

# Weapons Reported On-Scene by Callers to Emergency Police Dispatch

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## ABSTRACT

**Introduction:** Providing information about possible weapons on scene is an essential objective of police dispatching and clearly valuable to officer safety. However, up to now, no information has been available about how often callers report weapons as “involved or mentioned” in an incident, what types of weapons are most commonly reported, or which incident types most commonly have reported weapons associated with them.

**Objective:** The primary objective of this study is to determine which types of weapons are reported most often and on which Police Priority Dispatch System (PPDS<sup>®</sup>) protocols they are reported. The secondary objective is to determine to what extent Emergency Police Dispatchers (EPDs) are recording weapons in the most appropriate descriptive categories.

**Methods:** This is a retrospective, descriptive study of PPDS data from five emergency communication centers in the United States of America, collected between September 2014 and April 2017.

**Result:** Of 201,653 emergency police dispatch calls handled by EPDs, a total of 8,687 (4.3%) recorded a “yes” answer to the question, “Were weapons involved or mentioned?” By far the most common incident type assigned was *Weapons/Firearms* (34.2%), followed by *Domestic Disturbance/Violence* (20.6%), and *Disturbance/Nuisance* (7.9%).

**Conclusions:** Overall, trained and certified EPDs are very effective at collecting weapon information and entering it correctly, providing officers with the information they need to remain as safe as possible in potentially violent encounters. Although weapons are not involved or mentioned in most cases handled by EPDs, those that do involve weapons are among the types most commonly associated with assaults on officers.

## INTRODUCTION

Weapons on scene represent one of the greatest threats to life safety for police officers responding to calls for help. In 2013, 49,851 officers were assaulted in the line of duty in the United States. Most of these assaults were conducted with hands, fists, or feet, but some included firearms and other weapons<sup>1</sup>. Despite being less common, assault with a weapon has the potential for far greater harm. Of the 135 reported line-of-duty deaths among U.S. police officers in 2016, 64 were caused by firearms. Only vehicles (whether used as weapons or involved in emergency vehicle collisions) are more dangerous.<sup>2</sup> Among all the fatal shootings of police officers, incidents reported as domestic disturbances and suspicious persons are most common. Shootings during attempted arrests are also among the most frequent fatal incidents for officers.<sup>2</sup>

Although officer fatalities, assaults on officers, and officer-involved shootings are all well documented in both the academic literature and the popular media,<sup>3-6</sup> little is known about the information provided at dispatch that might alert officers to, and help them prepare for, the presence of weapons on scene. IAED-certified Emergency Police Dispatchers (EPDs) using the Police Priority Dispatch System (PPDS<sup>®</sup>) are trained to gather information about weapons on scene using a scripted protocol. Specifically, the question “Were weapons involved or mentioned?” appears on 24 of the 36 PPDS protocols, covering a very wide variety of incident types. If the caller answers “yes” to this question, the EPD then gathers more information, usually, “What type?” and “Where are the weapons now?” Generally, this information is gathered and sent to responding officers prior to the assignment of the determinant code—the dispatch code that describes the specific incident type to which officers are responding, and which is used to determine the type and urgency of the response. This way, officers have both the information about the incident type and the information about reported weapons on scene before arriving at the incident.

Providing information about possible weapons on scene is clearly valuable to officer safety. However, no information has previously been available about how often callers report weapons as “involved or mentioned” in an incident, what types of weapons are most commonly reported, or which incident types most commonly have reported weapons associated with them. This study aims to provide a first assessment of those questions, offering a baseline understanding of the frequency and type of weapons reported on scene and the most common incident types for which weapons are reported.

Moreover, the PPDS is designed to provide responding officers with the most critical information—information related to officer and caller/bystander safety—as quickly and accurately as possible. This may occur via radio or through the transmission of EPD-gathered information to the Mobile Data Terminal (MDT, or onboard computer) in officers’ vehicles. Thus, in addition to identifying the most common weapon types reported by callers, this study will also evaluate the EPDs’ recording of caller-reported weapons in specific protocol-defined categories—that is, their recording of the weapon as a gun, knife, club, etc.. These categories determine, to some extent, what specific information is passed to officers, so recording each reported weapon in its correct category is critical.

