Understanding Firearms Assaults against Law Enforcement Officers in the United States

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LETTER FROM THE DIRECTOR

Dear colleagues,

This publication attempts to answer important questions regarding firearm assaults against law enforcement officers. Initially prepared as a framework for discussion in the 2014 Officer Safety and Wellness (OSW) Group roundtable dedicated to identifying best practices for reducing firearm assaults and ambushes, this publication examines the policies, training, and other characteristics of police departments that have been shown to prevent injuries and deaths.

Different approaches were presented by law enforcement leaders, line officers, members of the advocacy group Law Enforcement Officers Killed and Assaulted (LEOKA), and subject matter experts who shared their personal insights and experiences, while also engaging in vigorous debate on research findings.

What makes this publication particularly helpful is the addition of a literature review looking at 50 years of attempts to better understand the situational factors that lead to assaults, which is augmented by research conducted by the authors.

We are indebted to the practitioners, peer reviewers, law enforcement experts, and others who contributed substantively to the development of this publication. Their work can save many lives. I especially want to thank those representatives from law enforcement agencies who attended and shared their personal stories.

We hope this publication will inform the field and be useful in enhancing the safety of the men and women who serve in law enforcement. Officer safety is community safety. When a police officer is assaulted, the community and the rule of law are also assaulted.

As a retired police officer, I'd like to close by thanking the men and women of law enforcement for their service and renewing our commitment to working collaboratively to support their efforts and enhance their safety.

Sincerely,

Ronald L. Davis
Director
Office of Community Oriented Policing Services

ACKNOWLEDGMENTS

INTRODUCTION AND BACKGROUND REGARDING THE OSW GROUP AND MISSION

In 2011, then U.S. Attorney General Eric Holder, Jr. requested that the Office of Community Oriented Policing Services (COPS Office) and Bureau of Justice Assistance (BJA) form the Officer Safety and Wellness (OSW) Group. The group's purpose is to bring together thought leaders, law enforcement practitioners, and researchers to compile, parse, and share information that reduces risks, increases safety, and enhances wellness among the ranks of policing professionals. This is a vital and yet complex charge with interrelated external and internal forces at play. Even without considering the environmental variables external to the agency that make the job inherently dangerous, leadership, policies, training, procedures, support services, and equipment as well as individual approaches to fitness, nutrition, and mental health all impact the levels of risk to officer safety.

With these issues in mind, the OSW Group amassed data, heard from experts and researchers in various areas, identified 16 priorities that would guide future meetings and the overall mission of the group, and began developing action plans to address those priorities as a profession and at the agency and individual levels. Of the following 16 priorities, the attorney general, the COPS Office, and BJA established the first three as top priorities:

1. Injuries and death due to gunfire
2. Premeditated and unprovoked ambush situations
3. Rifle/long-gun threats / assault weapons
4. Education and training
5. Leadership and safety practices
6. Emergency vehicle operation and safety
7. Physical health (e.g., fatigue, alcohol, weight, and nutrition)
8. Psychological health
9. Foot pursuit safety
10. Task force operations (federal and local)
11. Offenders (behavior during incident and history)
12. Court security
13. Deployment strategies and communications technologies
14. Maintaining good health
15. Equipment
16. Former military in law enforcement

This report serves as one step toward addressing two of these primary safety concerns in law enforcement: (1) injuries and deaths among officers and (2) premeditated and unprovoked ambushes of officers. It was initially developed for presentation at the December 2014 meeting of the OSW Group, where it served as a framework for the discussion. The meeting included use of force subject matter experts, organizational leaders from law enforcement associations, representatives from various federal agencies, Law Enforcement Officers Killed and Assaulted (LEOKA) administrators, and project team members. This report examines the differential risks that are thought to influence the use of deadly force against police officers in the United States. We hypothesize that the risks to officer safety are neither uniform across the country nor static; instead, officers from particular agencies or jurisdictions are at a higher risk than officers from other agencies of becoming victims of firearms-related violence. Based on this research, representatives from three high-risk agencies and three low-risk agencies were invited to the OSW group meeting. Each agency representative was given the opportunity to talk about their department and their local organizational practices related to officer safety.

Existing research on this topic is not yet sufficient to determine what factors are responsible for this differential risk, but some likely explanations include variability in crime rates; population demographics; economic conditions; organizational training, policies, and procedures; and officer assignments. This report examines some of the jurisdictional and departmental characteristics in local police departments and sheriffs' offices in the United States that may influence the risk of injury or death to police officers by firearms. More specifically, we examine the presence or absence of policies, practices, and training that are focused on improving officer safety during high-risk calls for service and on reducing the impact of firearm violence against officers.

In addition to the authors discussing this research with the OSW group, representatives from the Federal Bureau of Investigation (FBI) also presented on their work with the LEOKA data collection program. This data set was not only key to the research discussed in this report but also the most comprehensive national level data we have about officer injuries and fatalities. However, it is not without limitations and weaknesses, and the attendees also discussed those as well as ideas for improving this valuable data. Some of that discussion is also captured in this report.

This report is divided into three sections. First is a summary of the OSW group meeting discussion that shares the important findings and recommendations of the group. Second is a literature review looking at 50 years of attempts to better understand the situational factors that lead to officers being assaulted. Third is a presentation of the methods and results of the research conducted by the authors.

PART ONE. SUMMARY OF OSW GROUP DISCUSSION

Discussion at the December 2014 OSW Group meeting offered some important insights regarding variations in the use of deadly force and firearms against police officers. From the presentations the attendees learned that it seems clear that police officers working in similarly situated cities and counties are at differential risk of becoming the victims of firearms violence. Also, the LEOKA data provide an opportunity to explore those variations over time and within cities and counties.

Specific to this research, LEOKA allowed the authors to identify specific cities and counties where officers may be at increased risk of firearms-related violence. Further, merging five years of LEOKA and Uniform Crime Reports data confirms, first and foremost, that risks are sometimes higher for officers who are working in cities and counties with higher crime rates. However, even within high crime settings, there are substantial differences in the extent of risk for officers across comparable cities and counties. Simply stated, some cities and counties are more dangerous for police officers, and officers are at higher risk of being victims of firearms assaults in certain locations.

As a starting point, the cities and counties identified in bold, blue italics in the tables located in appendix A should be more closely examined. The officer safety policies and practices in these agencies should also be carefully reviewed and improved safety solutions should be developed. To be clear, we are not suggesting that any particular agency's past or current law enforcement practices and policies (or lack thereof) are placing their officers at increased risk. However, we are drawing attention to the fact that police officers in some of our nation's cities have been assaulted with firearms substantially more often than officers in cities of similar size and with comparable mean homicide rates over a five-year time frame. The logical questions that follow are (1) Why are certain cities seemingly less safe for police officers? and (2) Why are citizens in certain cities more willing to use firearms in the course of assaulting police officers?

The presentations and group conversations were helpful to some degree and offered specific insights into potential explanations for variations in risk for officers. These explanations included (1) agency reporting practices related to firearms events (some agencies simply report differently than others, so what appear to be increased numbers of assaults against police may in fact reflect different reporting practices, (2) variations in definitions used for firearms-related incidents, (3) city-level demographic variations and changes, (4) variation in citizen firearm ownership rates, and (5) organizational training and safety practices.

Philadelphia, Pennsylvania, for example, is rather densely populated, and the confined areas of operation may accelerate police-citizen encounters and potentially explain increased use of firearms against officers in that city. St. Louis, Missouri, on the other hand, has persistently high crime and homicide rates, so the officers working there are simply operating in a potentially more dangerous environment. Meanwhile, crime in Tampa, Florida, has dropped 70 percent since 2004, and the Tampa Police Department substantially increased their intelligence capacity and effectiveness in that time, so officers in that city are perhaps less often encountering dangerous offenders with insufficient intelligence about the potential danger. The Las Vegas (Nevada) Metropolitan Police Department has developed reality-based training and advanced firearms skills training that may be making a difference. Finally, the Baltimore (Maryland) Police Department proactively targets repeat offenders and emphasizes foot pursuit training, which may explain some of the firearms assaults against officers experienced by that agency. These are all anecdotal explanations that may account for some of the variability in firearms assaults against officers across cities, but clearly more focused research would be useful before we could draw meaningful conclusions.

One of our subject matter experts suggested that changing socio-demographics and persistently high crime rates are the most important drivers of increased shootings against officers. To the extent that officers are already working in high crime areas, proactively focusing on highly prolific and violent offenders, and minimally engaging communities that are already distrustful, it follows that officers will be at increased risk of citizen-initiated violence against them. However, our study controlled for these factors and matched high- and low-risk agencies on population and homicide data over five years. We still find that firearms assaults are substantially higher in some cities, regardless of these contextual factors.

Given what we learned from prior research studies; merging and analyzing five years of LEOKA and UCR data; the national organizational survey on use of deadly force and firearms against officers; OSW Group discussions in Washington, D.C.; and subject matter experts, a series of recommendations is offered. These recommendations may serve as useful next steps for improving officer safety nationwide.

Recommendation 1

As an initial step, we encourage broader use of the LEOKA and UCR data to regularly and routinely identify high-crime and high-risk environments at the city and county levels. These two national datasets, which can be easily merged (even given the observed weaknesses discussed later), can routinely inform policy and funding decisions and should be more effectively integrated into federal research agendas, resource allocation decisions, and program design. The COPS Office merges a range of crime and other data sources to inform its programmatic and funding decisions, such as in selections for the COPS Hiring Program grant. We would encourage ongoing emphasis of data-driven funding decisions that rely on a broad range of data sources.

For example, in the interest of increased officer and citizen safety, funding agencies might consider funding cities and counties based on both high crime rates **and** high-risk scores associated with use of firearms against officers. Combining federal data sources to drive program and funding decisions offers a data-

driven, scientifically sound approach to federal resource allocation. Further, using this kind of funding model could increase participation in LEOKA for some agencies and could potentially set the stage for the national development of other useful policing and crime data sources (discussed later).

Recommendation 2

A growing number of officer ambushes has been reported in recent years, and these reports have raised substantial concerns about officer safety, body armor, situational awareness training, and other factors. Despite the heightened current concerns, reducing and preventing officer ambushes is a particularly difficult challenge. However, there are two concrete steps that we can take to minimize the likelihood of ambushes. First, the dissemination of useful and actionable intelligence is paramount. Officers who are stopping cars on a highway, conducting stop-and-frisks, walking the beat, or investigating suspects all need to be fully informed with as much information as possible in a timely manner. There is no evidence that this is not currently occurring, but many of the law enforcement leaders recognized this as an important step toward reducing ambushes. Second, situational awareness, vigilance, and reality-based training are critical to officer safety and may help reduce officer ambushes. As an initial step, identification, evaluation, and expansion of best practices within current training academies and curricula are important.

Recommendation 3

The LEOKA data helped us identify high-risk calls for service and scenarios that should be prioritized in officer safety training, policy and procedure development, and organizational priorities. In short, (1) foot pursuits, (2) domestic violence calls, (3) responding to burglaries (or robberies) in progress, (4) handling mentally ill or emotionally disturbed individuals, (5) serving arrest warrants on violent offenders, and (6) responding to calls where shots have been fired or firearms are on scene are all high-risk events. These events directly contribute to officer assaults and casualties each year.

Our survey results suggest wide variation in organizational policies and practices and in recruit and officer training that is specifically focused on preparing and responding to these high-risk calls for service. Regardless of the variation, some commonly accepted safety practices might be necessary and nationally encouraged.

As examples and building from our OSW group conversations, national model policies and practices for these six high-risk scenarios should be developed and disseminated, perhaps by the Major Cities Chiefs Association, the International Association of Chiefs of Police, or the National Sheriffs' Association. Within the six scenarios, certain safety practices might need to be considered mandatory:

➤ Responding alone to any of the high-risk events likely places an officer at unnecessary risk for lethal violence.

➤ Ongoing communication while responding to high-risk calls seems warranted.

➤ Fully defining the extent (or limits) of officer discretion while responding to high-risk events merits full and careful consideration.

➤ Effective safety training should be identified and expanded around each of the high-risk areas, and such training should be mandatory within and after training academies. Again, identification, evaluation, and expansion of best practices within current training academies and curriculums is important.

➤ Wearing adequate and approved body armor should be mandatory every time any officer responds to high-risk events.

➤ Finally, some of these events (e.g., domestic violence calls, responding to mentally ill or emotionally disturbed individuals, serving warrants) might need to be restricted to certain highly trained sworn specialists within the agency. These matters should be carefully deliberated by law enforcement leaders.

Recommendation 4

Focusing attention on officer deaths associated with firearms is important. However, it is equally important to focus attention on the broader category of firearms assaults and on shots actually fired at officers in general, whether those shots miss, hit and injure, or hit and kill an officer. Every shot fired at an officer is potentially lethal, so it would be a mistake to focus too much attention only on the small number of shots that result in an officer's death.

As a reminder, there were 1,926 law enforcement agencies that reported at least one firearms assault against an officer during the five-year time frame examined here. More specifically, there were 1,014 firearms assaults that resulted in injuries to officers, 10,149 firearms assaults against officers that did not result in injuries, and 148 deaths attributable to firearms use against officers from 2007 to 2011 among the 1,926 agencies.

