for most or all in-service officers	240	2586	0	1
Training New Recruit	At least 8 hours of Community Policing training for most or all new officer recruits	576	2250	0	1
UOF Authorization***					
Handguns	Handguns authorized for use by sworn field/patrol officers	38	2,788	0	2
Rifle	Rifles authorized for use by sworn field/patrol officers	38	2,788	0	2
Shotgun	Shotguns authorized for use by sworn field/patrol officers	38	2,788	0	2
Neck-hold	Neck restraints authorized for use by sworn field/patrol officers	38	2,788	0	2
Takedown	Takedown techniques authorized for use by sworn field/patrol officers	38	2,788	0	2
Severe Restraint	Leg Hobble or other severe restraints authorized for use by sworn officers	38	2,788	0	2

*FT = full time

**0 = No, 1 = Yes

***0 = Not Authorized, 1 = Some Sworn, 2 = All Sworn

Statistical Analysis

First, we assessed the distribution of the total counts of ARDs. To account for over-dispersion and excess zeros, we considered multivariable negative binomial and zero-inflated Poisson rate models. Although negative binomial and zero-inflated Poisson regressions are used to model count data, we were able to model rates of ARDs by utilizing the exposure option in Stata, with the exposure being set to the number of known arrests. For the zero-inflated predictor, we used 2013 Rural-Urban Continuum Codes (USDA ERS, 2013) included in the Crosswalks Dataset. These codes capture the county population, degree of urbanism, and adjacency to metropolitan areas.

Agency annual operating budget and population were both weakly associated with increased ARDs, though, because their estimated effects were negligible and their inclusion had little overall effect on the model, they were excluded. A latent measure for less-than-lethal use of force was also calculated but was omitted because of low factor loadings. 50 LEAs with zero reported arrests and zero matched arrest related deaths were omitted from analysis.

We compared model fit using predicted residual deviance, McFadden's adjusted R², and AIC. The goodness of fit measures favored the zero-inflated and traditional negative binomial models over the zero-inflated Poisson. Next, we examined patterns of missingness and investigated which variables were predictive of missingness. Multiple imputations were conducted using R's Amelia II package to generate five imputed datasets. The following variables were used as auxiliary variables in the imputation process: The LEA unique identifier (ORI), the number of ARDs, number of full-time sworn officers, and the population of the area served by each LEA. For our final model we used factor analysis to estimate latent measures for Community Policing and severe to lethal use of force for each imputed data set. We then used the mi estimate command to pool estimates from each imputed data set to examine the association between Community Policing and the rate of ARDs with a negative binomial regression. We used Stata 14 for data management and analyses as well as R's Amelia II package to impute missing values (Honaker, King, & Blackwell, 2011).

Results

Among agencies with one or more recorded ARDs, there are on average 4.2 ARDs per LEA. Los Angeles County had the highest count with 117 over the years observed (i.e. one ARD every two weeks) followed by California Highway Patrol with a total of 86, then Los Angeles County Sheriff's Office with 79 known ARDs. Though the zero-inflated model showed a modest improvement in fit, there was little evidence to support the assumption for a separate predictor of zero counts for this association.

Table 2 shows the rate ratios for the associations between agency and community characteristics and ARDs. Using a negative binomial model, we found that greater adherence to the Community Policing model is associated with a reduced rate of ARDs (by a factor of 0.61; 95% CI: 0.42 to 0.87).

Conversely, we see that the number of full-time sworn officers and the level of poverty are both strongly associated with higher rates of ARDs. For example, agencies with 100 additional officers have an estimated 1.65 times higher rate of ARDs than their smaller counterparts. Similarly, communities with 10% greater poverty have a 1.90 times higher ARD rate. We observed no significant association between higher county rates of African-Americans and ARD rates.

