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## To bite or not to bite: Canine apprehensions in a large, suburban police department

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### Abstract

There is a dearth of empirical research on the use of police canines. This article examines the use of canines in a large, suburban police department over a six-year period (1993–1998). Use of force reports, canine-apprehension reports, arrest data, and the canine unit's monthly activity reports were reviewed. Five rates were calculated: (1) canine-apprehension rate, (2) canine bite rate, (3) rate of bites resulting in any medical treatment, (4) rate of bites resulting in medical treatment at a hospital, and (5) officer injury rate. Of the suspects apprehended by canines, 14.1 percent were bitten, 9.1 percent received medical attention (on the scene or at a hospital), and 4.8 percent received medical attention at a hospital. The canine bite rate was significantly lower for non-White suspects than for White suspects. The use of rate-based information for the evaluation of policy and procedure concerning the use of police canines is discussed.

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### Introduction

The use of canines in law enforcement has been recorded as early as the 1620s, when English soldiers used hounds to locate highwaymen (Zwickey, 1988). The use of hounds to track escaped slaves is vividly described in *Uncle Tom's Cabin* (Stowe, 1851/1962). In the United States, the first police canine program was implemented in New York City in 1907 (International Association of Chiefs of Police, 1992). Although canine units are now an integral part of police agencies, there has been little research on the actual use of canines in police work. Most published literature about police canines concerns the training of dogs and handlers (see, e.g., International Association of Chiefs of Police, 1992; Smith, 1991; Strandberg, 1997; Warrell, 1999).

This research examined the use of police canines to apprehend suspects in a large, suburban, county police department during a six-year period (1993–1998). Use of force reports, canine-apprehension reports, arrest data, and the canine unit's monthly activity reports were examined. Five rates were calculated. The first is the apprehension rate, defined as the number of apprehensions by canine per one hundred canine deployments. The second is the canine bite rate, defined as the number of suspects bitten per one hundred apprehensions. The third is the medical treatment rate, defined as the number of suspects bitten who received any medical treatment (from first aid on the scene to treatment at a hospital) per one hundred apprehensions. The fourth is the hospital treatment rate, defined as the number of suspects bitten who received treatment at a hospital per one hundred apprehensions. The fifth is the officer injury rate, defined as the number of officers injured per one hundred apprehensions.

Knowledge of the rate information described above can aid police managers in assessing program

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effectiveness and the impact of program or procedural changes. For example, it might be expected that an innovation that resulted in a decrease in response time (e.g., an increase in the number of canines available or more efficient deployment procedures) would, in turn, result in an increase in canine apprehensions for “tracks” (the deployment of a canine to search for an escaping suspect). Information on the apprehension rate for “tracks” before and after the innovation would allow a police manager to assess the cost-effectiveness of the innovation. Or, the appropriate length of the lead on which the canine is held might be an issue under consideration. A shorter lead provides more control of the canine, but limits the canine’s range. Thus, a shorter lead may decrease the bite rate, but it may also decrease the apprehension rate and increase the officer injury rate. Knowledge of the before and after bite rate, apprehension rate, and officer injury rate could be used to assess the impact of any change in the length of lead on which the canine is held.

Readily available information on the bite rate, medical treatment rate, and hospitalization rate also may be useful to a police manager faced with responding to an unfortunate, “high-profile” incident in which a suspect is inappropriately bitten. For example, the ability to put an unfortunate incident in perspective by demonstrating that it is an aberration, and not part of routine agency practice, may be extremely helpful to a police manager responding to inquiries from the press or community groups.<sup>1</sup>

## Literature review

Previous literature focused primarily on the importance of training canines and the techniques for training them (see, e.g., *International Association of Chiefs of Police*, 1992; Smith, 1991; Strandberg, 1997; Warrell, 1999). For example, this literature stressed that canines should be kept on a lead when tracking suspects to maintain control and reduce bites, and that canines should not be used for routine calls or crowd control (*International Association of Chiefs of Police*, 1992; Warrell, 1999). In contrast, there was a dearth of studies of the actual use of police canines. Campbell, Berk, and Fyfe (1998, p. 535) stated that they had found “no empirical work on the role of police dogs in either the apprehension of suspects or as a method of delivering force.” This review found no additional studies.<sup>2</sup>