More of our research and policy attention should focus on the 10,149 firearms assaults against officers, particularly when shots are actually fired, and these events should be explored more carefully and systematically. We need to understand where, why, and under what conditions those shots were fired and to take active steps to reduce the frequency of those conditions while also seeking to reduce the number of officer deaths. Accomplishing these worthwhile goals may involve more careful exploration of variations in local firearms laws, the extent of legal and illegal access to firearms, and improved methods of identifying suspects who may be carrying illegal firearms (Jacobellis 2007; Gallagher n.d.).

This project offered the opportunity to analyze the FBI's LEOKA data and, for the first time to our knowledge, to combine LEOKA data with UCR crime data and organizational survey data. In spite of its promise, LEOKA and other police and crime data have some significant limitations that can limit their usefulness to law enforcement and the academic community (Uchida and King 2002; King and Sanders 1997). Although for this project we relied primarily on firearms assaults data, which may have higher

reliability and validity generally, we nevertheless observed three limitations in this project that should be addressed in the future. These limitations were also discussed with the OSW Group, with general consensus that these need to be addressed in order to realize the real power of the data.

1. The LEOKA report and data are released too slowly.

In an era characterized by the timely release of information to support effective decision making, reports and data sets from the LEOKA program are released rather slowly. The annual *Law Enforcement Officers Killed and Assaulted* report is usually released almost a year after the year on which it reports. For instance, the 2013 report was released on November 24, 2014. The electronic data are released annually in a public archive and can be downloaded for secondary analysis by researchers. The data are typically released 16–18 months after the new year. The 2012 data, for instance, were released on April 16, 2014. When this report was being written (January–March 2015), the latest available data were from 2012. The timely availability of information is central to effective decision making.

2. The LEOKA data are incomplete.

Only 75.3 percent of the 18,295 agencies listed in the LEOKA database reported a full 12 months of data in 2012, 4.4 percent reported 1 to 11 months of data, and 20.3 percent reported 0 months of data. The 20.3 percent of agencies that did not report any data in 2012 represents missing data from 3,713 American law enforcement agencies. Among them are some major agencies including the New York; Chicago; Washington, D.C., Metropolitan; San Francisco; and Columbus (Ohio) Police Departments.

It is difficult to produce valid and reliable analyses of officers killed and assaulted when some of the nation's largest law enforcement agencies choose not to submit their agency data. Because the FBI's LEOKA program is a voluntary reporting system, agencies are simply not compelled to participate, and some do not participate. As result, there is a serious missing data problem that makes it difficult to draw inferences about trends and patterns in law enforcement officers killed and assaulted nationwide.

The FBI should develop mechanisms to encourage and improve law enforcement agency participation in the LEOKA reporting process.

3. The LEOKA data are not used very often for scientific research.

Critics have pointed out that there is a lack of focus by those who carry out and fund police research on the development of a systematic, cohesive, empirically defensible, longitudinal data collection strategy at the organization or the industry level. As a result, we are unable to measure, detect, or explain major changes (or continuities) in policing with any scientific confidence (Maguire and King 2004). The LEOKA data are a good example. Facilitating partnerships with researchers and improving data quality could go a long way toward improving the scientific knowledge base on officer safety.

What could help is if the research community and the law enforcement community (including the FBI) worked together to improve the quality of the LEOKA data and, as it improves, encourage broader use of the information for developing policies and practices to improve officer safety.

A growing number of police use of force cases—and, in some instances, use of excessive force cases—have generated substantial public and media concerns in 2014 and 2015. As a result, an important part of the national conversation in policing has recently focused on police use of force, police use of excessive force, and more specifically on the lack of a national database for tracking police use of force incidents nationwide. Given some of the observed systemic problems with the LEOKA data collection process, it would be prudent to address these concerns as a prerequisite for establishing another national data collection effort on police activities. We are hopeful that addressing the shortcomings of LEOKA will serve as a useful first step toward improving nationwide data collection processes overall. Once those problems are resolved, establishing a national use of force data collection system would be an important next step toward improving officer and citizen safety nationwide.

PART TWO. LITERATURE REVIEW

Some of the first studies related to police officer safety in the United States were conducted in the early 1960s based on data collected by students in police patrol classes at Los Angeles State College. These students gathered detailed case studies of police officers who had been injured or fatally wounded while on the job beginning in 1959 (Bristow 1963; Nicol 1961). The preliminary report, released in early 1961, contradicted many assumptions made by police officers and popular media at the time.[1] For instance, while most officers believed the greatest dangers involved approaching suspects in vehicles, the preliminary report illustrated that the highest percentage of officers was shot (or shot at) while dealing with suspects in buildings (Nicol 1961).

Bristow (1963) studied the completed dataset consisting of 110 cases, further supporting the findings released in the preliminary report. The validity of this study is questionable because of the use of convenience sampling methods rather than random sampling. Nonetheless, these two studies provide the foundation for later research of use of deadly force against police. The following sections of the literature review distinguish past research based on crime types, geography and characteristics of place, job-related factors, demographics of suspects and victims, and weapons used in attacks against officers.

Crime types, calls for service, and other situational factors

Throughout the 1970s and into the early 1980s, newspaper headlines featured stories of criminal homicides by police, painting pictures for the public of new threats by "hardened criminals and the emotionally disturbed or insane" (Margarita 1980, 64). This was oddly reassuring for the public;

it was easier to accept heinous acts against police as being carried out by people who were mentally incapacitated. However, emerging studies of officer deaths revealed quite the opposite. One study of New York Police Department (NYPD) officer-related homicides (using data on 239 homicides from 1844 to 1978) revealed that the shooting of officers indicated "clear calculations made by both professional and amateur criminals who use violence against police only to avoid apprehension and to escape from the scene of some illegal activity" (Margarita 1980, 64; Kaminski and Sorensen 1995). In other words, the use of deadly force against NYPD officers was largely motivated by self preservation. Suspects employed violence most often during an escape attempt following the commission of a violent crime (Margarita 1980).

Additional studies of use of deadly force against police have generally supported these findings, concluding that homicide deaths among officers occur most frequently during robberies in progress or when suspects are fleeing arrest (e.g., Takagi 1974; Garner and Clemmer 1986) and occur less frequently during traffic stops (Garner and Clemmer 1986; Lichtenburg and Smith 2001). The conclusions vary for crime types, however, in terms of nonlethal assaults on officers. A multiyear study published in 1994 (based on data from the city of Charlotte, North Carolina) found that, in addition to robbery calls, handling prisoners and responding to calls for service involving mentally deranged individuals significantly increased an officer's risk of being assaulted or killed (Hirschel et al. 1994). Kaminski and Sorensen (1995) found that the offense category that generated the greatest risk for officer injury included general public disturbances. Yet regardless of the offense category, the risk for officer injury significantly increased when suspects were under arrest, attempting to escape, or fighting or arguing. Interestingly, recent studies have shown that the injury- or death-related risks to officers grow during incidents involving "a greater number of crimes and a greater diversity of offenses" (Bierie et al. 2013, 16).

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1.   It is important to note that the cases included in this study were not randomly selected. As a result, it is unknown to what extent the sample is statistically representative of instances in which police officers were assaulted by firearms in the line of duty. As noted by the authors, the data "were extremely hard to collect. When the local cases . . . were exhausted, it became necessary to proceed by correspondence on a nationwide basis" (Bristow 1963, 93).

In other words, risks to officers may be less related to certain offense categories and more related to the number and range of offenses within a particular incident.

Other studies have considered the manner in which police respond to various types of calls for service in terms of risks to officer safety. In the mid-1980s, motor vehicle pursuits came under scrutiny due to the potential for serious injury and death (Kaminski et al. 2012). This led to an increase in research on that topic with administrators generally concluding that the risks of such pursuits (for both suspects and responding officers) outweighed the benefits unless the driver was suspected of carrying out a violent crime (Alpert and Dunham 1988). In more recent years, discussion has centered on the risk of foot pursuits for officer-related injuries and fatalities (e.g., Graham 2009; OSW Group 2012). To address this concern, Kaminski and colleagues (2012) studied foot pursuits in the Los Angeles County Sheriff's Department. Consistent with previous studies (e.g., Margarita 1980; Smith et al. 2007), their findings suggest that the odds of injury to officers increased when the suspect was assaultive rather than just resistant. The odds of injury to officers also increased when deputies used hard empty hand tactics.[2] However, the foot pursuit itself was not found to pose a greater risk to officer safety than the risks from general, resistant (i.e., not assaultive) police-citizen encounters (Kaminski et al. 2012).

A few studies have considered the role of accidental injuries to police officers while interacting with suspects. Using data from a large Midwestern police department in the United States, Brandl (1996) found that the majority of incidents resulting in injuries to officers (more than 92 percent) were accidental, and 40 percent occurred while the officer was trying to control or arrest the suspect. Further, nearly 60 percent of accidental officer injuries were not attributable to any actions of the suspects, indicating that most injuries either involved automobile accidents or occurred during physical training exercises.[3] Indeed, based on analysis of national data from 1992 to 1997, Clarke and Zak (1999) found that highway crashes accounted for

roughly one-third of law enforcement personnel fatalities. More recent data reveal that, depending on the year, traffic accidents rival felonious assaults as the leading cause of officer fatalities in the United States (Bierie et al. 2013, 2; Craun, Detar, and Bierie 2013; National Law Enforcement Memorial Fund 2015).

Wilson, Brunk, and Meyer (1990) argued that "perhaps the most obvious situational characteristic" that should be considered in assaults on police is the number of individuals present in addition to the suspect(s). The presence of bystanders or other witnesses during altercations may also influence both the officer's and the suspect's decision-making processes and may quickly escalate a situation (Rabe-Hemp and Schuck 2007; Toch 1969; Zimring 1972). Findings from a study by Wilson and her colleagues (1990) support this conclusion. The percentage of officer injuries among one- and two-person patrol units remained steady when zero or one civilian witnesses were present (roughly 42–46 percent); however, the percentage of officer injuries jumped to approximately 50–56 percent when two or three witnesses were present and further increased to 72 percent when four or more were present (for single unit patrols) (see also Croft 1985). Further, the number of witnesses present was found to significantly predict the number of officer injuries, particularly for one-unit patrols, while demographic characteristics of the suspects, including race, were not significant.

Geography and characteristics of place

Research has routinely shown that the southern (more specifically, southeastern) region of the United States experiences the greatest rate of police officer fatalities (Cardarelli 1968; Lester 1978a; Swedler et al. 2013). This region of the United States also experiences the highest rates of homicides in general, which has been correlated with the number of officer deaths (Lester 1978b; 1984). Between 1996 and 2010, the states with the highest frequency of officer fatalities included California (n = 73), Texas (n = 69), and Florida (n = 37) (Swedler et al. 2013); however, the states with the highest *rate* of officer deaths per 100,000 population included Arkansas (32.5), Mississippi (29.8), and Alabama (20.6). When analyzed regionally, the "east south central" region (identified in the study as Alabama, Kentucky,

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2. *Hard empty hand tactics* refers to the use of bodily force in the form of punching or kicking by the officer to gain control of a situation (NIJ 2015).

3. Brandl's (1996) findings, however, are not nationally representative as the data were only collected from one U.S. police department.

Tennessee, and Mississippi) experienced the highest rates of officer fatalities compared with other regions (Swedler et al. 2013).

Research on the relationship between the size of cities and officer injuries is limited because much of the past literature has not been nationally based or representative, so comparisons of city sizes could not be considered in many prior studies. However, some research (e.g., Cardarelli 1968) has found that larger urban settings constitute the greatest danger for police. Lester (1984) expanded on these studies by considering variations in population density within larger cities themselves and found that larger cities (particularly in the southern United States) with lower population densities had higher police officer fatalities. Lester (1984) also found that levels of gun violence and homicide rates in large cities were also moderately correlated with murders of police officers. Yet more updated comparative research is needed on city size and population density in relation to officer injuries and death. Further, the relationship between city or county size and violence against police may be more directly related to violent crime rates (Fridell et al. 2009).

Job-related risk factors

Some research has considered the impact of some job-related factors on officer injury or death. For instance, Cardarelli's (1968) early study found that the majority of police officers killed between 1961 and 1963 were younger than 40 years of age; 66 percent were killed before completing 15 years of service; and 43 percent were killed before they had completed five years of service. Kaminski and Sorensen (1995) identified a more complex relationship between the odds of officer injury and years of service. That is, the odds of injury to officers in Baltimore County declined sharply during the first six years of service; however, further reductions in the odds occurred only after about the 13th year of service.

Lester (1984) examined other characteristics of police departments across the United States with the highest rates of police officers murdered, including per capita police expenditures, personnel per capita, number of patrolmen, percent single officer units, and officer salaries (both minimum and maximum salary). However, only the expenditure per capita on the police department for all cities in the sample (33) was significantly correlated with the police murder rate (Lester 1984). Southwick (1998) did find a significant and negative relationship with police wages and felonious deaths of officers, indicating that the risk for death decreased as wages increased.

Earlier research launched a debate regarding the safety of one-officer versus two-officer patrols; Cardarelli (1968) found that 51 percent of police were alone on patrol when they were killed, while 49 percent were on a two-man patrol. Data collected in the 1970s revealed that in nonlethal assaults on officers, most (57 percent) of the time the officers were not injured, regardless of whether the officers were riding single or double (Wilson, Brunk, and Meyer 1990). However, among the group of officers that were injured, officers in one-person units were slightly more likely to be injured than those in two-person units.