Figure 9, Estimated Log Odds by Model

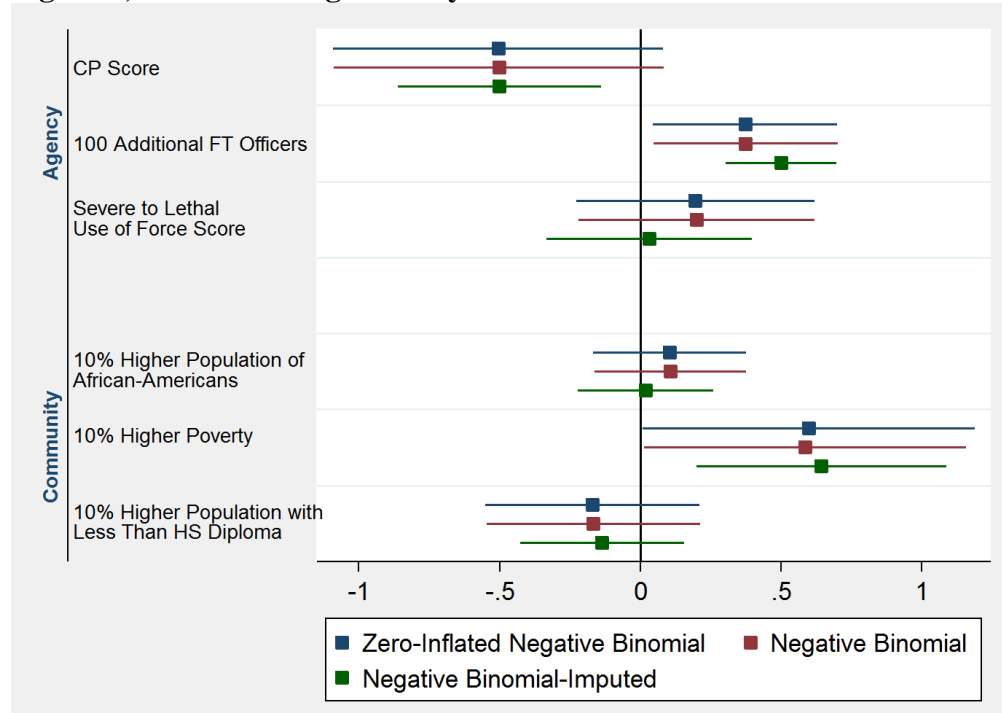


Table 2, Rate Ratios and 95% Confidence Intervals for the Associations between Agency and Community Characteristics and ARDs

Arrest-Related Deaths	Zero-Inflated Negative Binomial N=1888	Negative Binomial N=1888	Negative Binomial-Imputed N=2776
Agency Characteristics			
Community Policing Factor Score	0.604 (0.336, 1.084)	0.605 (0.337, 1.088)	0.606** (0.422, 0.869)
100 Full-Time Sworn Officers	1.451* (1.046, 2.014)	1.454* (1.049, 2.014)	1.649*** (1.354, 2.008)
Severe to Lethal Use of Force Factor Score	1.217 (0.796, 1.855)	1.221 (0.803, 1.859)	1.032 (0.717, 1.486)
Community Characteristics (10% Increments)			
Percent African-American	1.110 (0.846, 1.456)	1.112 (0.850, 1.455)	1.018 (0.800, 1.296)
Percent Living in Poverty	1.818* (1.009, 3.277)	1.795* (1.013, 3.177)	1.902** (1.221, 2.965)
Percent with Less Than HS Diploma	0.844 (0.577, 1.235)	0.846 (0.580, 1.235)	0.873 (0.653, 1.168)
Zero-Inflated Predictor			
2013 Urban Rural Continuum Codes	3.216* (1.185, 8.723)		

95% confidence intervals in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Discussion

The DCRP falls short of the level of completeness and quality necessary for any practical application as a surveillance system. State counts greatly underestimate the true burden for LEHs, while the coverage for all other ARDs remains unknown. This system has not supported any prevention or control efforts that we could identify, and no changes in policy or agency-level practices have been attributed to data collected through the DCRP.