## OBJECTIVE

The primary objective of this study was to determine which types of weapons are reported most often and on which PPDS Protocols they are reported. The secondary objective was to determine to what extent EPDs are assigning weapons to the most appropriate categories.

## METHODS

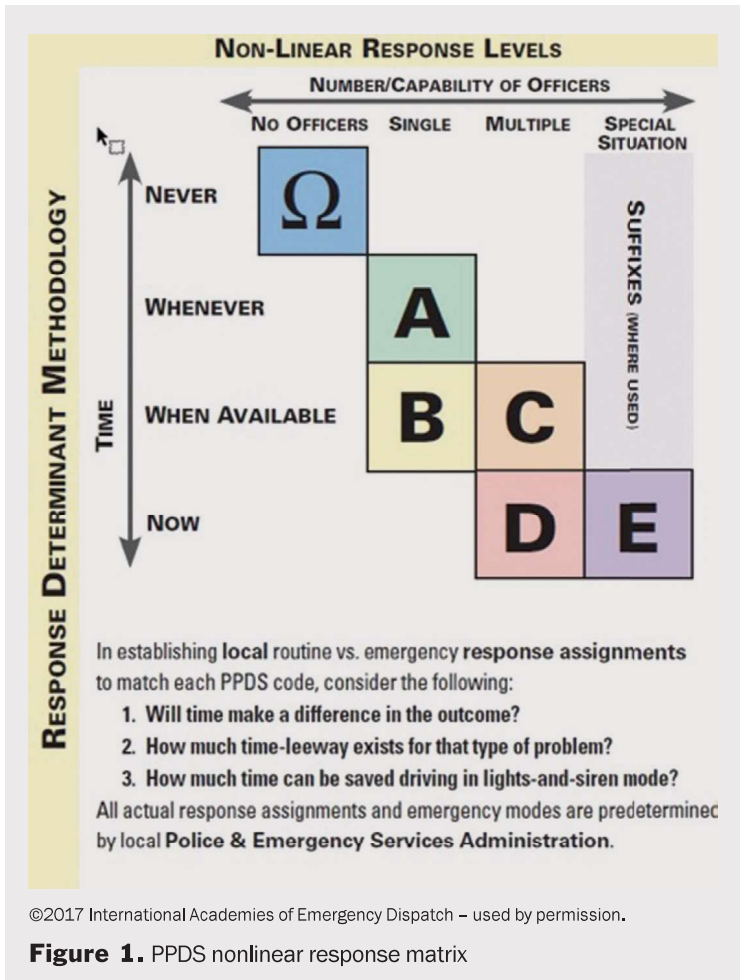
### Design and setting

This is a retrospective, descriptive study of PPDS data. Data were collected from five agencies, all of which are International Academies of Emergency Dispatch (IAED) Accredited Centers of Excellence (ACE), meaning that they maintain a very high level of compliance to PPDS protocols and a consistent quality assurance program: Salt Lake City 911 Communications Bureau, Salt Lake City, Utah, USA; Salt Lake Valley Emergency Communications Center, West Valley City, Utah, USA; Boone County, Missouri, USA; Alpharetta County, Georgia, USA; and Harford County, Maryland, USA.

### Population

A convenience sample was collected at five emergency communication centers in North America from September 25, 2014 to April 1, 2017, using the PPDS (PPDS version 5.0, ©2001–2017 Priority Dispatch Corp., Inc., Utah, USA). Data were collected using ProQA®, the software version and logic engine of the PPDS. ProQA uses internal logic, based on information gathered by EPDs, to assign calls to both priority levels and Determinant Descriptors (specific codes). The PPDS uses six priority levels, from ECHO (highest-priority

incidents) to OMEGA (lowest-priority). Agencies assign tiered or differentiated responses to calls for help based on priority level assignment and specific code, according to local policies but in line with recommendations from the IAED and corresponding with the PPDS Non-linear Response Matrix (Fig. 1). All actual response assignments and emergency modes are predetermined by local Police and Emergency Services Administrations.