Demographics of suspects and victims

Data on suspect and officer race are often cited in earlier studies as being scarce (Cardarelli 1968). However, some studies were able to include race as a factor (Bierie 2015), either in terms of suspect race, officer race, or racial composition of the general population. Lester (1978b) found that the murder rate of police officers was correlated with higher percentages of Black citizens within larger cities. However, in a later, more robust analysis containing data from 57 cities spanning eight years, Lester's (1984) findings did not support his earlier conclusions.[4]

Early reports from the FBI in the 1960s indicated that in California between 1960 and 1970, suspects accused of killing police officers were mostly White (55 percent), followed by Black (25 percent) and Hispanic (19 percent) (Takagi 1974). Interestingly, these percentages followed similar distributions of ethnic and racial groups in California's prison population at the time. Updated statistics from the OSW Group report that African Americans were vastly overrepresented among "felons who murdered police" (OSW Group 2012, 5); African Americans constituted almost 60 percent of suspects involved in police fatalities in 2010. More robust studies,

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4. Similarly, Lester's (1978b) earlier study also showed correlations between poverty and police fatalities, but his later study in 1984 did not find the same significant correlations.

however, have had mixed findings in terms of uncovering significant relationships between suspect race and officer injury or death. Uchida and Brooks (1988) and other scholars found no significant relationship between officer injury and suspect race (e.g., Bierie et al. 2013).

Weapons used

Studies of use of force against police overwhelmingly reveal that the majority of assailants use guns as the instrument of aggression in fatal attacks (Bierie et al. 2013; Clarke and Zak 1999; Kercher et al. 2013; OSW Group 2012; Swedler et al. 2013). According to FBI data spanning three years in the early 1960s, all but five officers killed feloniously in the United States were killed with firearms (Cardarelli 1968). In a 1980 study of NYPD officer homicides, 90 percent of suspects used guns against police, with knives used second-most often (Margarita, 1980). The FBI (1986) further reported that between 1976 and 1985, 90 percent of all police officer felonious fatalities were caused by gunshot wounds. However, some scholars (e.g., Wilson and Meyer 1990) have found that firearms play a smaller role in nonlethal assaults on officers than in lethal assaults. That is, across cities of all sizes, the most common type of weapon used in nonlethal attacks on officers was a "personal weapon," which included hands, fists, feet, and teeth and most often resulted in minor cuts and scrapes to the officer. The authors argue the findings reflect the most common types of police work such as making traffic stops and enforcing traffic-related laws (Wilson and Meyer 1990).

Scholars have noted, however, that "the choice of a particular weapon is determined by the offender's original intentions" (Margarita 1980, 70; see also Wilson and Meyer 1990). For instance, robbers tend to arm themselves with guns to restrain victims without the use of physical force as well as to give the offender a sense of supremacy (Block 1977; Margarita 1980; Toch 1992). If the gun is used during the robbery, it serves an instrumental purpose to ensure a safe getaway (Block 1977, 29). Indeed, Wilson and Meyer (1990) found that in nonlethal assaults on police, firearms were the weapon of choice for both robberies and ambushes. Margarita (1980) found that knife-wielding suspects often held goals of "angry aggression" and were often involved in public disturbances, domestic disputes, or "behaving

erratically" (70). As Wilson and Meyer (1990, 34) stated, "undoubtedly the potential for serious officer sustained injury [including death] is vastly increased by the presence of firearms in the incident."

A handful of studies have since directly addressed the relationship between gun laws and felonious deaths (e.g., Southwick 1998). Particularly, Mustard (2001) studied concealed weapon carry laws using state-level data from 1984 to 1996, concluding that U.S. states allowing citizens to carry concealed firearms may "slightly lower" the risk of death for police officers. However, the analysis suffered from some methodological issues that have not yet been resolved in this body of research.[5] More rigorous research is needed to draw clearer conclusions about the influence of gun availability on risks to police officers.

This review of the scientific literature reveals that on some occasions the use of weapons against police is not necessarily premeditated and is sometimes accidental (e.g., Brandl 1996; Hawkins and Ward 1970; Margarita 1980). This notion fits with prior research that uncovered the unintentional nature (including death) of many injuries to police while on the job (Brandl 1996). However, the vast majority of studies on police injuries and deaths are from non-representative samples (e.g., Brandl 1996; Cardarelli 1963; Johnson and Saint-Germain 2005; Kaminski and Sorensen 1995; Margarita 1980; Nicol 1961; Rabe-Hemp and Schuck 2007; Smith et al. 2007; Wilson, Brunk, and Meyer 1990).

As King and Sanders (1997) observe, much of the prior research on deaths in the line of duty, including government reports, is based on methodologically limited research. As such, many of the prior conclusions cannot be generalized to agencies across the United States. Nevertheless, findings from these studies are useful for identifying potential organizational and officer characteristics and phenomena that may be useful for developing policies, procedures, and training that might improve officer safety nationwide and reduce the risk of deadly force against officers in the future.

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5.   For instance, the economic analysis compared trends prior to and after the concealed carry laws went into effect without accounting for a lagged effect, and the findings were determined using significance levels of 0.10 (see also Southwick 1998).

PART THREE. THE CURRENT STUDY

Purpose of the current study

In an attempt to extend the efforts of past studies that employed national-level data (e.g., Bierie et al. 2013; Swedler et al. 2013), the current study first examines the links between violent crime rates and officer risk for injury and death associated with firearms. We then use a newly constructed dataset to identify agencies and jurisdictions where officers are at higher risk of being killed or assaulted with a firearm. We then matched those agencies, based on population and mean homicide rates over a five-year period, with agencies where officers were at lower risk. Finally, based on an online survey of law enforcement agencies, we explore how the high- and low-risk agencies might differentially train and respond to a range of high-risk events.

A basic premise underlying our approach to the research is the fact that some jurisdictions are riskier for police officers than others. In order to understand the role of police agencies in minimizing the level of risk and enhancing the level of protection among officers, it is necessary to control for jurisdictional differences in the level of risk officers face. The analytical challenge is somewhat similar to the study of mortality rates, in which researchers must control for the fact that some hospitals (like cancer centers) attract patients with more serious illnesses than others. In this case, the analytical challenge involves controlling for the fact that some communities experience more violence than others. Thus, the first step in the research process involved obtaining agency/jurisdiction-level data from throughout the United States on crime as well as law enforcement officers killed and assaulted. We then used these data to identify agencies facing *similar* levels of risk but having *different* levels of fatal and nonfatal firearms assaults against police officers. This process enabled us to identify low-risk and high-risk agencies that could then be compared using data from a survey carried out as part of this project.

Merging data on law enforcement officers killed and assaulted with UCR crime data

We began by obtaining the most recent five years (2007 to 2011) of data from the FBI's LEOKA data series (Regents of the University of Michigan 2016). This data series forms the basis for the FBI's annual LEOKA report, which provides national information about law enforcement officers who were killed feloniously or accidentally or who were assaulted while performing their duties. The FBI collects these data as part of the UCR program from nearly 16,000 law enforcement agencies each year. We then obtained crime data for the same period (2007–2011) from the UCR data series. These data are also available from the National Archive of Criminal Justice data website (Regents of the University of Michigan 2016).

We matched the two data sets at the agency level using the common ORI codes that are included in both datasets. This data integration and matching process resulted in a single database that included five years of data on UCR Part 1 crimes (homicide, robbery, sexual assault, aggravated assault, burglary, larceny, and motor vehicle theft), jurisdictional and agency demographics (population size, number of officers, state and region of the United States, etc.) and officer injuries and deaths as reported to LEOKA.[6]

Next, we developed and considered several different risk thresholds for identifying high-risk agencies, with "high risk" being associated primarily with firearms assaults against officers over the five-year time frame as reported to LEOKA. Those various thresholds are summarized in table 1 on page 12.

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6. The LEOKA dataset, like the UCR and other voluntary data collection initiatives, has some obvious and important limitations and methodological weaknesses. We explored these issues as part of this project and we discuss them in detail later in the report along with some recommendations for improvement.

Table 1. Three sampling options for identifying high- and low-risk agencies

Scenario 1	Low risk	High risk	Total	Thresholds for determining high risk
Not injured	159	159	318	10 or more officers assaulted with firearms without injury, 2007–2011
Injured or killed	36	36	72	5 or more officers killed feloniously or assaulted with firearms and injured, 2007–2011
Total	195	195	390	

Scenario 2	Low risk	High risk	Total	Thresholds for determining high risk
Not injured	105	105	210	15 or more officers assaulted with firearms without injury, 2007–2011
Injured or killed	36	36	72	5 or more officers killed feloniously or assaulted with firearms and injured, 2007–2011
Total	141	141	282	

Scenario 3	Low risk	High risk	Total	Thresholds for determining high risk
Not injured	74	74	148	20 or more officers assaulted with firearms without injury, 2007–2011
Injured or killed	36	36	72	5 or more officers killed feloniously or assaulted with firearms and injured, 2007–2011
Total	110	110	220	

Considered collectively, there were 1,926 law enforcement agencies that reported at least one assault with a firearm against an officer during the five-year period.[7] There were 1,014 firearms assaults on officers with injuries, 10,149 firearms assaults against officers without injuries, and 148 deaths attributable to firearms use against officers from 2007 to 2011 among the 1,926 agencies. However, many of the agencies had more firearms assaults against officers and a large number had very few. As such, we had to make some decisions about what constituted "high risk" for purposes of our matching and survey process.

7.   The FBI's UCR definition for assault is "the unlawful attack by one person upon another." In this study, we refer to firearms assaults on officers as "law enforcement officers assaulted with firearms" (with or without injury). For the FBI's UCR program, an assault without injury is classified as such if a firearm was found at the scene of incident and the victim officer was assaulted (with or without injury) during the incident. If the victim officer felt threatened during the incident, it can be reported as an assault without injury. If a firearm is at the scene of the incident and was used by the offender during the incident to threaten the victim officer (pointing the weapon at the officer, struggling with the officer for his or her own weapon, reaching for a firearm, etc.) it is classified as an assault without injury with a firearm. Therefore, an assault without injury with a firearm does not always indicate that shots were fired at an officer.

We ultimately chose the high-risk option that is detailed under scenario 1 in table 1. This meant that agencies were determined to be high risk if they reported 10 or more assaults with a firearm against officers, with or without injury, from 2007 to 2011. To be clear, this means that all 10 firearms assaults (or more) could have occurred in one of those years or it could be the case that the agency reported the 10 firearms assaults at any time over the five-year time frame. Ultimately, we chose this level of risk because we wanted to have a potentially larger sample of high-risk agencies to survey and a corresponding larger pool of low-risk agencies. This decision resulted in a potential sample size of 390 agencies (195 could be characterized as high risk and 195 could be characterized as low risk).

We ultimately identified 36 agencies in the high-risk group for officers assaulted with a firearm and either killed or injured and 159 agencies in the high-risk group for officers assaulted with a firearm but not injured. These 195 high-risk agencies, each of which reported at least 10 assaults with a firearm against officers between 2007 and 2011, with or without injury, were all invited to participate in the survey.

Selection of low-risk agencies and matching process

We next used a partially automated and partially manual matching process to select a group of low-risk agencies to serve as the comparison group based on population and mean homicide rates (homicides per 100,000 population) from 2007 to 2011. The automated portion of the matching process generated a rank-ordered list of low-risk agencies falling within a set confidence band around the populations and homicide rates of each individual high-risk agency. When this process generated a list of one or more matching agencies, we selected the highest-ranked agency (the closest match on population and homicide rate). When this process returned no matches, we incrementally adjusted the sensitivity levels (widening the confidence bands) until we arrived at a potential match.

Our goal was to match high- and low-risk agencies on population and mean homicide rates over a five-year time frame. Given the nature of our study and our interest in identifying the most at-risk agencies, our study ultimately focused primarily on law enforcement agencies serving the five largest

population groups: (1) cities with populations of 1,000,000 or more, (2) cities with populations from 500,000 to 999,999, (3) cities with populations from 250,000 to 499,000, (4) cities with populations from 100,000 to 249,999, and (5) counties with populations of 100,000 or more. To be clear, we matched high- and low-risk agencies based on actual populations. However, our surveys and analyses ultimately focused on cities and counties with larger populations and we therefore present some of our findings within population categories.

Table 2 on page 14 provides an example and a summary of the data that we used and the matching process that we relied upon. The table focuses on only agencies that were in the LEOKA and UCR datasets and that were serving cities with populations of 1,000,000 or more. Additional tables with summary data for agencies within other population categories are located in appendix A. Among the largest cities, high-risk municipal agencies such as the Philadelphia Police Department, the Los Angeles Police Department, and the Phoenix Police Department (where the number of firearms assaults against officers over the five-year period was above the mean for all agencies within that population category) were matched with low-risk agencies (e.g., Houston Police Department, Las Vegas Metropolitan Police Department, Dallas Police Department) serving populations of comparable sizes and with similar mean five-year homicide rates. Officers working in agencies identified in bold, blue italics. were at particularly high risk because the number of officers assaulted by firearms over the five-year period exceeded the mean by more than one standard deviation. We will offer recommendations for improving officer safety in those "highest high-risk" agencies in our conclusions and recommendations section.

In a few situations, a low-risk match was difficult to identify. As one example, Detroit had a particularly high mean homicide rate over the study time frame. For a small number of outliers like this, we needed to adjust the sensitivity of the matching algorithm so that we could identify the closest comparable low-risk match. Our impression is that, on their face, most matches appeared to be reasonable. In those instances where we had to adjust sensitivity levels considerably to find a match, the quality of the match was not as good. Ultimately, we were able to

identify matched low-risk comparison agencies for all of the high-risk agencies. Our online survey was subsequently disseminated to every high-risk agency and at least one matched low-risk agency for each high-risk agency.