In our study we see evidence supporting Community Policing as one such method for stymying this rise in mortality. In particular, our factor analysis suggests that SARA-type problem-solving activities and evaluating officers on their problem-solving efforts with community partners could be specific and effective tools for LEAs seeking to reduce their number of ARDs. Additionally, we find that communities with higher rates of poverty are at much greater risk for future ARDs. This finding is consistent with other research suggesting that larger metropolitan areas with high poverty were more likely to have racially biased police shootings (Ross, 2015). While we found no significant association between county-level percent of African-Americans and the rate of ARDs, our study does not account for sub-county variation, such as segregation, as it relates to multiple LEAs within a county or agencies that share a county or sub-county catchment area (e.g. County Sheriff's Office and city LEA).

Limitations

While we found Community Policing to be significantly protective of ARDs in our imputed model, we have not assessed the impact of other policing interventions and cannot make direct comparisons or estimate the impact of these alternatives. This would be particularly limiting for agencies with both high adherence to the Community Policing model and high arrest fatality rates looking for additional interventions.

In building our data set we considered several options for our outcome data. In effort to provide the most comprehensive assessment of Community Policing, we focused on open-sourced records, and in particular the Fatal Encounters data set. Unfortunately, with this data, as with other sources, we are unable to reliably estimate the burden of ARDs for persons with severe mental illness. Our primary motivation for working with open-sourced data is to investigate these fatalities at a much finer granularity. However, the advantage of open-sourced records is limited to the improved sensitivity and timeliness. Details of the decedents and circumstance surrounding the incidents are often omitted in agency statements to the media, leading to many of the same quality issues.

Though we are limited in our scope with the cross-sectional study design, the lack of research supports this approach as an early attempt to investigate the association between Community Policing and ARDs. We hope that this effort supports future research moving forward in utilizing more rigorous statistical methods.

Conclusions

To help policymakers respond to public concern about ARDs and to support LEAs adopting the best methods of prevention, we investigated the effect of Community Policing, finding a strong association with a lower rate of ARDs. This model may be an appropriate tool for US law enforcement agencies who wish to avert future ARDs. We also found that the surveillance of ARDs via the DCRP has many limitations preventing this measure from being an effective public health tool. Before this program is reinstated, we recommend the following:

First, the collection and reporting should be mandated with sufficient incentives to ensure acceptance and the participation of every LEA (Fyfe, 2002; Greene, 2000; Kane, 2007). The 2013 Deaths in Custody

Reporting Act goes further than its predecessor, with the threat of up to 10% of federal funding being withheld from LEAs. The efficacy of this incentive will need to be considered once reporting resumes, with a focus to the willingness of the BJS to enforce these funding reprimands and the acceptance of reporting requirements by agencies that receive minimal or no federal funding.

Second, as noted in previous literature (Klinger, 2008; Greene, 2000; Hickman, Piquero, & Garner, 2008; Smith, 2008; White & Ready, 2009), the national collection of ARDs should be expanded to include all uses of force, including non-fatal incidents. FBI spokesman, Stephen Fischer Jr., stated in an email on Dec. 3, 2015, that an FBI advisory policy board recommended the collection of data on all uses of force resulting “in death or serious bodily injury, or whenever a law enforcement officer discharges a firearm at or near an individual...” (Sternstein, 2016). A reliable source of data on the use of force would provide valuable data on mortality risk factors and agency level interventions such as Community Policing and Crisis Intervention Training. High quality data on the use of force would endow policy makers and agency administrators with the information necessary for weighing choices based on outcomes with clear expectations. Evidence-based trainings for sworn personnel could be used to prioritize practices with measurable effects and would avert the allocation of resources to less effective or unvalidated practices.

Last, the identification and collection process must be streamlined to ensure consistent and reliable reporting across states. Though the completeness of LEHs recorded in the DCRP did not significantly vary by methods of identification, standardization and selection is important to avoid systematic differences across states that might be related to other characteristics. Similarly, the method for collecting and reporting the circumstances for the CJ-11A should be consistent within and across states. Specific consideration should be given to the conflict of interests, both real and perceived, when the officers and LEAs involved are responsible for the official narrative, and an effort should be made to identify a best practice for such reporting measures.