**Figure 1.** PPDS nonlinear response matrix

### Weapon reported on scene

A weapon was considered to have been reported on scene if the caller answered “yes” to the question, “Were weapons involved or mentioned?” In addition, a weapon was considered to have been reported if the EPD used Protocol 135: *Weapons/Firearms* and then entered any response to the follow-up question, “What type of weapon was involved?” This additional report type was included because the logic of ProQA assumes a “yes” answer to the question, “Were weapons involved or mentioned?” in almost all calls handled on that protocol, meaning that no specific “yes” answer was recorded by the EPD for those calls.

### Reported weapon types

EPD selection of weapon type was assessed by comparing the EPD-assigned category (gun, knife, club, explosive, other, multiple, or unknown) with notes entered by the EPD in the “comments” section accompanying each weapon type

classification. For example, if an EPD assigned the weapon to the “gun” category and wrote “rifle” into the comments, that assignment was considered correct; however, if an EPD assigned the weapon to the “other” category (intended for weapons not captured in the named categories) and noted “rifle” in the comments, that assignment was considered incorrect.

### Data analysis

R-3.3.3 for Windows language and environment for statistical computing was used for data analysis.<sup>7</sup> Descriptive statistics such as frequency and percentages were used to present the distributions of reported weapons as recorded by the EPDs. The proportion of reported weapons incidents within each Chief Complaint Protocol, and out of the total for all reported weapons incidents, was presented, including categorization by dispatch priority levels. Another analysis also assessed the reported weapon types, as recorded by the EPD (uncorrected) and after correcting for single-category assignment (re-assigning weapons the EPD had originally recorded in the incorrect category or in more than one category).

## RESULTS

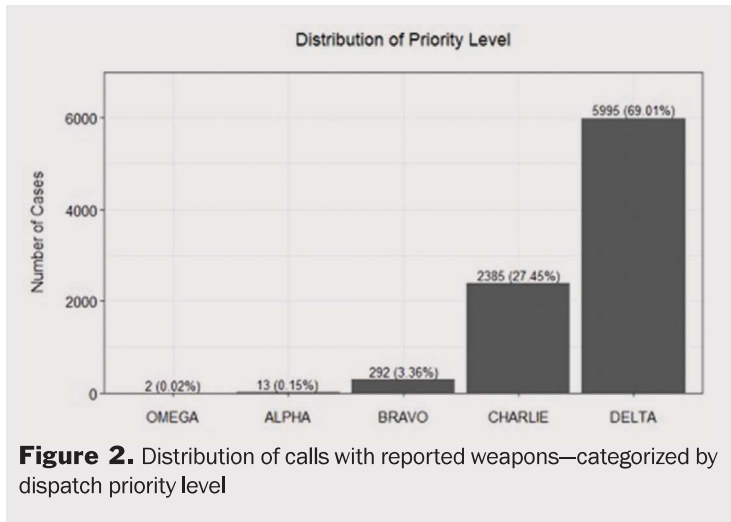
During the study period, a total of 201,653 emergency police dispatch calls were handled by the EPDs at the five dispatch agencies. Of these, 8,687 (4.3%) calls recorded a “yes” answer to the question, “Were weapons involved or mentioned?” (or the weapons-type follow-up question on the Weapons/Firearms Protocol). The most common incidents in which weapons were reported were on the *Weapons/Firearms* Protocol (34.2% of all weapons report calls), followed by *Domestic Disturbance/Violence* (20.6%), and *Disturbance/Nuisance* (7.9%) (Table 1). However, the Chief Complaint Protocols which had the highest percentage of calls in which a weapon was reported were *Weapons/Firearms* (97.9% of which involved a reported weapon), *Robbery/Carjacking* (45.3% involved weapons), *Domestic Disturbance/Violence* (17.5% involved weapons), and *Assault/Sexual Assault* (9.7% involved weapons).