Agency online survey description

An agency survey was designed to gather information concerning how the characteristics of police agencies and perceptions of police leaders might influence the risks of officers being assaulted, injured, or killed with firearms. The survey included questions with a variety of response formats (e.g., Likert scales, short answer or open-ended questions) that were focused on how law enforcement agencies prepare for or respond to seven types of high-risk scenarios: (1) foot pursuits, (2) domestic violence incidents, (3) burglaries in progress, (4) shots fired or firearm on scene, (5) mentally ill or emotionally disturbed or suicidal suspects, (6) serving arrest warrants on violent offenders, and (7) traffic stops (see appendix B for an earlier copy of the survey, although formatting and word changes occurred as the survey was reformatted for online dissemination).

Respondents were also asked what their agencies could do to mitigate the risk of firearms-related ambushes against their officers. These high-risk scenarios, derived from the LEOKA data, are disproportionately represented among the incident types in which officers are injured or killed.

The survey contained three sections. Section 1 focused on police executive views on ways to promote officer safety and was intended to be completed by the primary law enforcement executive (e.g., chief, commissioner, sheriff). Section 2a focused on departmental policies and practices around the eight high-risk scenarios and could be answered by either the primary law enforcement executive or someone who was familiar with the agency's policies and practices. Section 2b focused on the agency's recruitment and in-service training practices and was typically completed by a training officer. The survey was peer reviewed by three subject matter experts and revised a number of times based on their recommendations as well as feedback received during the pilot survey process. Once the survey was finalized, we uploaded it to a web-based survey site so agencies could complete it online.

Table 2. Selected agencies serving populations of 1,000,000 or more

Agency	State	Population	Five-year homicide rate (per 100,000 population)	Firearms assaults against officers over five years (N)	Rate of firearms assaults against officers over five years (per 100,000 population)
Philadelphia Police Department*	PA	1,530,873	22.34	*880*	*57.5*
Los Angeles Police Department*	CA	3,837,207	10.24	313	8.2
Phoenix Police Department*	AZ	1,466,097	10.57	311	21.2
Houston Police Department	TX	2,143,628	13.83	218	10.2
Las Vegas Metropolitan Police Department	NV	1,458,474	8.5	101	6.9
Dallas Police Department	TX	1,223,021	13.72	92	7.5
San Diego Police Department	CA	1,316,919	3.84	39	3.0
San Antonio Police Department	TX	1,255,339	8.06	34	2.5

* Mean assaults for all agencies in this population group = 248.5; standard deviation = 278.7; numbers and rates more than one standard deviation above the mean are denoted with bold, blue italics within the gray section.

Figure 1. Geographical distribution of law enforcement agencies responding to the survey
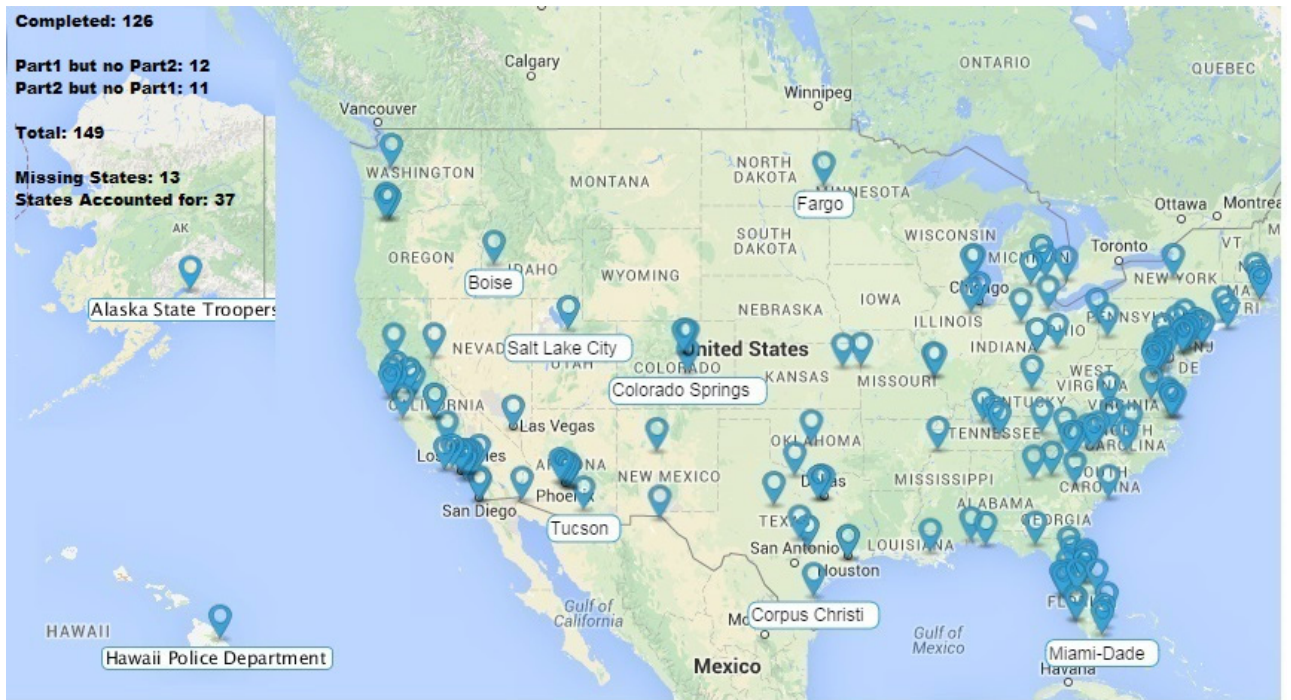
Online survey process and procedures

Because our survey needed to be completed by more than one person within some organizations, we split the survey into two sections. Section 1 was e-mailed directly to the law enforcement executives from SurveyMonkey. Sections 2a and 2b were sent to the same executives (or their designees) from a university e-mail address. The second section could be forwarded to others within the agencies, but the first section could not be sent to others.

We assembled a list of e-mail addresses for law enforcement chief executives from multiple sources, including the Major Cities Chiefs Association, the International Association of Chiefs of Police, and a variety of other sources (including agency websites, phone calls to agencies, and through word-of-mouth). There is not a publicly available listing of primary law enforcement executives' e-mail addresses, and we were unable to obtain such a list from the Federal Government. This survey, and others like it in the future, might have been launched to a much broader law enforcement audience (which could improve validity substantially) if the Federal Government were able to track and share e-mail addresses for law enforcement executives for research

purposes. Ultimately we disseminated the survey to a total of 350 law enforcement agencies in the United States, approximately half of which were high-risk agencies and half of which were low-risk agencies.

The survey was officially launched in July 2014 and closed in October 2014. To keep track of which agencies responded and to what part of the survey, we maintained a database that listed all the agencies, their e-mail information, agency addresses, and whether or not they had answered section 1, section 2, or both.[8]

After the data were cleaned, there were a total of 149 agencies out of 350 who responded to the survey for an overall response rate of 42.6 percent. Of the 149 agencies that responded to the survey, 12 agencies completed section 1 but not sections 2a and 2b, 11 completed sections 2a and 2b but not section 1, and 126 agencies completed all sections for a complete survey response rate of 36 percent.[9] Geographically,

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8.   Five agencies requested a PDF or hard copy of the survey. These responses were later manually entered into the database containing the responses collected through SurveyMonkey.

9.   Historically, response rates of at least 50 percent for other types of surveys (mail, fax, hand-delivered, etc.) were considered adequate for analytical purposes (Dillman 1999). However, evidence suggests that

we invited agencies from 46 states and received responses from 37 of those states (see figure 1 on page 15).[10] We received responses from four state police departments, 119 municipal or city police departments, and 26 county or sheriffs' agencies. Once all the data were cleaned and coded, we uploaded each dataset into SPSS. We then merged the agency-level LEOKA and UCR data with section 1 and section 2 survey data.

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response rates for online surveys might be systematically lower and may be decreasing over time. Sheehan (2001) found that response rates to e-mailed surveys from 1991–1996 averaged 46.8 percent but decreased to 29.5 percent from 1997–2000. Hamilton (2003) reported wide variation in response rates at one online survey website, where half of the surveys generated at least a 26 percent response rate, the average response rate was 32.5 percent, and small targeted surveys tended to generate slightly higher response rates. Nulty (2008) summarized a series of online survey studies and found that those produced, on average, a 33 percent response rate in educational settings specifically. Finally, a meta-analysis calculated an average response rate of 39.6 percent from 68 surveys across 49 studies (Cook, Health, and Thompson 2000). These comparisons suggest that the response rate in this study is consistent with other online survey projects.

10. The 13 states that were unaccounted for were Arkansas (4 agencies were included, but one opted out and the rest did not respond); Iowa (four agencies were included, but one opted out and the rest did not respond); Maine (one agency was included but did not respond); Mississippi (two agencies were included, but we only found an e-mail address for one that one did not respond); Montana (0 agencies were included); Nebraska (two agencies were included, but neither responded); New Hampshire (one agency was included but did not respond); Rhode Island (one agency was included but did not respond); South Dakota (one agency was included but did not respond); Vermont (0 agencies were included); West Virginia (0 agencies were included); and Wyoming (0 agencies were included).

SECTION 1 SURVEY RESULTS. EXECUTIVE VIEWS ON IMPROVING OFFICER SAFETY

A total of 138 agencies completed section 1 of the survey (64, or 46 percent, high risk and 74, or 54 percent, low risk), which explored law enforcement executives' views of officer safety practices when responding to risky scenarios. This section of the survey was intentionally brief. We focused our questions on two primary topics: perceptions of officer safety and firearms-related ambushes.

Most law enforcement executives, in both high- and low-risk agencies, agreed or strongly agreed that their officers were more mindful of their own safety than officers in other agencies when responding to various types of high-risk calls (see table 3).[11]

Table 3. Compared with officers from other police agencies, officers in my agency are more mindful of their own safety when engaged in or responding to . . . (N = 138)

Scenario	Disagree	Neither	Agree	Strongly agree
	Frequency N (%)*	Frequency N (%)*	Frequency N (%)*	Frequency N (%)*
Foot pursuits	5 (4)	25 (18)	56 (41)	52 (38)
Domestic violence	3 (2)	19 (14)	68 (49)	48 (35)
Burglary in progress	2 (1)	22 (16)	72 (52)	42 (30)
Firearms-related call	2 (1)	14 (10)	39 (28)	83 (60)
Mentally ill	4 (3)	23 (17)	49 (35)	62 (45)
Serving warrants	4 (3)	14 (10)	42 (30)	78 (56)
Routine traffic stops	7 (5)	31 (22)	66 (48)	34 (25)

* Rounding may cause percentages across rows not to add up to 100.

11. None of the respondents answered "strongly disagree" to these questions, so that response option is not included in table 3.

The mean responses for high- and low-risk agencies were not significantly different, suggesting that perceptions among law enforcement leaders regarding the safety precautions taken by their officers were similar regardless of whether they worked in low-risk or high-risk settings.[12]

As a reminder, significantly more officers in high-risk agencies were killed and assaulted by firearms over the last 10 years compared to officers in low-risk agencies. High-risk agencies were also located in communities with significantly higher average Part 1 crime rates over a five-year period (these analyses/statistics are available upon request).

If we collapse the "agree" and "strongly agree" responses into one agreement category, then a mean of 82 percent of law enforcement executives across high- and low-risk agencies agree that officers in their own agency are more mindful of safety than officers in other agencies. This may be a leader-level version of a well-known form of cognitive bias called "illusory superiority" in which people overestimate their own abilities relative to others (Hoorens 1993). This phenomenon is sometimes referred to as the "Lake Wobegon effect" in reference to a Garrison Keillor (2010, 165) radio show that describes a mythical town where "all the children are above average." Illusory superiority can be very dangerous in some circumstances, particularly in high-risk occupations like policing. If most police leaders rate their officers' level of mindfulness about safety as above average, then some of these perceptions are likely to be inaccurate.

We then asked the law enforcement executives to offer three recommendations for reducing officer ambushes related specifically to the use of firearms. Many respondents provided only one recommendation, so only the first of each agency's narrative responses were content-analyzed, categorized, and coded. These are summarized in table 4. Enhanced training (specifically situational awareness training) and improved intelligence gathering and dissemination were the two most commonly reported recommendations by law enforcement leaders. The following narrative response encapsulates these suggestions:

> *I believe that creating a culture of police officer safety is paramount. Beginning in the police academy, the goal is to impart the importance of officer safety. It is at this juncture that recruits start to realize the nature of the profession they have chosen. We often speak of the need to be tactically aware of your surroundings, never to let your "guard" down, the avoidance of "tombstone courage," and that any call, no matter the appearance of routine, may escalate into a life and death situation.*

It was perhaps expected that law enforcement leaders would focus on enhancing training in an effort to minimize ambush attacks. Admittedly, ambushes are difficult to anticipate and defend against across such a broad range of law enforcement activities, communities, and potential scenarios. The following quote from a midwestern police leader suggests as much:

> *There is no amount of training or equipment that's going to keep a committed person from ambushing a police officer. But training and constant reminders for officers to be aware of their surroundings will help to reduce the risk and make it more difficult for a person to kill a police officer. It's difficult for an officer to be constantly vigil[ant] of their surroundings, but officers can park their cars and eat lunch in places that would allow an officer to be aware of individuals around them, as well as maintaining some tactical advantage. As administrators we need to make sure officers wear their ballistic vests.*

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12. A series of t-tests was used to assess mean differences between low-risk and high-risk agencies. While the low response rate in this study is consistent with response rates in other online surveys, it does present certain analytical challenges. Studies based on small samples often have low statistical power, which means they have difficulty detecting effects even when such effects are present. During the planning phase of this study, preliminary power analyses revealed that we would we be unable to detect small differences (d=.2) between the low- and high-risk agencies due to resource limitations that constrained the number of agencies we could survey. However, power analyses showed that we would be able to detect medium-sized differences (d=.5) between groups with a total achieved sample size of 210, or approximately 105 per group. Given our initial sample size of 380 agencies, reaching an achieved sample size of 210 would require approximately a 55 percent response rate to the survey. To detect a large-sized difference (d=.8 or greater), our preliminary power analyses showed that we would only need a total sample size of 82, or approximately 41 per group (which would have required about a 22 percent response rate). Thus, with the achieved sample size of 138 in section 1 of the survey, our study is only able to detect moderate to large differences between groups because the small sample size limits the study's power to detect smaller effects.