Bibliography

- Banks, D., Blanton, C., Burch, A., Couzens, L., Cribb, D., & Planty, M. (2015). Arrest-Related Deaths Program: Data Quality Profile. Retrieved from <http://www.bjs.gov/content/pub/pdf/ardpdqp.pdf>
- Banks, D., Couzens, L., Blanton, C., & Cribb, D. (2015). Arrest-Related Deaths Program Assessment: Technical Report. Retrieved from <https://www.ncjrs.gov/App/Publications/abstract.aspx?ID=270646>
- Banks, D., & Planty, M. (2015). Assessment of Coverage in the Arrest-Related Deaths Program. Retrieved from Bureau of Justice Statistics: <http://www.bjs.gov/content/pub/pdf/acardp.pdf>
- Binder, A., Binder, A., & Scharf, P. (1980). The Violent Police-Citizen Encounter. *The Annals of the American Academy of Political and Social Science*, 452, 111-121.
- Binder, A., & Fridell, L. (1984). Lethal Force As A Police Response. *Criminal Justice Abstracts*, 16(2), 250-280.
- Borrego, A., White, M. D., Fornango, R., & Kane, R. (2011). Arrest-Related Deaths in the United States: An Assessment of the Current Measurement. In M. D. White, R. Fornango, & R. Kane (Eds.): ProQuest Dissertations Publishing.
- Burch, A. M. (2011). Arrest-Related Deaths, 2003-2009 - Statistical Tables. Retrieved from Bureau of Justice Statistics: <http://www.bjs.gov/index.cfm?ty=pbdetail&iid=4943>
- U.S. Census Bureau (1970-2014). Educational attainment for adults age 25 and older for the U.S., States, and counties, 1970-2014.
- U.S. Census Bureau (2010 - 2012). Annual Estimates of the Resident Population by Sex, Race, and Hispanic Origin for the United States, States, and Counties: April 1, 2010 to July 1, 2012
- U.S. Census Bureau (2012). Small Area Income and Poverty Estimates.
- Burghart, B. (2012). Fatal Encounters [Open-Source]. Retrieved from: <https://fatalencounters.org>
- Community Policing Defined. (2012). In C. O. P. Services (Ed.): US Department of Justice.
- Donahue, M., & Horvath, F. (1991). Police Shooting Outcomes: Suspect Criminal History And Incident Behaviors. *American Journal of Police*, 10(3), 17-34.
- Fryer, R. (2016). An Empirical Analysis of Racial Differences in Police Use of Force. NBER Working Paper Series, 22399. doi:10.3386/w22399
- Fyfe, J. J. (1981). Contemporary issues in law enforcement. Beverly Hills: Published in cooperation with the American Society of Criminology by Sage Publications.
- Fyfe, J. J. (2002). Too many missing cases: Holes in our knowledge about police use of force. *Justice Research and Policy*, 4(-1), 87-102. doi:10.3818/JRP.4.1.2002.87
- Gabrielson, R., Gochowski, J., & Sagara, E. (2014). Deadly Force, in Black and White [Press release]. Retrieved from <https://www.propublica.org/article/deadly-force-in-black-and-white>