Campbell et al. (1998) examined the use of canines by the Los Angeles Police Department and the Los Angeles County Sheriff’s Department. During the period studied, both departments used a “bite and hold” (also called a “find and bite”)

technique. With this technique, the canine is trained to find, bite, and hold the suspect for the handler. If discovered, the suspect can expect to be bitten unless he or she promptly communicates a desire to surrender to the handler and the handler is able to call off the canine before it bites the suspect. They found that between June 1990 and July 1992 Los Angeles Police Department canines apprehended 539 suspects. Of the suspects apprehended, 239 were bitten—a bite rate of 44 percent. Similarly, they found that between January 1989 and December 1991 Los Angeles County Sheriff’s Department canines apprehended 335 suspects. Of the suspects apprehended, 119 were bitten—a bite rate of 36 percent. They noted that although nothing in the analysis suggested that Black suspects were singled out by police for more severe treatment, both agencies deployed canines more frequently in minority neighborhoods than in comparatively higher-crime, White neighborhoods. The net effect was that a higher proportion of minority suspects than White suspects sustained canine bites.

Before the 1990s, canines in most police agencies were trained to react to suspects by the bite and hold technique (Strandberg, 1997). In the 1990s, as a result of litigation and liability issues, some police agencies shifted to what is called the “bark and hold” technique (Strandberg, 1997). With this technique, the canine is trained to bark to alert the handler to the suspect and to bite only if the suspect acts aggressively or attempts to run, or if commanded by the handler to bite the suspect.

## Research setting

This research examined the use of force by Montgomery County, Maryland Police Department canines during the six-year period, 1993–1998. The Montgomery County Police Department is a large, suburban police department on the outskirts of Washington, D.C. Its sworn personnel rose from 872 to 1,111 during the study period. As of 1998, 80.4 percent of the sworn personnel were Caucasian, 15.0 percent were African-American, 2.6 percent were Hispanic, 1.6 percent were Asian, and 0.4 percent were Native American. Of these officers, 81.2 percent were male and 18.8 percent were female.

As reported by the *Montgomery County Park and Planning Commission* (1997, pp. 92–100), the population of Montgomery County in 1997 was 77.0 percent Caucasian, 12.3 percent African-American, 6.1 percent Hispanic, and 4.6 percent Asian or Pacific Islander. The median household income for county residents was \$66,068 (\$70,515 for Caucasians,

\$50,325 for African-Americans, \$47,310 for Hispanics, and \$65,630 for Asian or Pacific Islanders). Homeowners accounted for 71.2 percent of the households (ranging from 67.9 percent for Caucasians to 43.2 percent for African-Americans).

### **The Montgomery County police canine unit**

Montgomery County Police Department canines were assigned to a specialized unit. During the study period, the canine unit had from twelve to thirteen police officers. As of 1998, there were twelve White officers and one African-American officer. Ten canine officers were male and three were female. The canine unit covered the entire county, with a minimum of two canine teams working seven days a week between 10:00 p.m. and 6:00 a.m. Canine officers turned over all apprehended suspects to patrol or investigative units for processing and placement of charges.

There had been a strong emphasis on training. During the study period (1993–1998), the canine unit participated in 30,856 hours of training (an average of about 430 hours per canine handler per year).

The canine unit has used a variation of the bark and hold technique since before 1993. The technique is referred to as the “warn and release” technique. It is similar to the bark and hold technique, but has the added requirement that the handler announce that he or she is a Montgomery County Canine Police Officer and that he or she will be deploying a canine if the suspect does not surrender. The officer then must wait one minute, announce that the canine is being released, and release the canine. Once the canine is commanded to apprehend a suspect, it is the duty of the officer to call off the canine as soon as possible to minimize injury to the suspect. In the case of a canine bite, the officer is required to secure medical treatment for the suspect and photograph the canine bite.

### **Data sources**

Five data sources were used for this study. The first data source was a computerized file containing the police department’s use of force reports. Montgomery County police officers are required by departmental directive to complete a use of force report for each use of force incident in which they are involved. This form includes the date and time of the incident, type of call, type of the force used, and nature of any injury to suspect and/or officer. The form is a “duress form,” which means that no

adverse administrative action can be initiated against an officer using the information contained therein. At the same time, the failure to complete the report or the intentional misreporting of information can lead to disciplinary action that may include reduction in rank or termination. The officer’s immediate supervisor is responsible for ensuring that the use of force report is completed and must review and comment on the officer’s actions. These procedures, taken together, appear to ensure that use of force reports are completed consistently and lessen the incentive for an officer to report inaccurate information.<sup>3</sup> There were 2,092 use of force reports during the study period, including 202 that involved a canine bite or other use of force during a canine-assisted apprehension.

The second data source was a noncomputerized file containing canine-apprehension reports.<sup>4</sup> A canine-apprehension report is filled out each time a canine-assisted apprehension—defined as an apprehension in which the canine located or detained the suspect—is made. The report provides the date and time of apprehension, method of apprehension, and type of crime, as well as officer and suspect information.