Table 4. In your opinion, what steps can police leaders take to help reduce the number of fatalities, injuries, and near misses associated with firearms-related ambushes of police officers? (N = 138)

	Frequency (N)	Percent (%)
General training recommendation	29	21
Improve community relations	3	2
Stronger focus on officer safety	7	5
Situational awareness training	34	25
Gather and disseminate better intelligence	18	13
Increased firearms training	7	5
Focus on tightening firearms policies for citizens	4	3
Reality-/scenario-based training	13	9
Improve tactical training	8	6
Improve available equipment	4	3
Other responses	11	8
Total	**138**	**100**

Another law enforcement leader recognized the limitations associated with reducing firearms-related officer ambushes and commented as follows:

> *An ambush is one of the hardest things to train and prepare for. Leaders should train their officers to have an escape plan/route when responding to all calls for service. Officers need to remain vigilant on even the most routine sounding call. Suspects want officers to believe the call is routine when they make their ambush attempt. Tactical approaches, using a cover officer (when available), and using basic cover/concealment should be trained and practiced. Also, reference materials (officer involved shooting videos, written articles) regarding incidents that have occurred should be provided to officers for training purposes. Training to prepare for an ambush and to stay in the fight is critical.*

These narrative responses represent some of our law enforcement leaders' best suggestions for reducing firearms-related officer ambushes. Identifying effective situational awareness training and vigilance training seem to be important next steps. Once identified, those training protocols could be evaluated and, if found to be effective, expanded and replicated for use by other agencies nationwide. Certainly improvements in body armor and mandatory policies that require officers to wear armor are important safety steps. Most of the survey respondents indicated that their agency covered the costs of body armor. However, 23 agencies (17 percent) acknowledged that their officers were not required to wear their body armor at all times while on patrol. Given the role of patrol officers in handling a wide range of calls and other activities that may place them at risk for being ambushed, it may be appropriate for these agencies to consider adopting mandatory wear policies.

SECTION 2A SURVEY RESULTS. ORGANIZATIONAL POLICIES AND PRACTICES AROUND HIGH-RISK SCENARIOS

Section 2 of the survey focused on departmental policies and training, particularly related to the seven high-risk scenarios introduced earlier. This part of the survey was either filled out by the primary law enforcement executive or forwarded to others within the agency (deputy chiefs, training officers, supervisors, etc.).

A total of 134 agencies (63 high risk, or 47 percent, and 71 low risk, or 53 percent) completed sections 2a and 2b of the survey. Forty-four responses were from executives, 42 were from mid-level managers (lieutenants, captains, majors), 36 were from first-level supervisors (sergeants), and 12 were from officers (training officers or officers and deputies). Consistent with earlier findings, analyses confirmed that the responding high-risk agencies had significantly higher crime rates than the low-risk agencies from 2007 to 2011 and experienced significantly higher risks of officers being assaulted by firearms over that same time frame (analyses available upon request).

We first asked the agencies to report on whether their department had a written policy that guided officers and deputies on how they should safely respond to seven high-risk scenarios (see figure 2 on page 22). The 134 responding agencies were least likely to have written policies that guided officers on how to safely engage in foot pursuits and were most likely to have written policies for responding to mentally or emotionally unstable suspects and domestic violence calls. Only three departments did not have any written policies for how to respond to any of the high-risk scenarios. From this we can conclude that thousands of other law enforcement agencies likely do not have formal written policies for how officers should respond to risky calls for service or other high-risk scenarios.
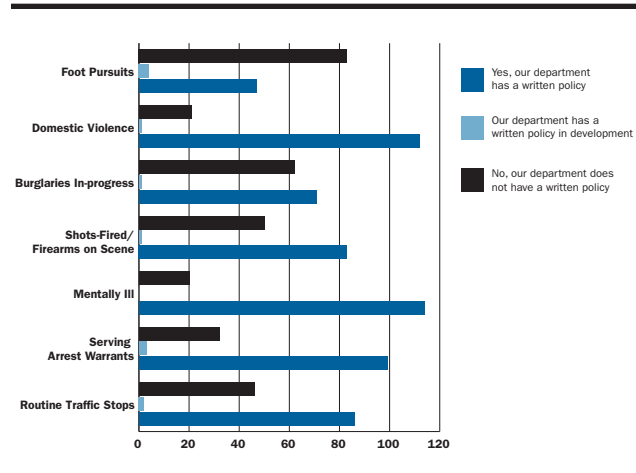
The 63 high-risk agencies that responded to this section of our survey were equally as likely (or unlikely) to have established written polices for all of the seven high-risk scenarios as the 71 responding low-risk agencies. In other words, the level of risk of firearms assaults against officers within a jurisdiction was not significantly related to the likelihood of the department developing a written policy for how officers should respond to foot pursuits, domestic violence incidents, burglaries in progress, shots fired or firearm on scene, mentally ill or emotionally disturbed or suicidal suspects, serving arrest warrants on violent offenders, and traffic stops.[13] Nevertheless, there was some observed variability in terms of policy development when considering all of the agencies in the sample.

This variability in departmental proactive preparedness for responding to risky scenarios can potentially be addressed. As one possible response, the major professional law enforcement organizations (such as the Major Cities Chiefs Association, the International Association of Chiefs of Police, and the National Sheriffs' Association) could work together to develop model officer safety policies for responding to high-risk scenarios. Those policies could then be widely disseminated, and academy and in-service training could be improved accordingly. Some such model policies are already available (e.g., foot pursuits, domestic violence response, motor vehicle stops; see International Association of Chiefs of Police 2015) and could be proactively distributed to high-risk agencies.

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13. We used cross-tabulations with chi-square tests to assess these group differences. We tested the relationships using "policies in development" first as a separate response category (a 2 x 3 table) and then after recoding those answers to "Yes, the agency had a written policy" (a 2 x 2 table). The results were not statistically significant.
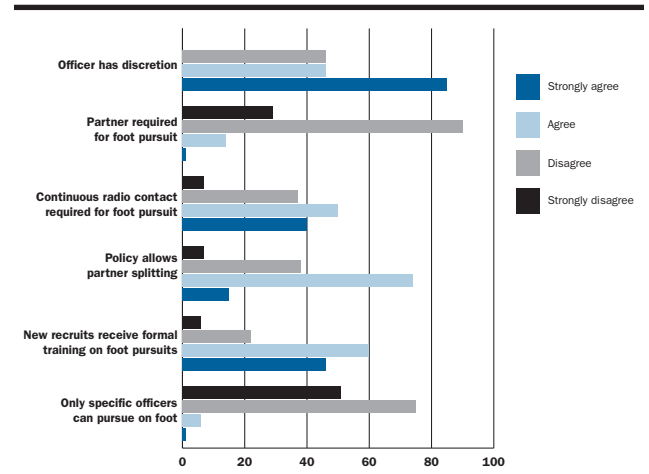
Figure 2. Departmental policies on responding to high-risk scenarios

Legend:
- Yes, our department has a written policy
- Our department has a written policy in development
- No, our department does not have a written policy

Categories: Foot Pursuits, Domestic Violence, Burglaries In-progress, Shots-Fired/Firearms on Scene, Mentally Ill, Serving Arrest Warrants, Routine Traffic Stops

We next asked a series of questions about current departmental policies or practices regarding how agencies and officers respond to these high-risk scenarios. The questions were designed to gauge the extent of agreement about whether current or future policies or practices (if a written policy was not available at the time) should be designed to include a series of potential recommendations for improving officer safety. These recommendations might allow more or less officer discretion, permit officers to respond alone or require partners when responding to high-risk calls, require waiting for backup to arrive if the dispatched officer was alone, mandate continuous radio contact during the event (e.g., in a foot pursuit), limit partner splitting if partners are required, encourage specific types of training for those responding to high-risk calls, or only allow certain officers to respond to certain types of high-risk calls (e.g., some agencies might have a designated domestic violence officer or team of officers who have been specially trained, and only that officer or team of officers could respond; other agencies might do so for responding to emotionally disturbed or mentally ill citizens).

Figure 3 provides an example of the types of questions (with Likert-style response options ranging from strongly disagree to strongly agree) and the variation in responses that we received regarding preparing officers for foot pursuit response specifically. The results suggest that respondents from most of the agencies considered officer discretion to be important and correspondingly disagreed that partners should be required when engaging in foot pursuits.

Figure 3. When engaging in foot pursuits, do you agree or disagree that . . .

Legend:
- Strongly agree
- Agree
- Disagree
- Strongly disagree

Categories: Officer has discretion, Partner required for foot pursuit, Continuous radio contact required for foot pursuit, Policy allows partner splitting, New recruits receive formal training on foot pursuits, Only specific officers can pursue on foot

There was more agreement regarding the necessity of continuous radio contact, but respondents from all agencies also generally preferred to allow for partner splitting during foot pursuits. Respondents from most agencies generally agreed that new recruits should be formally trained to pursue suspects on foot but disagreed with the suggestion that only specific officers should be allowed to engage in foot pursuits.

Figure 4 on page 23 summarizes the responses to the same set of questions but focuses specifically on domestic violence call response. Again, fairly substantial variation is apparent, although respondents from most agencies agreed that specific, formal training on responding to domestic violence calls is needed for all new recruits. On the other hand, there was wide variability in opinions regarding whether officers should have discretion, maintain continuous radio contact, or respond alone or even whether only designated officers should respond to domestic violence calls.

Figure 4. When responding to domestic violence calls, do you agree or disagree that . . .

be specifically trained to respond to firearms-related calls, and some suggested that waiting for backup to arrive was not necessary. Most respondents generally agreed that continuous radio contact was important during firearms-related calls, but there were some differences in terms of how much officer discretion should be allowed.

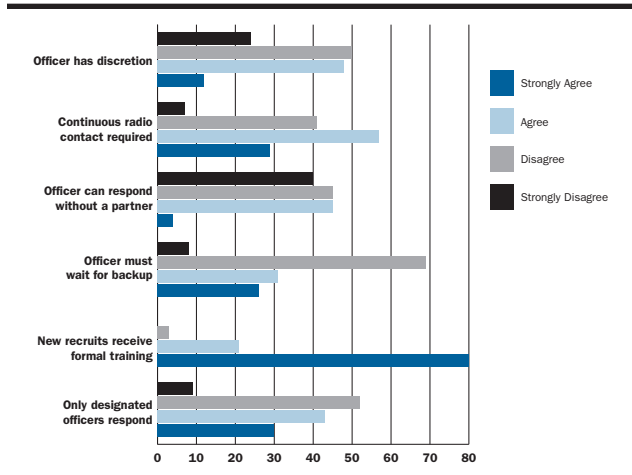## Figure 6. When responding to firearms-related calls . . .

Figure 5 focuses the same set of questions on responses to burglaries in progress. Based on the levels of agreement, respondents seem to believe that these kinds of calls may offer more risk, given that more respondents agreed that all recruits receive formal training, that backup or continuous radio contact (or both) should be required, and that partners are necessary prior to responding to burglaries in progress. It also appears that most respondents support the idea that officers maintain discretion in how to respond.

Figure 7 offers answers to the same set of questions but this time focuses on how the agency prepares or plans to prepare officers to responding to mentally ill, suicidal, or emotionally disturbed individuals. In these situations, respondents more consistently agreed that only designated officers should respond and that all new recruits should be trained in this area specifically.

Figure 5. When responding to burglaries in progress, do you agree or disagree that . . .

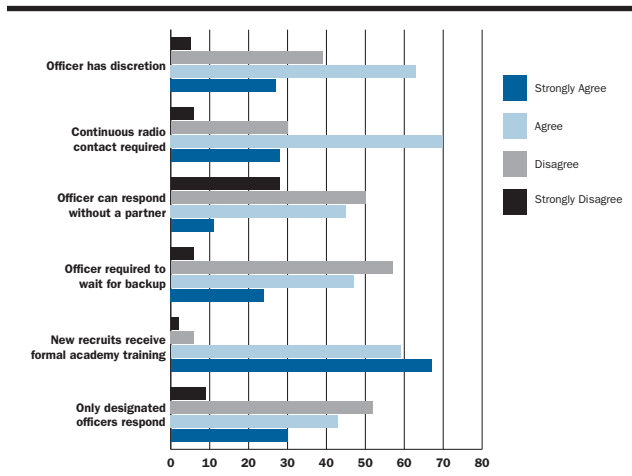## Figure 7. When responding to mentally ill, suicidal, or emotionally disturbed individuals . . .