- German, R. R., Lee, L. M., Horan, J. M., Milstein, R. L., Pertowski, C. A., & Waller, M. N. (2001). Updated Guidelines for Evaluating Public Health Surveillance Systems: Recommendations from the Guidelines Working Group. *Morbidity and Mortality Weekly Report: Recommendations and Reports*, 50(RR-13), i-35.
- Greene, J. R. (2000). Community Policing in America: Changing the Nature, Structure, and Function of the Police. *Criminal Justice* 2000, 3, 72.
- Hickman, M. J., Piquero, A. R., & Garner, J. H. (2008). Toward a national estimate of police use of nonlethal force. *Criminology & Public Policy*, 7(4), 563-604. doi:10.1111/j.1745-9133.2008.00528.x
- Honaker, J., King, G., & Blackwell, M. (2011). Amelia II: A Program for Missing Data. *Journal of Statistical Software*, 45(7), 1-47.
- Government Code Section 12510-12531, 12512.5 C.F.R. § 12001-13000 (n.d.).
- Kane, R. J. (2007). Collect and release data on coercive police actions. *Criminology & Public Policy*, 6(4), 773-780. doi:10.1111/j.1745-9133.2007.00485.x
- Klinger, D. A. (2008). On the importance of sound measures of forceful police actions*. *Criminology & Public Policy*, 7(4), 605-617. doi:10.1111/j.1745-9133.2008.00529.x
- Kolenikov, S., & Angeles, G. (2004). The Use of Discrete Data in PCA: Theory, Simulations, and Applications to Socioeconomic Indices. *Simulation Study*. University of North Carolina.
- Michael, D. W. (2002). Identifying situational predictors of police shootings using multivariate analysis. *Policing: An International Journal of Police Strategies & Management*, 25(4), 726-751. doi:10.1108/13639510210450659
- Mumola, C. J. (2007). Arrest-related deaths in the United States, 2003-2005. Washington, D.C.]: Washington, D.C. : U.S. Dept. of Justice, Office of Justice Programs.
- Noonan, J. H. (2014). Procedures for Estimating in the Uniform Crime Reporting (UCR) Program. Retrieved from The Office of Information and Regulatory Affairs:
- Planty, M. (2013). Data Collection: Deaths In Custody Reporting Program (DCRP). Retrieved from <http://www.bjs.gov/index.cfm?ty=dcdetail&iid=243>
- Planty, M. (2015). Memorandum: BJS request for OMB Clearance to conduct a pilot test of the Arrest-Related Deaths Program (ARD). Retrieved from <http://www.reginfo.gov/public/do/DownloadDocument?objectID=59326901>.
- Rich, S., Hawkins, D., & Higham, S. (2015, Nov. 4, 2015). Fatal shootings by police lead to a wide range of settlements for families. *The Washington Post*. Retrieved from <https://www.washingtonpost.com/graphics/investigations/police-shootings-civil-suits/>
- Ross, C. (2015). A Multi-Level Bayesian Analysis of Racial Bias in Police Shootings at the County-Level in the United States, 2011-2014. *PLoS One*, 10(11). doi:10.1371/journal.pone.0141854

Services, O. o. C. O. P. (2016). COPS Office FY 2016 Application Guide: Community Policing Development (CPD). Community Oriented Policing Services Retrieved from <http://www.cops.usdoj.gov/pdf/2016AwardDocs/cpd/AppGuide.pdf>.

Smith, M. (2008). Toward a national use-of-force collection system: One small and focused step is better than a giant leap. *Criminology & Public Policy*, 7(4), 619-627. doi:10.1111/j.1745-9133.2008.00530.x

Statistic, U.S. D.o.J. B.o.J. (2012). Law Enforcement Agency Identifiers Crosswalk.

Sternstein, A. (January 14, 2016). NUMBER OF DEATHS IN POLICE CUSTODY HIGHER THAN MEDIA REPORTS: DOJ DATA. Nextgov. Retrieved from <http://www.nextgov.com/big-data/2016/01/justice-statisticians-step-lethal-force-debate/125011/>

United States Department of Justice. Office of Justice Programs. Bureau of Justice, S. (2015). Law Enforcement Management and Administrative Statistics (LEMAS), 2013. Retrieved from: <http://doi.org/10.3886/ICPSR36164.v2>

USDA ERS Rural-Urban Continuum Codes Documentation. (2013). Retrieved from <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes/documentation.aspx>

White, M., & Ready, J. (2009). Examining fatal and nonfatal incidents involving the TASER: Identifying predictors of suspect death reported in the media. *Criminology & Public Policy*, 8(4), 865.

Wrongful Deaths: News and Publications. (2016). Retrieved from <http://www.nlg-npap.org/topics/wrongful-death>