The majority of the calls for which weapons were reported were handled by the EPDs on the DELTA priority level (69.0%), followed by the CHARLIE level (27.5%) (Fig. 2). Low-acuity (ALPHA- and OMEGA-level) calls made up less than 1% of all calls involving weapons reports.

Chief Complaint	All Cases N=201,653 (%)**	Reported weapons (N=8,687) n (%)	
		Per Chief Complaint*	Of weapons total
Weapons/Firearms	3,037 (1.3)	2,974 (97.9)	2,974 (34.2)
Domestic Disturbance/ Violence	10,193 (4.4)	1,787 (17.5)	1,787 (20.6)
Disturbance/Nuisance	19,492 (8.4)	688 (3.5)	688 (7.9)
Suspicious/Wanted	25,770 (11.1)	478 (1.9)	478 (5.5)
Harassment/Stalking/ Threat	7,321 (3.2)	471 (6.4)	471 (5.4)
Suicidal Person/At- tempted Suicide	2,887 (1.2)	454 (15.7)	454 (5.2)
Assault/Sexual Assault	3,983 (1.7)	385 (9.7)	385 (4.4)
Robbery/Carjacking	607 (0.26)	275 (45.3)	275 (3.2)
Theft	21,231 (9.2)	177 (0.83)	177 (2.0)
Damage/Vandalism/ Mischief	5,606 (2.4)	148 (2.6)	148 (1.7)
Trespassing/Unwanted	11,414 (4.9)	142 (1.2)	142 (1.6)
Burglary/Home Inva- sion	5,480 (2.4)	137 (2.5)	137 (1.6)
Public Service	10,729 (4.6)	135 (1.26)	135 (1.6)
Mental Disorder	1,945 (0.84)	130 (6.7)	130 (1.5)
Assist Other Agencies	1,646 (0.71)	83 (5.0)	83 (0.96)
Traffic Violation Complaint/Hazard	18,243 (7.9)	74 (0.41)	74 (0.85)
Drugs	3,102 (1.3)	57 (1.8)	57 (0.66)
Abduction/Custodial Abduction/Hostage Situation	367 (0.16)	26 (7.1)	26 (0.30)
Miscellaneous	3,056 (1.3)	20 (0.65)	20 (0.23)
Abuse/Abandonment/ Neglect	1,117 (0.48)	13 (1.2)	13 (0.15)
Animal	4,022 (1.7)	11 (0.27)	11 (0.13)
Missing/Runaway/ Found Person	3,439 (1.5)	7 (0.20)	7 (0.08)
Deceased Person	46 (0.02)	4 (8.7)	4 (0.05)
Administrative	7,839 (3.4)	4 (0.05)	4 (0.05)
Fraud/Deception	5,946 (2.6)	3 (0.05)	3 (0.03)
Traffic/Transportation Incident	20,558 (8.9)	1 (0.005)	1 (0.01)
Officer Needs Assistance	13 (0.01)	1 (7.7)	1 (0.01)
Indecency/Lewdness	713 (0.31)	1 (0.14)	1 (0.01)
Driving Under the Influence (Impaired Driving)	1,851 (0.80)	1 (0.05)	1 (0.01)

\*Proportion is respective to the Chief Complaint. \*\*Percentage out of total number of cases (330,060).

**Table 1.** Distribution of calls with reported weapons—categorized by Chief Complaint Protocol (Incident Type)



The most commonly-reported weapon type was gun (59.3%), followed by knife (20.5%) (Table 2). In almost every case (97.5%), the EPD assigned only one category to the weapon (“Single Category”); this includes assignment of the “multiple” category, in which case the different types of weapons will be listed under that one heading of “multiple” weapon types on scene. In a very few cases (2.5%), the EPD actually entered weapon information more than once, opening separate dialog boxes and entering different categories for the several weapons reported by the caller.