Figure 6 focuses on how respondents indicated that their departments would respond to firearms-related calls. In this case, there was strong disagreement with the suggestion that only certain officers should be permitted to respond to these kinds of calls. Most respondents believed that all new recruits should
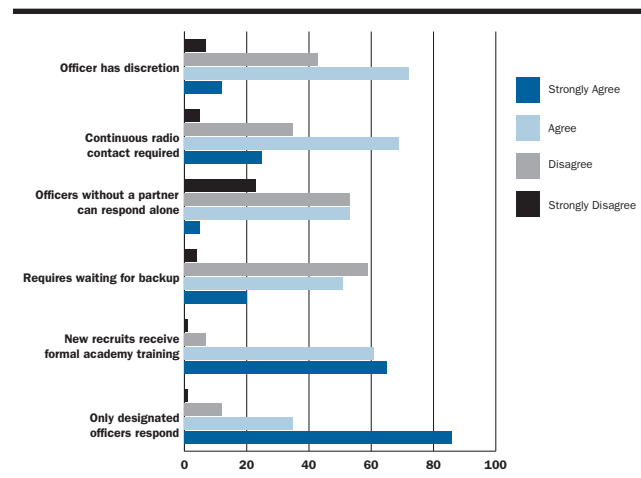
However, there was not universal agreement on whether waiting for backup to arrive should be required or whether officers can or should respond alone. Most respondents, but not all, indicated that continuous radio contact was important during these calls but most suggested that officers should have discretion.

Figure 8 summarizes the responses to the questions that focused on serving arrest warrants on violent offenders. In this case, there was more agreement that only designated officers should serve warrants on violent offenders specifically and that officers should not do so alone but should instead wait for backup. Most agreed that continuous radio contact was important while issuing arrest warrants. Nevertheless, there was broad support for training all officers to serve arrest warrants on violent offenders. On the other hand, there was some disagreement on whether officers should have discretion in these situations.

Figure 8. When serving arrest warrants on violent offenders . . .
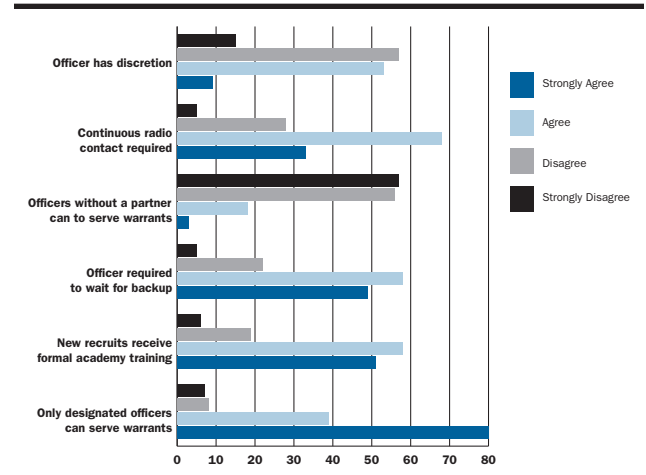
Bivariate statistical analyses (differences in means tests and cross-tabulation tests) comparing high- and low-risk agencies again revealed no significant differences in current or anticipated departmental policies or practices regarding how the agencies and their officers responded (or would respond) to the high-risk scenarios. In other words, responding agencies operating in higher-risk environments (with increased numbers of firearms assaults against officers and higher crime rates) were no more likely to think that their officers needed more or less discretion, that radio contact or backup should be required, that specific training was needed, or that only designated officers should respond to *any* of the high-risk scenarios.

SECTION 2B SURVEY RESULTS. CURRENT ACADEMY AND IN-SERVICE TRAINING PRACTICES

The third section of our survey focuses on current academy and in-service training practices around use of force more generally and on the use of firearms specifically. Table 5 summarizes the number of academy hours that are devoted to use of force topics across various departments serving different populations. Generally, there appears to be a linear relationship between number of use of force training hours and the size of the population served. Stated differently, larger city and county agencies devote more time to use of force training.

Correlational analyses (not presented) confirm that the number of academy training hours devoted to use of force and to the use of firearms was significantly associated with population size and agency size (based on sworn force). As such, officers who are hired to work in agencies that serve larger populations receive more dedicated hours of use of force training. However, the average number of training hours devoted to use of force topics was not significantly higher for officers working in high-risk agencies than for those working in low-risk agencies.

Stated more clearly, more hours of use of force training is common in larger agencies, regardless of crime trends or firearms assaults against officers.

Several questions remain regarding what specific types of training are offered, whether continued refresher or in-service training was available, and whether that training is effective at improving officer safety. Regarding the first question, table 6 on page 26 summarizes the types of use of force training that are offered at training academies.

As a general rule, most agencies reported that their academies do specifically train new recruits on how to safely engage in foot pursuits; serve arrest warrants on violent offenders; respond to burglaries in progress, disturbance calls, domestic violence incidents, and shots-fired calls; and deal with mentally ill or emotionally disturbed citizens. However, again there were not any significant differences in the proportion of high- or low-risk agencies that offered academy training in any of these specific areas.

Table 5. Mean number of use of force training hours by population served

Population Group	Average number of hours	Responses (N)
Cities with populations ≥ 1,000,000	154	7
Cities with populations 500,000–999,999	135	14
Cities with populations 250,000–499,999	151	16
Cities with populations 100,000–249,999	94	38
Cities with populations 50,000–99,999	74	11
Cities with populations 25,000–49,999	40	4
Counties* with populations ≥ 100,000	112	21

* Because the county agencies were being compared to city agencies, the survey considered only agencies serving metropolitan (urban) counties rather than rural counties.

Table 6. Types of use of force and high-risk scenario training delivered in academies

Did your most recent class of recruits receive training in the following areas	No N (%)	Yes N (%)
Use of force continuum policy	6 (5)	111 (95)
Officer safety practices	0 (0)	117 (100)
Foot pursuit safety	12 (10)	105 (90)
Serving arrest warrants on violent offenders	20 (17)	97 (83)
Responding to burglaries in progress	5 (4)	112 (96)
Use of less-lethal weapons	4 (3)	113 (97)
Responding to domestic violence incidents	1 (1)	116 (99)
Responding to disturbance calls	2 (2)	115 (98)
Responding to "shots fired" calls	5 (4)	112 (96)
Arrest and control tactics	0 (0)	117 (100)
De-escalation and defusing techniques	0 (0)	117 (100)
Dealing with citizens with mental illness	2 (2)	115 (98)
Verbal and physical tactics that are used to identify suspects who may be carrying concealed firearms	6 (5)	111 (95)

We also asked about specific forms of firearms-related training. There was some variation across respondents, but as a general rule respondents from most agencies reported that officers in their agencies are trained for a wide range of shooting situations as indicated in table 7. High- and low-risk agencies did not differ in the types of shooting training that is offered.

Table 8 provides a summary of average number of hours of in-service or refresher annual training in firearms and other use of force topics among responding agencies.

The results suggest that ongoing firearms-related training and in-service use of force training does occur in many, but not all, of our responding agencies. The annual number of in-service training hours devoted to these safety topics is rather modest, ranging from 0 to 40 hours for firearms training (with average hours ranging from 6 to 13 across varied population categories) and from 0 to 60 hours for other use of force topics (with average hours ranging from 4 to 14 across varied population categories). Again, there were no significant differences in average training hours between high- and low-risk agencies.

Table 7. Types of firearms-related training offered in academies

Does your recruit academy training on use of firearms involve training in the following	No N (%)	Yes N (%)
Shoot while moving	7 (6)	110 (94)
Shooting at moving targets	31 (26)	86 (74)
Shoot/don't shoot	3 (2)	114 (98)
Weak-hand shooting	4 (3)	113 (97)
Shooting at night or in low-light conditions	0 (0)	117 (100)
Shooting when physically fatigued	21 (18)	96 (82)
Shooting from a concealed location	6 (5)	111 (95)

Finally, table 9 summarizes the specific types of in-service training that is offered across use of force topics more broadly and within the specific types of high-risk scenarios. As a general rule, the majority of responding agencies do offer some in-service training on high-risk scenario response. However, about a third of the agencies did not offer in-service training for engaging in foot pursuits, serving arrest warrants on violent offenders, or responding to burglaries in progress. In-service training opportunities did not differ across high- and low-risk agencies.

Table 8. Total hours devoted to in-service or refresher training on firearms and use of force (N=112)

Population group	Firearms (Range: 0–40 hours)	Other use of force topics (Range: 0–60 hours)
Cities with populations ≥ 1,000,000 (N=7)	7	14
Cities with populations from 500,000–999,999 (N=14)	9	10
Cities with populations from 250,000–499,999 (N=16)	11	7
Cities with populations from 100,000–249,999 (N=38)	13	12
Cities with populations from 50,000–99,999 (N=11)	12	8
Cities with populations from 25,000–49,999 (N=4)	6	4
Counties with populations ≥ 100,000 (N=22)	12	8

Table 9. Areas in which agencies offer in-service or refresher training

Does your agency offer in-service or refresher training in the following areas?	No N (%)	Yes N (%)
Use of force continuum policy	9 (8)	108 (92)
Officer safety practices	0 (0)	117 (100)
Foot pursuit safety	44 (38)	73 (62)
Serving arrest warrants to violent offenders	40 (34)	77 (66)
Responding to burglaries in progress	39 (33)	78 (67)
Use of less lethal weapons	1 (1)	116 (99)
Responding to domestic violence incidents	16 (14)	101 (86)
Responding to disturbance calls	31 (26)	86 (74)
Responding to "shots fired" calls	22 (19)	95 (81)
Arrest and control tactics	6 (5)	111 (95)
De-escalation and defusing techniques	11 (9)	106 (91)
Dealing with citizens with mental illness	4 (3)	113 (97)
Verbal or physical cues or tactics that are used to identify suspects who may be carrying concealed firearms	27 (23)	90 (77)

Section 2b Survey Results. Current Academy and In-Service Training Practices

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APPENDIX A. SUMMARY DATA FOR SELECTED AGENCIES

The cities whose police agencies are included in this appendix were chosen from the larger data set to demonstrate how the data were examined, reviewed, and analyzed and to provide examples within each population group of cities or counties that have unusually high or low rates of firearms assaults against officers. Cities whose firearms assaults (both absolute numbers and rates per 100,000 population) are more than one standard deviation above the mean for their population group are identified with bold, blue italics and should be examined further.

Table A1. Selected agencies serving cities with populations of 1,000,000 or more

Agency	State	Population	Five-year homicide rate (per 100,000 population)	Firearms assaults against officers over five years (N)	Rate of firearms assaults against officers over five years (per 100,000 population)
Philadelphia Police Department*	PA	1,530,873	22.34	*880*	*57.5*
Los Angeles Police Department*	CA	3,837,207	10.24	313	8.2
Phoenix Police Department*	AZ	1,466,097	10.57	311	21.2
Houston Police Department	TX	2,143,628	13.83	218	10.2
Las Vegas Metropolitan Police Department	NV	1,458,474	8.5	101	6.9
Dallas Police Department	TX	1,223,021	13.72	92	7.5
San Diego Police Department	CA	1,316,919	3.84	39	3.0
San Antonio Police Department	TX	1,355,339	8.06	34	2.5

* Mean firearms assaults against officers over five years for all agencies in this population group: 248.5; standard deviation: 278.7. Agencies denoted with asterisks had firearms assaults (both absolute numbers and rates per 100k population) above the mean; numbers and rates more than one standard deviation above the mean are denoted with bold, blue italics within the gray section.

Table A2. Selected agencies serving cities with populations from 500,000–999,999

Agency	State	Population	Five-year homicide rate (per 100,000 population)	Firearms assaults against officers over five years (N)	Rate of firearms assaults against officers over five years (per 100,000 population)
Memphis Police Department*	TN	652,725	20.1	*158*	*24.2*
Detroit Police Department*	MI	713,239	48.65	*141*	*20.0*
Baltimore (City) Police Department*	MD	626,848	38.06	*121*	*19.3*
Louisville Metro Police Department*	KY	665,152	9.77	*116*	*17.4*
Charlotte-Mecklenburg Police Department*	NC	789,478	9.17	96	12.2
Albuquerque Police Department*	NM	551,961	9.02	75	13.6
Jacksonville Police Department*	FL	834,429	11.96	69	8.3
Oklahoma City Police Department*	OK	586,208	11.02	57	9.3
Nashville Police Department*	TN	612,789	11.72	56	9.1
Fresno Police Department*	CA	500,480	8.59	54	10.8
Milwaukee Police Department	WI	597,426	15.13	53	8.9
Indianapolis Metropolitan Police Department	IN	833,024	13.25	52	6.2
Washington Metropolitan Police Department	DC	617,996	24.53	50	8.1
Tucson Police Department	AZ	527,479	10.54	35	6.6
El Paso Police Department	TX	662,780	2.75	31	4.7
Denver Police Department	CO	610,612	7.37	22	3.6

* Mean firearms assaults against officers over five years for all agencies in this population group: 53.2; standard deviation: 44.6. Agencies denoted with asterisks had firearms assaults (both absolute numbers and rates per 100k population) above the mean; numbers and rates more than one standard deviation above the mean are denoted with bold, blue italics within the gray section.