The third data source was a noncomputerized file containing the canine unit’s monthly activity reports. These reports contain information on canine unit activities by month (e.g., number of deployments by type, number of canine-assisted apprehensions, number of canine-assisted apprehensions by type of offense) taken from the canine-apprehension reports, as well as information on training activity.

The fourth data source was the computerized file of all arrest reports made by county police officers regarding arrests by statement of charges.<sup>5</sup> The arrest report contains information about the suspect (e.g., name, sex, date of birth, race), the nature of the charge, date of arrest, time of the arrest, location of arrest, and arresting officer. During the study period, there were 25,071 arrests by statement of charges.

The fifth data source was a computerized file generated by the police department’s data management personnel. This file included each officer’s identification number,<sup>6</sup> sex, race, date hired, date retired/terminated, and age at date of hire. This information was used as a check against the officers’ information recorded on the use of force reports.

In addition, the police department’s special operating procedures for the canine unit ([Montgomery County Department of Police, 2000](#)) were reviewed. These procedures provided the canine unit with guidelines for the use of canines and set out the specific duties and responsibilities of canine officers (e.g., primary functions, staffing, deployment criteria, and training requirements).

## Findings

During 1993–1998, the canine unit responded to 28,430 incidents. Of these, 15,031 (52.9 percent) resulted in the deployment of a canine. For the purposes of this study, canine deployments were grouped into three categories: (1) tracks, (2) building searches, and (3) other canine deployments (including narcotic searches, article searches, bomb searches, and warrant executions).

Table 1 displays canine deployments per year for each type of deployment. During the study period, canines were deployed 15,031 times (an average of 2,505 times per year). There were 4,367 tracks (an average of 728 per year), 6,197 building searches (an average of 1,033 per year), and 4,458 other canine deployments (an average of 743 per year).

There were a total of 1,179 canine-assisted apprehensions during the study period (an average of 196.5 per year). The canine-assisted apprehension rate, defined as the number of canine-assisted apprehensions per one hundred canine deployments, for all categories of canine deployment was 7.8 for the study period, varying per year from 6.9 to 9.2.

During the study period, canine tracks resulted in approximately 568 apprehensions; building searches resulted in approximately 345 apprehensions, and other canine deployments resulted in approximately 266 apprehensions.<sup>7</sup> Use of these estimates in conjunction with the number of deployments of each type provided an apprehension rate of 13.0 (per one hundred deployments) for tracks, 6.5 (per one hundred deployments) for building searches, and 5.9 (per one hundred deployments) for other canine deployments. The higher apprehension rate for tracks was expected. With a track, it is known that there is an escaping suspect (e.g., a suspect who has abandoned

Table 2

Canine bite rate

	Year						Total
	1993	1994	1995	1996	1997	1998	
Canine-assisted apprehensions	173	200	248	173	202	183	1,179
Number of suspects bitten	30	29	38	16	28	25	166
Bite rate (per one hundred apprehensions)	17.3	14.5	15.3	9.2	13.9	13.7	14.1

a stolen automobile and fled in a wooded area). With a building search or other deployment there may, in fact, be no suspect to apprehend (e.g., a building may be searched in response to a signal from a burglar alarm that has been activated by something other than a burglar). That is, the maximum possible apprehension rate for tracks is one hundred (per one hundred tracks). The maximum possible apprehension rate for other types of deployments is a lower, unknown number.<sup>8</sup>

Of the 1,179 canine-assisted apprehensions during the study period, 227 (19.3 percent) were for motor vehicle theft, 188 (15.9 percent) were for commercial burglary, 163 (13.8 percent) were for residential burglary, 128 (10.9 percent) were for theft/larceny, 89 (7.5 percent) were for narcotics violations, 74 (6.3 percent) were for robbery, 9 (0.8 percent) were for rape, and 301 (25.5 percent) were for other offenses.

Table 2 shows the number of canine-assisted apprehensions, the number of suspects bitten, and the canine bite rate. The canine bite rate is defined as the number of suspects bitten per one hundred apprehensions. The total number of suspects bitten

Table 1

Canine unit workload (1993–1998)

	Year						Total
	1993	1994	1995	1996	1997	1998	
Total canine deployments	2,510	2,485	2,686	2,455	2,441	2,454	15,031
Canine building searches	1,186	1,062	1,113	1,034	882	920	6,197
Canine tracks	679	685	762	717	779	745	4,367
Other canine deployments <sup>a</sup>	636	738	811	704	780	789	4,458
Other deployments <sup>b</sup>	2,249	2,339	2,469	1,960	2,154	2,228	13,399
Total deployments	4,759	4,824	5,155	4,415	4,595	4,682	28,430
Percent canine deployments	52.7	51.5	52.1	55.6	53.1	52.4	52.9
Training hours	4,143	4,046	4,969	4,490	8,051	5,157	30,856
Canine-assisted apprehensions	173	200	248	173	202	183	1,179

<sup>a</sup> Other canine deployments include narcotic searches ( $N=2,140$ ), article searches ( $N=845$ ), surveillance ( $N=591$ ), bomb searches ( $N=314$ ), and warrant service ( $N=153$ ).