These incidents, reported as “Multiple Categories,” were cases in which the EPD opened the dialog box multiple times to input reported weapons separately. In some of these cases, the EPD separately entered multiple weapons of the same type (such as two separate guns), which could be reported under a single entry in that category. In other cases, the EPD entered multiple types of weapons as separate entries, rather than using the “multiple” option. A corrected distribution shows a slightly higher frequency of gun, knife, other, and club reports and a substantially higher frequency of the “multiple” weapon types category (Table 3).

Manual review of the comment fields also indicated that, in some cases, EPDs are entering weapons into incorrect single categories as well. For example, these include weapons reported under the “other” category with the comment “baseball bat” (which should be placed in the “club” category). However, lack of complete comment-field data makes it impossible to accurately assess the exact percentage of calls for which single weapons were placed into the wrong categories.

## DISCUSSION

EPDs play a critical role in helping to ensure officer, caller, and bystander safety by quickly collecting accurate information from callers and passing that information to responding officers. Information about weapons on scene is particularly important, when available. EPDs can only report what callers tell them—that is, they can only inform officers about a weapon if the caller tells them it is on scene—so officers and EPDs alike are trained to remember that the fact that no weapon was reported does not

Weapon Category	Weapons type as recorded by EPD	(N = 8,687) n (%)
Single Category 8,469 (97.5)	Gun	5,154 (59.3)
	Knife	1,782 (20.5)
	Other	885 (10.2)
	Club	389 (4.9)
	Unknown	280 (3.2)
	Multiple*	178 (2.1)
	Explosive	19 (0.22)
Multiple Categories 218 (2.5)	Gun, Gun <sup>‡</sup>	91 (1.1)
	Unknown, Gun <sup>‡</sup>	37 (0.43)
	Knife, Knife <sup>€</sup>	22 (0.25)
	Gun, Multiple*	8 (0.09)
	Other, Other <sup>£</sup>	7 (0.08)
	Unknown, Other <sup>‡</sup>	6 (0.07)
	Other, Club*	4 (0.04)
	Unknown, Knife <sup>‡</sup>	4 (0.04)
	Gun, Knife*	4 (0.04)
	Club, Club <sup>†</sup>	3 (0.03)
	Other, Knife*	3 (0.03)
	Knife, Multiple*	3 (0.03)
	Unknown, Club <sup>‡</sup>	3 (0.03)
	Unknown, Multiple <sup>‡</sup>	3 (0.03)
	Knife, Gun*	2 (0.02)
	Knife, Club*	2 (0.02)
	Knife, Other*	2 (0.02)
	Knife, Other, Knife*	1 (0.01)
	Club, Other*	1 (0.01)
	Club, Other, Knife*	1 (0.01)
	Gun, Club*	1 (0.01)
	Gun, Multiple, Multiple*	1 (0.01)
	Gun, Unknown, Multiple*	1 (0.01)
	Multiple, Club*	1 (0.01)
	Other, Gun*	1 (0.01)
	Other, Multiple*	1 (0.01)
	Other, Gun, Other*	1 (0.01)
	Unknown, Unknown <sup>ψ</sup>	1 (0.01)
	Gun, Unknown <sup>‡</sup>	1 (0.01)
	Gun, Other*	1 (0.01)
	Unknown, Gun, Gun <sup>‡</sup>	1 (0.01)

\*Considered “Multiple”. <sup>‡</sup> Considered “Gun”. <sup>€</sup> Considered “Knife”. <sup>£</sup> Considered “Other”. <sup>†</sup> Considered “Club”. <sup>ψ</sup> Considered as “Unknown”. <sup>‡</sup> Weapon categories where the dispatcher selected “Unknown” in conjunction with a different category is considered as the respective category.