Table A3. Selected agencies serving cities with populations from 250,000–499,999

Agency	State	Population	Five-year homicide rate (per 100,000 population	Firearms assaults against officers over five years (N)	Rate of firearms assaults against officers over five years (per 100,000 population)
St. Louis Metropolitan Police Department*	MO	320,454	45.06	**274**	**85.5**
Kansas City Missouri Police Department*	MO	461,458	22.97	**104**	**22.5**
Atlanta Police Department*	GA	425,533	23.59	**91**	**21.4**
Pittsburgh Bureau of Police*	PA	308,609	17.17	**87**	**28.2**
Mesa Police Department*	AZ	445,256	4.94	77	17.3
Long Beach Police Department*	CA	467,691	8.38	55	11.8
Newark Police Department*	NJ	278,064	31.29	48	17.3
Tulsa Police Department*	OK	396,101	15.2	43	10.9
Wichita Police Department*	KS	384,796	8.37	40	10.4
Anchorage Police Department	AK	296,955	6.94	29	9.8
Lexington Police Department	KY	297,847	5.77	27	9.1
Toledo Police Department	OH	287,418	9.39	24	8.4
Aurora Police Department	CO	330,740	6.05	23	7.0
Stockton Police Department	CA	295,136	13.42	22	7.5
Tampa Police Department	FL	340,284	8.64	21	6.2
Colorado Springs Police Department	CO	423,680	7.18	20	4.7
Raleigh Police Department	NC	409,014	5.13	20	4.9

* Mean firearms assaults against officers over five years for all agencies in this population group: 32.7; standard deviation: 49.1. Agencies denoted with asterisks had firearms assaults (both absolute numbers and rates per 100k population) above the mean; numbers and rates more than one standard deviation above the mean are denoted with bold, blue italics within the gray section.

Table A4. Selected agencies serving cities with populations from 100,000–249,999

Agency	State	Population	Five-year homicide rate (per 100.000 population)	Firearms assaults against officers over five years (N)	Rate of firearms assaults against officers over five years (per 100,000 population)
Kansas City, Kansas Police Department*	KS	146,712	17.72	40	27.3
Baton Rouge Police Department*	LA	231,592	31.18	38	16.4
Orlando Police Department*	FL	241,548	13.08	36	14.9
San Bernardino Police Department*	CA	295,207	7.32	32	10.8
Chattanooga Police Department*	TN	169,187	11.94	31	18.3
Winston-Salem Police Department*	NC	232,529	7.4	28	12.0
Knoxville Police Department*	TN	180,488	13.52	28	15.5
St. Petersburg Police Department*	FL	248,105	8.3	26	10.5
Rialto Police Department*	CA	100,337	10.56	24	23.9
Clarksville Police Department*	TN	134,128	7.6	22	16.4
Jackson Police Department*	MS	174,170	28.71	22	12.6
Pasadena Police Department*	CA	138,734	4.61	21	15.1
Scottsdale Police Department*	AZ	220,462	2.63	18	8.2
Amarillo Police Department*	TX	194,708	6.78	17	8.7
North Las Vegas Police Department*	NV	218,790	8.56	16	7.3
Laredo Police Department*	TX	241,059	5.48	15	6.2
Ontario Police Department*	CA	165,851	4.82	15	9.0
Fort Lauderdale Police Department*	FL	167,777	9.66	15	8.9
Independence Police Department*	MO	117,255	5.8	14	11.9
Vallejo Police Department*	CA	117,305	13.13	14	11.9
Palmdale Station (Los Angeles County Sheriff's Department)*	CA	154,546	6.21	14	9.1
Lakewood Police Department*	CO	145,470	4.12	13	8.9
Rockford Police Department*	IL	153,331	15.78	13	8.5
Antioch Police Department*	CA	103,575	8.88	13	12.6
Lubbock Police Department*	TX	234,404	5.12	13	5.6

Agency	State	Population	Five-year homicide rate (per 100.000 population)	Firearms assaults against officers over five years (N)	Rate of firearms assaults against officers over five years (per 100,000 population)
Salt Lake City Police Department*	UT	190,038	8.21	13	6.8
Murfreesboro Police Department*	TN	109,736	4.19	13	11.8
Wichita Falls Police Department*	TX	106,753	5.43	13	12.2
Jersey City Department of Police*	NJ	248,423	9.5	13	5.2
City of Fontana Police Department*	CA	198,374	3.93	12	6.1
Flint Police Department*	MI	102,357	41.81	12	11.7
Topeka Police Department*	KS	128,283	9.51	11	8.6
Oxnard Police Department*	CA	200,225	5.39	11	5.5
Pompano Beach District Office (Broward Sheriff's Office)*	FL	101,206	7.9	10	9.9
City of Surprise Police Department*	AZ	119,181	1.34	10	8.4
Norwalk Station (Los Angeles County Sheriff's Department)*	CA	106,790	6.74	10	9.4
Lancaster Station (Los Angeles County Sheriff's Department)*	CA	158,474	6.18	10	6.3
Westminster Police Department*	CO	107,962	2.59	10	9.3
Shreveport Police Department*	LA	201,134	14.82	10	5.0
Glendale Police Department*	AZ	229,931	7.65	9	3.9
Palm Bay Police Department*	FL	104,596	4.21	9	8.6
Durham Police Department*	NC	231,225	8.91	9	3.9
Tacoma Police Department*	WA	201,510	7.05	9	4.5
Inglewood Police Department*	CA	110,962	16.58	9	8.1
Clearwater Police Department*	FL	109,153	9.16	9	8.3
Bridgeport Bureau of Police*	CT	144,496	12.46	8	5.5
Tallahassee Police Department*	FL	183,848	5.87	8	4.4
Brownsville Police Department*	TX	178,706	2.69	8	4.5
Chesapeake Police Department*	VA	224,864	5.51	8	3.6
Springfield Police Department	MA	153,993	13.38	7	4.6
Columbus Division of Police	OH	787,609	12.85	7	0.9
West Valley City Police Department	UT	131,979	4.09	7	5.3

Agency	State	Population	Five-year homicide rate (per 100.000 population)	Firearms assaults against officers over five years (N)	Rate of firearms assaults against officers over five years (per 100,000 population)
Hartford Police Department	CT	125,006	24.64	7	5.6
Rochester Police Department	NY	211,511	18.82	7	3.3
Odessa Police Department	TX	102,043	5.88	6	5.9

* Mean firearms assaults against officers over five years for all agencies in this population group: 7.2; standard deviation: 7.5. Agencies denoted with asterisks had firearms assaults (both absolute numbers and rates per 100k population) above the mean; numbers and rates more than one standard deviation above the mean are denoted with bold, blue italics within the gray section.

Table A5. Selected agencies serving counties with populations of 100,000 or more*

Agency	State	Number of firearms assaults against officers over five years (N)[†]
Los Angeles County Sheriff's Department	CA	*148*
Harris County Sheriff's Office	TX	*118*
Miami-Dade Police Department	FL	*101*
Prince George's County Police Department	MD	*83*
Riverside County Sheriff's Department	CA	*58*
St. Louis County Police Department	MO	*52*
Orange County Sheriff's Office	FL	*47*
Jefferson Parish Sheriff's Office	LA	*43*
Anne Arundel County Police Department	MD	*39*
Palm Beach County Sheriff's Office	FL	*37*
Baltimore County Police Department	MD	32
Escambia County Sheriff's Office	FL	30
Greenville County Sheriff's Office	SC	28
Lee County Sheriff's Office	FL	28
Hillsborough County Sheriff's Office	FL	28
New Castle County Police Department	DE	26
Knox County Sheriff's Office	TN	24
Bernalillo Sheriff Department	NM	23
Pasco County Sheriffs' Department	FL	22
Maricopa County Sheriffs' Department	AZ	21
Marion County Sheriffs' Department	FL	21
Polk County Sheriff's Office	FL	20
Hamilton County Sheriff's Office	TN	19
Brevard County Sheriff's Office	FL	19
Volusia County Sheriff's Department	FL	19
Fort Bend County Sheriff's Office	TX	19
Sacramento County Sheriff Department	CA	18
Sarasota County Sheriff's Office	FL	17
Pima County Sheriff's Department	AZ	16

Mean firearms assaults against officers over five years for all agencies in this population group: 13.45; standard deviation: 22.055. Numbers more than one standard deviation above the mean are denoted with bold, blue italics within the gray section.

* Because the county agencies were being compared to city agencies, the survey considered only agencies serving metropolitan (urban) counties rather than rural counties.

† Crime rates and firearms assault rates are not included or calculated for counties given their variability in population estimates and reporting practices

APPENDIX B. NATIONAL SURVEY ON THE USE OF DEADLY FORCE AND FIREARMS AGAINST POLICE OFFICERS

This appendix has been slightly modified to adhere to COPS Office publication standards. Its text has not been changed.

We are asking for your agency to participate in the Major City Chiefs Association's (MCCA) study on use of deadly force against the police. The MCCA has been emphasizing officer safety and wellness for the past several years, and recent concerns and increases in firearms-related deaths and injuries have raised national awareness about this growing threat to our law enforcement community. This project will increase our level of knowledge about how the characteristics of police agencies, and the communities in which they are located, influence the risks of officers being shot at, injured, or killed with firearms. Your responses will help us identify best practices that may reduce the use of deadly force and firearms against police officers in the future.

This project is being conducted by Dr. Joe Kuhns from the University of North Carolina at Charlotte on behalf of the Major City Chiefs Association. If you have any questions regarding this survey or the study, please call [phone number] or e-mail Dr. Kuhns at [e-mail address].

If you choose to participate in this project, all of your responses will be treated as confidential. Neither your individual names nor your agency name will be linked to your specific survey responses in the reports that are produced. We appreciate your contribution to this important project that is intended to help protect our nation's officers from harm.

How to respond to this survey

There are two ways to respond to this survey. We prefer that you complete the survey online at www.SurveyMonkey.com. This survey method reduces postal costs, increases participation, and promotes data collection accuracy.

If you prefer, we can also provide an electronic (paper) copy that you can print and return it to us by mail, fax, or e-mail. If you prefer an electronic copy of the survey, please contact [name].

Part 1. Police executive views on promoting officer safety and developing a culture of safety

Note: The following questions should be completed by the primary law enforcement executive (chief, sheriff, or commissioner).

What do you believe are the three most important steps that law enforcement leaders can take to reduce the risk of officers being shot at, injured, or killed by firearms?

1. _____

2. _____

3. _____

Compared with officers from other police agencies, officers in my agency are more mindful of their own safety when . . .

	SD	D	N	A	SA

1. pursuing a suspect on foot.

2. responding to domestic violence incidents.

3. responding to a burglary in progress.

4. responding to a firearms-related call.

5. dealing with emotionally disturbed persons.

6. serving arrest warrants on violent felons.

7. making routine traffic stops.

In your opinion, what steps can police leaders take to help reduce the number of fatalities, injuries, and near misses associated with *firearms-related ambushes* of police officers?

_____

_____

Part 2. Understanding departmental policies and practices

Note: The primary law enforcement executive should designate someone knowledgeable about departmental policies and practices to complete part 2.

Please indicate the job title of the person completing part 2: _____

Does your department require patrol officers to wear body armor *at all times* while on patrol?

Yes___   No___

Does your departmental budget (including external sources) cover the cost of body armor for all sworn officers?

___*Yes, all of the cost
___*Yes, some of the cost
___*No

Are officers in your department *required* to fill out a use of force report after engaging in the following actions? If your department does not authorize certain weapons (OC spray, Tasers) for patrol officers, please check "NA" for not applicable.

Handcuffing

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Using physical, hands-on force without a weapon to subdue a suspect (takedowns, joint manipulation, etc.)

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Soft-empty hands techniques (e.g., grabbing, firm grips, shoving)

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Pain compliance techniques (e.g., pressure point controls, joint manipulation)

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Hard-empty hand techniques (e.g., strikes, takedowns)

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Using oleoresin capsicum (OC) or other chemical spray

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Pointing a conducted energy device or TASER®

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Using a conducted energy device or TASER®— touch stun mode

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Using a conducted energy device or TASER®— dart/probe mode

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type of force

Using a baton or other personal impact weapon

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type
of force

Removing a firearm from a holster

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type
of force

Pointing a firearm at someone but not discharging

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type
of force

Discharging a firearm at someone without injury

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type
of force

Accidental discharge of a firearm

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type
of force

Releasing a K-9 officer (the animal specifically is
released)

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type
of force)

K-9 holds

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type
of force

K-9 bites

___Yes, every time
___Yes, but only if an injury or injury complaint occurs
___No
___NA—our agency does not authorize this type
of force

6. Does your agency currently have a *written* policy
    that instructs officers who are responding to the
    following high-risk situations/scenarios?

Foot pursuits of suspects

___Yes, we have a written policy
___No written policy at this time
___Written policy is under development

Domestic violence incident response

___Yes, we have a written policy
___No written policy at this time
___Written policy is under development

Burglary in progress response

___Yes, we have a written policy
___No written policy at this time
___Written policy is under development

Shots fired or firearm on scene response

___Yes, we have a written policy
___No written policy at this time
___Written policy is under development

Mentally ill / emotionally disturbed / suicidal suspect
response

___Yes, we have a written policy
___No written policy at this time
___Written policy is under development

Serving arrest warrants on violent offenders

___Yes, we have a written policy
___No written policy at this time
___Written policy is under development

Routine traffic stops

___Yes, we have a written policy
___No written policy at this time
___Written policy is under development

7. What is the most important change your agency
   has implemented in the past five years to improve
   officer safety with regard to firearms violence
   against the police?

_____
_____

The next set of questions focuses on six fairly
common situations/scenarios that place officers at
increased risk of deadly force (specifically firearms)
being used against them in the line of duty.