<sup>b</sup> Other deployments include calls in which a canine was not involved (e.g., traffic enforcement), as well as calls for use of a canine in which the canine was not actually deployed.

Table 3  
Canine use and bite rate by race of suspect

Race of suspect	All apprehensions	Canine-assisted apprehensions		Suspects bitten	
		Number	Percent of all apprehensions	Number	Bite rate
Non-White	16,580	684	4.1	84	12.3
White	8,491	495	5.8	82	16.2
Total	25,071	1,179	4.7	166	14.1

was 166 during the study period (an average of 27.7 suspects bitten per year). The canine bite rate was 14.1 per one hundred apprehensions for the study period, varying per year from 9.2 to 17.3.

Of the 166 suspects bitten by canines during the study period, 59 (35.5 percent) refused treatment, 50 (30.1 percent) received first-aid treatment at the scene only (by an officer or by fire rescue personnel), and 57 (34.3 percent) received medical attention at a hospital (generally, emergency room treatment). Thus, the overall bite rate of 14.1 (per one hundred apprehensions) may be contrasted with a medical treatment rate of 9.1 (per one hundred apprehensions) and a hospital treatment rate of 4.8 (per one hundred apprehensions).

Table 3 shows all apprehensions, canine apprehensions, and the canine bite rate by the race of the suspect. Overall, 4.7 percent of apprehensions during the study period were canine-assisted apprehensions. Canines assisted in 5.8 percent of the apprehensions of White suspects and 4.1 percent of the apprehensions of non-White suspects ( $\chi^2=36.4$ ,  $P<.001$ ). The bite rate for White suspects was 16.2 (per one hundred apprehensions)<sup>9</sup> and the bite rate for non-White suspects was 12.3 (per one hundred apprehensions).<sup>10</sup> That is, White suspects were 1.3 times as likely to be bitten when apprehended by a canine as non-White suspects ( $\chi^2=4.36$ ,  $P<.05$ ). These data showed that the proportion of non-White suspects apprehended by use of a canine was significantly less than the proportion of White suspects apprehended by use of a canine and that, when apprehended by a canine, non-White suspects were significantly less likely to be bitten by the canine than White suspects. Clearly, these data showed no evidence of bias

against non-White suspects in the use of police canines during the study period.

Table 4 shows total apprehensions, canine-assisted apprehensions, and the canine bite rate by the sex of the suspect. Overall, 4.7 percent of apprehensions during the study period were canine-assisted apprehensions. Canines assisted in 5.2 percent of the apprehensions of male suspects and 2.5 percent of the apprehensions of female suspects ( $\chi^2=56.58$ ,  $P<.001$ ). The bite rate for male suspects was 15.0 (per one hundred apprehensions)<sup>11</sup> and the bite rate for female suspects was 4.8 (per one hundred apprehensions).<sup>12</sup> That is, male suspects were 3.1 times as likely to be bitten when apprehended as female suspects ( $\chi^2=8.08$ ,  $P<.01$ ). These data showed that the proportion of female suspects apprehended by use of a canine was significantly lower than the proportion of male suspects apprehended by use of a canine and that, when apprehended, female suspects were significantly less likely to be bitten by the canine than male suspects.

During the 1,179 canine-assisted apprehensions during the study period, canine officers sustained nine injuries, an injury rate of 0.76 (per one hundred apprehensions). Of these injuries, five required first aid on the scene. None required treatment at a hospital. Only one was a canine bite. In contrast, there were 439 instances of injury to Montgomery County Police Officers during 23,892 noncanine apprehensions of suspects during the study period, an injury rate of 1.84 (per one hundred apprehensions). As might be expected, canine officers had a significantly lower probability of being injured during an apprehension than noncanine officers ( $\chi^2=7.38$ ,  $P<.01$ ).