**Table 2.** Distribution of weapon types as recorded by EPDs (uncorrected)



Weapon type	(N = 8,687) n (%)
Gun	5,154 (59.3)
Knife	1,782 (20.5)
Other	885 (10.2)
Club	389 (4.5)
Unknown	280 (3.2)
Multiple	178 (2.1)
Explosive	19 (0.22)

**Table 3.** Distribution of weapon types as recorded by EPDs (corrected for single-category assignment)

mean that there are no weapons on the scene. However, enough callers do report weapons, especially guns, that collecting and passing that critical information to responding officers is well worth the very little time it takes to ask the question. Moreover, the PPDS prompts EPDs to ask about and record weapon information, so gathering of this vital information for police officers is not left to the chance of a caller reporting it or not.

This study found that guns and knives are the most commonly-reported weapons and that they are most common on calls identified at dispatch as *Weapons/Firearms*, *Domestic Disturbance/Violence*, and *Disturbance/Nuisance*. Interestingly, these findings tally closely with the findings of the National Police Officers Memorial Fund, which identified “domestic” issues and “suspicious persons” as the two most common circumstances associated with fatal officer shootings.<sup>2</sup> However, the Chief Complaint Protocols which had the highest likelihood of including a reported weapon, in addition to *Weapons/Firearms*, were *Robbery/Carjacking* and *Domestic Disturbance/Violence*. Thus, the incident types with the highest number of reported weapons (in part because of the high numbers of these cases overall) and the incident types with the highest percentage of weapon reports were similar but not identical. This is an expected finding given that, for example, robberies and carjackings are less common than domestic disturbance incidents but are very likely to involve a weapon when they do occur.

Some have suggested that EPDs may be oversensitive to reports of weapons. For example, it has been suggested that if a caller reports that the suspect is in the kitchen, then the EPD will record that weapons were present because, technically, most kitchens contain knives—which is not the intent of the PPDS in asking about weapons involved in an incident. Overall, however, the percentage of calls on which weapons were involved or mentioned was low, most were guns, and the comment text indicated that the caller had indicated a specific threat or the use of a weapon. Also, the incident types for which weapons were recorded by EPDs were closely correlated with reported information about assaults on officers. Although not conclusive, this strongly suggests that EPDs are eliciting and recording weapon information only for those calls in which the weapon is perceived as immediately involved in the incident, which

is correct use of the PPDS as designed. Through standardized training, EPDs are taught to include a weapon(s) in final coding of the event only if callers state, verify, or respond that weapons were involved or mentioned.

Also, in this study, weapons were much more commonly reported on calls dispatched on the DELTA-priority level. This is an expected finding because in the PPDS, the DELTA level is reserved almost exclusively for in-progress or just occurred events—generally those in which a suspect or group of involved persons is still present at, or has just fled, the scene. This also indicates that EPDs are appropriately recording weapons most often for incidents in which those weapons may directly threaten bystanders, callers, or officers. Conversely, less than 1% of calls with reported weapons were assigned to the ALPHA- or OMEGA-priority levels, indicating that incidents identified as low-severity or low-urgency by EPDs are, in fact, lower in their likely immediate threat level. Interestingly, these results were very uniform across the studied agencies despite differences in sample sizes, suggesting that scripted protocol use does indeed standardize information gathering and reporting.

More specific to the PPDS is the assignment of reported weapons into protocol-defined categories. These categories are not designed solely for the purpose of definition or data collection; rather, the category itself is intended as a simple, readily-identified piece of information that can be immediately relayed by a dispatcher or passed to the Mobile Data Terminal (MDT) and read quickly by responding officers. Therefore, although assigning a gun to the “club” category or a baseball bat to the “other” category may seem minor, it can make a significant difference to responding officers, depending on how information is passed over by their Computer-Aided Dispatch (CAD) system and/or presented by their MDT. Further clarifying information may be available in the comments or notes recorded by the EPDs, but the simple category descriptor (gun, knife, explosive, etc.) is the best and fastest way for the officer to identify the potential threat on the scene. The more emergent and time-critical the situation, the more this type of easily identifiable information is of value.