Foot pursuit policy/practice. To what extent do
you agree/disagree with the following statement(s)
regarding your current *foot pursuit policy or practice*
(if you do not have a written policy):

Officers have a lot of discretion in deciding when to
engage in foot pursuits

___SA   ___A
___D   ___SD

Officers are required to have a partner when engaged
in foot pursuits

___SA   ___A
___D   ___SD

Continuous radio contact is required during
foot pursuits or the pursuit must end

___SA   ___A
___D   ___SD

New recruits receive formal academy training on how
to safely pursue on foot

___SA   ___A
___D   ___SD

Only specific officers (e.g., vice, street unit) are
encouraged to pursue suspects on foot

___SA   ___A
___D   ___SD

What one policy or practice change would you
recommend to other police departments to help
them reduce the chances of officers getting shot or
shot at during foot pursuits?

_____
_____

Domestic violence response policy/practice. To
what extent do you agree/disagree with the following
statement(s) regarding your current *domestic violence
(DV) response policy or practice* (if you do not have a
written policy):

Officers have a lot of discretion in deciding how to
respond to domestic violence incidents.

___SA   ___A
___D   ___SD

Continuous radio contact is required when
responding to domestic violence incidents.

___SA   ___A
___D   ___SD

Officers working without a partner are allowed to
respond alone to domestic violence incidents.

___SA   ___A
___D   ___SD

Officers are required to wait for backup, if alone, before
entering a domestic violence incident in progress.

___SA   ___A
___D   ___SD

New recruits receive formal academy training on how
to respond to domestic violence incidents in progress.

___SA   ___A
___D   ___SD

Some designated officers (e.g., domestic violence
officers, second responders, etc.) receive enhanced
training on how to respond to domestic violence
incidents.

___SA   ___A
___D   ___SD

What one policy or practice change would you recommend to other police departments to help them reduce the chances of officers getting shot or shot at while responding to domestic violence incidents?

_____

_____

Burglary in progress response policy/practice. To what extent do you agree/disagree with the following statement(s) regarding your current *burglary in progress response policy or practice* (if you do not have a written policy):

Officers have a lot of discretion in deciding how to respond to burglaries in progress

___SA   ___A
___D   ___SD

Continuous radio contact is required when responding to burglaries in progress

___SA   ___A
___D   ___SD

Officers working without a partner are allowed to respond alone to burglaries in progress

___SA   ___A
___D   ___SD

Officers are required to wait for backup, if alone, before responding to burglaries in progress

___SA   ___A
___D   ___SD

New recruits receive formal academy training specifically on how to respond to burglaries in progress

___SA   ___A
___D   ___SD

What one policy or practice change would you recommend to other police departments to help them reduce the chances of officers getting shot or shot at when responding to burglaries in progress?

_____

_____

Shots fired or firearm on scene policy/practice. To what extent do you agree/disagree with the following statement(s) regarding your current *shots fired or firearm on scene policy or practice* (if you do not have a written policy):

Officers have a lot of discretion in deciding how to respond to shots fired or firearm on scene incidents in progress.

___SA   ___A
___D   ___SD

Continuous radio contact is required when responding to shots fired or firearm on scene incidents.

___SA   ___A
___D   ___SD

Officers working without a partner are allowed to respond alone to shots fired or firearm on scene incidents.

___SA   ___A
___D   ___SD

Officers are required to wait for backup, if alone, before responding to shots fired or firearm on scene incidents.

___SA   ___A
___D   ___SD

New recruits receive formal academy training specifically on how to respond to shots fired or firearm on scene incidents

___SA   ___A
___D   ___SD

Specific officers (e.g., vice, SWAT, supervisors) are the only ones who authorized to respond to shots fired or firearm on scene incidents.

___SA   ___A
___D   ___SD

What one policy or practice change would you recommend to other police departments to help them reduce the chances of officers getting shot or shot at when responding to shots fired or firearm on scene incidents?

_____

_____

Serving arrest warrants on violent offenders policy/practice. To what extent do you agree/disagree with the following statement(s) regarding your current policy or practice (if you do not have a written policy) for *serving arrest warrants on violent offenders*:

Officers have a lot of discretion in deciding how to serve arrest warrants on violent offenders.

___SA   ___A
___D   ___SD

Continuous radio contact is required when serving arrest warrants on violent offenders.

___SA   ___A
___D   ___SD

Officers working without a partner are allowed to serve arrest warrants on violent offenders.

___SA   ___A
___D   ___SD

Officers are required to wait for backup, if alone, before serving arrest warrants on violent offenders.

___SA   ___A
___D   ___SD

All recruits receive formal academy training specifically on how to serve arrest warrants on violent offenders.

___SA   ___A
___D   ___SD

Some designated officers (e.g., warrant, SWAT) receive enhanced training on how to serve arrest warrants on violent offenders.

___SA   ___A
___D   ___SD

What one policy or practice change would you recommend to other police departments to help them reduce the chances of officers getting shot or shot at while serving arrest warrants to violent offenders?

_____
_____

Handling mentally ill / emotionally disturbed suspects. To what extent do you agree/disagree with the following statement(s) regarding your current policy or practice (if you do not have a written policy) for handling *mentally ill / emotionally disturbed / suicidal suspects*:

Officers have a lot of discretion in deciding how to handle mentally ill / emotionally disturbed / suicidal suspects.

___SA   ___A
___D   ___SD

Continuous radio contact is required when handling mentally ill / emotionally disturbed / suicidal suspects

___SA   ___A
___D   ___SD

Officers working without a partner are allowed to handle mentally ill / emotionally disturbed / suicidal suspects

___SA   ___A
___D   ___SD

When handling mentally ill / emotionally disturbed / suicidal suspects, the policy/practice requires waiting for backup to arrive before responding to the scene

___SA   ___A
___D   ___SD

New recruits receive formal academy training specifically on how to handle mentally ill / emotionally disturbed / suicidal suspects

___SA   ___A
___D   ___SD

Specific designated officers (CIT, negotiators, etc.) receive enhanced training on how to respond to mentally ill / emotionally disturbed / suicidal suspects

___SA   ___A
___D   ___SD

What one policy or practice change would you recommend to other police departments to help them reduce the chances of officers getting shot or shot at while handling mentally ill / emotionally disturbed / suicidal suspects?

_____
_____

Part 3. Recruit and in-service/refresher training

The primary law enforcement executive (chief, sheriff, commissioner) should designate someone knowledgeable about recruit and in-service/refresher training to complete part 3.

Please indicate the job title of the person completing part 3: _____

How many hours of training on use of force do recruits receive in the training academy? _____

Does the agency's recruit academy training on officer's use of firearms involve training in the following methods?

Shooting while moving	Yes___	No___
Shooting at moving targets	Yes___	No___
Shoot-don't shoot training	Yes___	No___
Weak-hand shooting	Yes___	No___
Shooting at night or in low-light situations	Yes___	No___
Weapon malfunction drills	Yes___	No___
Shooting when physically fatigued	Yes___	No___
Shooting from a concealed location	Yes___	No___

Did your recent class of recruits receive training in the following areas?

a. Use of force continuum policy
   Yes___ No___

b. Officer safety practices
   Yes___ No___

c. Foot pursuit safety
   Yes___ No___

d. Serving arrest warrants
   Yes___ No___

e. Firearms training
   Yes___ No___

f. Use of less-lethal weapons
   Yes___ No___

g. Responding to domestic violence incidents
   Yes___ No___

h. Responding to disturbance calls
   Yes___ No___

i. Responding to "shots fired" calls
   Yes___ No___

j. Arrest and control tactics
   Yes___ No___

k. De-escalation and defusing techniques
   Yes___ No___

l. Dealing with citizens with mental illness
   Yes___ No___

Does your agency offer in-service/refresher training in the following areas?

a. Use of force continuum policy
   Yes___ No___

b. Officer safety practices
   Yes___ No___

c. Foot pursuit safety
   Yes___ No___

d. Serving arrest warrants
   Yes___ No___

e. Firearms training
   Yes___ No___

f. Use of less-lethal weapons
   Yes___ No___

g. Responding to domestic violence incidents
   Yes___ No___

h. Responding to disturbance calls
   Yes___ No___

i. Responding to "shots fired" calls
    Yes____ No____

j. Arrest and control tactics
    Yes____ No____

k. De-escalation and defusing techniques
    Yes____ No____

l. Dealing with citizens with mental illness
    Yes____ No____

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ABOUT THE BUREAU OF JUSTICE ASSISTANCE

The **Bureau of Justice Assistance (BJA)** is a component of the Office of Justice Programs, U.S. Department of Justice, which also includes the Bureau of Justice Statistics; National Institute of Justice; Office of Juvenile Justice and Delinquency Prevention; Office for Victims of Crime; and Office of Sex Offender Sentencing, Monitoring, Apprehending, Registering, and Tracking.

BJA's mission is to provide leadership and services in grant administration and criminal justice policy development to support local, state, and tribal justice strategies to achieve safer communities. BJA supports programs and initiatives in the areas of law enforcement, justice information sharing, countering terrorism, managing offenders, combating drug crime and abuse, adjudication, advancing tribal justice, crime prevention, protecting vulnerable populations, and capacity building. Driving BJA's work in the field are the following principles:

- Emphasize local control.
- Build relationships in the field.
- Provide training and technical assistance in support of efforts to prevent crime, drug abuse, and violence at the national, state, and local levels.
- Develop collaborations and partnerships.
- Promote capacity building through planning.
- Streamline the administration of grants.
- Increase training and technical assistance.
- Create accountability of projects.
- Encourage innovation.
- Communicate the value of justice efforts to decision makers at every level.

BJA has four primary components: (1) Policy, (2) Programs, (3) Planning, and (4) the Public Safety Officers' Benefits (PSOB) Office. The Policy Office provides national leadership in criminal justice policy, training, and technical assistance to further the administration of justice. It also acts as a liaison to national organizations that partner with BJA to set policy and help disseminate information on best and promising practices. The Programs Office coordinates and administers all state and local grant programs and acts as BJA's direct line of communication to states, territories, and Tribal Governments by providing assistance and coordinating resources. The Planning Office coordinates the planning, communications, and budget formulation and execution; provides overall BJA-wide coordination; and supports streamlining efforts.

ABOUT THE MAJOR CITIES CHIEFS ASSOCIATION

The **Major Cities Chiefs Association (MCCA)** is a professional association of chief police executives representing the largest cities in the United States, Canada, and the United Kingdom. MCCA membership is composed of chiefs and sheriffs of the 67 largest law enforcement agencies in the United States, the 10 largest in Canada, and the two largest in the United Kingdom. They serve 91.4 million people (70 million in the United States, 11.5 million in Canada, and 9.9 million in the United Kingdom) with a workforce of 241,257 (162,425 in the United States, 21,939 in Canada, and 56,893 in the United Kingdom) sworn officers and nonsworn personnel.

MCCA's strategic goals are to

- guide national and international policy that affects public safety and major cities;
- develop current and future police executive leaders;
- promote innovation and evidence-based practices in policing.

ABOUT THE COPS OFFICE

The **Office of Community Oriented Policing Services (COPS Office)** is the component of the U.S. Department of Justice responsible for advancing the practice of community policing by the nation's state, local, territorial, and tribal law enforcement agencies through information and grant resources.

Community policing begins with a commitment to building trust and mutual respect between police and communities. It supports public safety by encouraging all stakeholders to work together to address our nation's crime challenges. When police and communities collaborate, they more effectively address underlying issues, change negative behavioral patterns, and allocate resources.

Rather than simply responding to crime, community policing focuses on preventing it through strategic problem solving approaches based on collaboration. The COPS Office awards grants to hire community police and support the development and testing of innovative policing strategies. COPS Office funding also provides training and technical assistance to community members and local government leaders, as well as all levels of law enforcement.

Another source of COPS Office assistance is the Collaborative Reform Initiative for Technical Assistance (CRI-TA). Developed to advance community policing and ensure constitutional practices, CRI-TA is an independent, objective process for organizational transformation. It provides recommendations based on expert analysis of policies, practices, training, tactics, and accountability methods related to issues of concern.

Since 1994, the COPS Office has invested more than $14 billion to add community policing officers to the nation's streets, enhance crime fighting technology, support crime prevention initiatives, and provide training and technical assistance to help advance community policing.

- To date, the COPS Office has funded the hiring of approximately 127,000 additional officers by more than 13,000 of the nation's 18,000 law enforcement agencies in both small and large jurisdictions.
- Nearly 700,000 law enforcement personnel, community members, and government leaders have been trained through COPS Office-funded training organizations.
- To date, the COPS Office has distributed more than eight million topic-specific publications, training curricula, white papers, and resource CDs.
- The COPS Office also sponsors conferences, roundtables, and other forums focused on issues critical to law enforcement.

The COPS Office information resources, covering a wide range of community policing topics—from school and campus safety to gang violence—can be downloaded at www.cops.usdoj.gov. This website is also the grant application portal, providing access to online application forms.

NOTES

This publication attempts to answer important questions regarding firearm assaults against law enforcement officers. Initially prepared as a framework for discussion in the 2014 Officer Safety and Wellness (OSW) Group roundtable dedicated to identifying best practices for reducing firearm assaults and ambushes, this publication reviews the group's findings on law enforcement policies, procedures, training, and agency characteristics that can reduce officer deaths and injuries. It is divided into three sections: the meeting's findings and recommendations, a review of 50 years of literature written about situational factors that could lead to assaults, and data identified through a current study.