In general, EPDs are very effective and accurate in their assignment of weapons to the correct categories. In almost every single case, the best and fastest way to get information to officers is by selecting just one weapon category and entering all the information about weapons on scene into that category. The addition of the “multiple” category in version 4.1a, and all subsequent versions of the PPDS, was designed to cover those incidents in which more than one type of weapon is involved, allowing EPDs to enter multiple-weapon information more quickly, without opening a new Description Essentials dialog box for each additional weapon. EPDs correctly used only one category assignment nearly 98% of the time, which shows very strong compliance to expectations. In the other 2% of calls, EPDs did open multiple boxes and assign more than one separate category. A more effective and faster approach, in line with PPDS standards, would be to assign a single-type category (such as “gun”) to events in which more than one weapon of the same type is present (two guns, two knives, etc.), then use the comments box

to write in more information about the number of weapons on scene. Similarly, using the “multiple” category to report multiple weapons of different types saves time and gathers all weapon details into one unit of information to send to officers.

Keeping in mind the limited space on many MDT screens, EPDs should remember that sending multiple separate weapon information updates can mean that previously-entered information is pushed off the screen; using the “multiple” type, or entering multiples of the same type in one dialog box, can reduce that problem. In some rare cases, it might make sense for EPDs to enter some weapon information, continue with the call, and then add more weapon information later via use of the Urgent Message box on the top tool bar in ProQA—for example, if the caller suddenly reports an additional weapon later in the call. Using the Urgent Message box ensures that an urgent or critical message (i.e., that a weapon is now involved in the incident) is sent immediately, goes to the top of the MDT scroll, and is indicated by the symbols and words: **\*\*Urgent Message\*\***. However, in most cases, time and space are at a premium and can be best used by assigning weapons to a single category and using the “multiple” category when appropriate.

In some cases, the information entered into the comments field associated with the weapon-type selection did not match the selected category. For example, in some cases EPDs entered “gun” as comment text in the “unknown” category. The most common mismatch between category and comment text was in the “other” category, which some EPDs appear to use as a catch-all, with many assigning club-type weapons (e.g., baseball bats) to this category in particular. In other cases, the EPDs used the comment-text field as a place to enter large amounts of information not related to weapons at all, such as locations of best entrances to the location of the incident, additional information about suspects or witnesses, or long descriptions of additional information relating to the incident itself. Although this was rare—as was assigning a single weapon to an incorrect category—it is important because officers expect to see incident information presented in a particular order and format. Providing unrelated information in the weapons description comment text could cause it to be overlooked. In addition, information about weapons is not sent until the dialog box is closed, meaning that entering long strings of unrelated information in the box may delay the sending of the most critical information: the type of weapon on scene.

Some potential changes to the PPDS questioning sequence may be suggested by the findings of this study. For example, recommendations have been made in the past to remove the question, “Were weapons involved or mentioned?” from some of the PPDS Chief Complaint Protocols because weapons are so rarely present in these types of calls. This study found that the *Indecency/Lewdness*, *Driving Under the Influence (Impaired Driving)*, *Fraud/Deception*, and *Administrative* Protocols, although used relatively often, had weapons reported on less than 1% of these calls. (This was also true of *Traffic/Transportation* Incident Protocol, but it does not actually include the weapons question; rather, in the one incident for which a weapon was recorded, the EPD independently opened the Description Essentials Tool to record a reported weapon.) For some of these incident types, only one weapon

was recorded during the entire study period; all had fewer than five reported. Such low numbers may justify the removal of the weapons question and sub-questions from these Chief Complaint Protocols to save time in the vast majority of calls in which no weapons are involved. Volunteered weapons information could still be recorded, either by opening the Description Essentials Tool when needed or by including an “operator question,” a question that is shown on screen as a prompt (with a location for entering an answer), but which the EPD does not actually ask the caller. Future analysis will review on-scene outcomes for incident types with low weapons frequency to determine the true level of risk involved in removing the weapons question for these call types.

Perhaps the most important finding of this study is that the use of unified, standardized EPD protocols can drive cross-agency data analysis and comparison of a type not previously possible. Previously, jurisdictional differences and local policies for information gathering and recording made such comparisons impossible. Moreover, continuous improvement requires measurement; standardized protocols not only ensure uniform quality of information gathering, but allow for improvement and evolution of the protocols themselves over time. By comparison, just entering free text in comment fields in CAD systems does not allow for data retrieval or detailed study. Finally, the ability to evaluate the use of the PPDS across jurisdictions can help ensure that essential policing objectives are met by the EPDs who serve as the *first*, first responders.

## Limitations

The available sample for this study from each respective agency was relatively small, and the use of a convenience sample may affect the generalizability of the results. In addition, one agency made up 59% of the sample because of its larger call volume, which could have skewed the findings. However, the distribution of weapons reported were homogeneous for each agency across all chief complaints, regardless of their respective study period or sample size. Also, different agencies using the PPDS may employ different local policies, including having different CADs and sending different information streams to MDTs. In some cases, agencies may decide that certain incident types (particularly those that are purely administrative or do not require a responding officer) will not be handled using the PPDS, so the overall number of cases in this study may not reflect the total number of cases handled by these agencies during the study period—only those handled using the PPDS.

## CONCLUSION

Overall, trained and certified EPDs are effective at collecting information about weapons reported or mentioned as being on-scene and entering it correctly, providing officers with the information they need to remain as safe as possible in potentially violent encounters. Although weapons are not involved or mentioned in most cases handled by EPDs, those that do involve weapons are among the types most commonly associated with assaults on officers. Therefore, the collection—and quick relay—of this information is of paramount

importance. Future studies will assess officers' on-scene reports to determine how often weapons reported by callers are actually found, confiscated, or used when officers arrive, as well as whether any apprehensions result. Such an analysis would help identify those call types for which gathering weapon information is most important and whether EPD-gathered weapons information is correlated with increased safety and/or apprehensions and arrests. This study also demonstrated very clearly that the use of unified, standardized EPD protocols provides the type and amount of data needed to determine the answers to these essential policing questions.

## REFERENCES

1. US Federal Bureau of Investigation (FBI), FBI National Press Office (2014). FBI Releases 2013 Statistics on Law Enforcement Officers Killed and Assaulted. Available: <https://www.fbi.gov/news/pressrel/press-releases/fbi-releases-2013-statistics-on-law-enforcement-officers-killed-and-assaulted>. Accessed 06/14/ 2017.
2. National Police Officers Memorial Fund (2017). Preliminary 2016 Police Officer Fatalities Report. <http://www.LawMemorial.org/FatalitiesReport>. Accessed 09/25/2017.
3. Chenpanas P, Bir C. Fatal injuries of police/correctional officers attacked with sharp-edged weapons. *J Forensic Sci.* 2017;62(3):700-704.
4. Blair JM, Fowler KA, Betz CJ, Baumgardner JL. Occupational homicides of police officers, 2003-2013: data from the National Violent Death Reporting System. *Am J Prev Med.* 2016;51(5S3):S188-S196.
5. DeGue S, Fowler KA, Calkins C. Deaths due to use of lethal force by police: findings from the National Violent Death Reporting System, 17 U.S. states, 2009-2012. *Am J Prev Med.* 2016;51(5S3):S173-S187.
6. Kutner M. Police killed on the job: number spikes in 2017, as New York mourns murdered officer. *Newsweek*. Online. July 13, 2017. Available: <http://www.newsweek.com/police-line-duty-deaths-increase-2017-636064>. Accessed 9/26/2017.
7. R Core Team. (2017). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>. Accessed 09/26/2017.