Table 4  
Canine use and bite rate by sex of suspect

Sex of suspect	All apprehensions	Canine-assisted apprehensions		Suspects bitten	
		Number	Percent of all apprehensions	Number	Bite rate
Male	20,854	1,075	5.2	161	15.0
Female	4,217	104	2.5	5	4.8
Total	25,071	1,179	4.7	166	14.1

## Discussion

How can the above information benefit a police manager? Knowledge of the apprehension rate (a modest thirteen apprehensions per one hundred deployments during the study period in the case of tracks) can be used as a base for assessing proposed changes to canine tactics or deployment strategies. For example, assume that a police manager is considering a proposal to increase the size of the canine unit in order to decrease response time on the theory that a decrease in response time will increase apprehensions. Assume further that the current distribution of response time for canine calls is obtained (from reports filed by the canine officers) and that the distribution of response time with the proposed increase in the canine unit can be reasonably estimated. Correlating the distribution of response time under current practice with the apprehension rate will allow the police manager to estimate the impact of response time on the apprehension rate. This estimate, in turn, can be used to estimate the impact of the expected change in the distribution of response time associated with the proposed expansion of the canine unit on the apprehension rate. As the monetary cost of the proposed increase in the canine unit also can be estimated, the police manager will have the data required for a cost-benefit analysis.

Similarly, the bite rate (14.1 suspects bitten per one hundred apprehensions during the study period) can be used as a base rate to evaluate proposed changes to canine tactics. For example, the Montgomery County Police Department used a canine lead of twenty feet for tracks during the study period. Suppose a proposal to reduce the length of the lead is being considered on the theory that it will reduce suspect injury (or a longer lead is proposed on the theory that it will increase apprehensions), and a pilot project is approved. The apprehension rate for tracks (13.0), bite rate (14.1), and officer injury rate using the twenty-foot lead (0.76) are known. By collecting the same data for the pilot project, the police manager would have the information necessary for an empirically based cost-benefit analysis of the proposed change.

Knowledge of the bite rate serves another useful function. It provides the police manager with information that may be helpful in responding to an unfortunate, high-profile incident by putting the incident in a broader context. It is without question that unfortunate incidents (for example, a suspect being seriously injured by a police officer or a police canine) may occur from time to time. It is also without question that the ability of the

police agency to respond appropriately to press or community-organization inquiries can have a significant impact on police–community relations. As responses in such situations must be immediate—or almost immediate—to be effective, any data required for the response have to be readily available. For example, suppose a suspect is severely bitten by a police canine and the incident results in a widely reported allegation by the suspect's attorney that the police department has a practice of mistreating suspects. A key question for the press, the public, and possibly the courts will be whether the incident was justified, whether it was an aberration, or whether it was part of a pattern or practice of police abuse. A police agency that can show immediately that its bite rate is relatively low (the bite rate for Montgomery County Police Department canines during the six-year study period was 14.1 per one hundred apprehensions) would be better placed to respond to the incident and would have a strong argument that, at a minimum, the incident is not evidence of a pattern or practice of police abuse. The medical treatment rate (9.1 per one hundred apprehensions) and the hospital treatment rate (4.8 per one hundred apprehensions) for the study period also provide evidence that the vast majority of canine-assisted apprehensions occurred without serious injury to the suspect.

Knowledge of the bite rate and canine-assisted apprehension rate by the race of the suspect may be useful for the same reason. Suppose an incident involving a police canine results in an allegation of disparate racial treatment. The questions typically raised are twofold. First, does the incident indicate disparate treatment? Second, if the incident indicates disparate treatment, was it an aberration or was it part of a pattern or practice? Although data of the type developed in this study cannot show whether a particular incident was racially motivated, it can provide information on overall practice. During the study period, the canine-assisted apprehension rate for non-White suspects was significantly lower than that for White suspects (4.1 percent for non-White suspects compared to 5.8 percent for White suspects,  $P < .001$ ). These data provided no support for the proposition that Montgomery County police canines were used disproportionately more against non-White suspects. Moreover, non-White suspects were bitten at a significantly lower rate than White suspects (12.3 suspects bitten per one hundred apprehensions for non-White suspects compared to 16.2 suspects bitten per one hundred apprehensions for White suspects,  $P < .05$ ). Again, these data showed no evidence of bias against non-White suspects.

## Summary

This article suggests how rate-based information about the use of police canines (i.e., apprehension rate, bite rate, medical treatment rate, hospital treatment rate, and officer injury rate) can be useful to a police manager both for program evaluation and public information tasks. Currently, such rate-based information is not routinely collected or published by police agencies.<sup>13</sup> Rate-based information would be no more difficult to collect than the simple frequency counts currently collected by many police canine units, but it would be considerably more useful.

Using the rate-based information described above, it was found that police canines in the Montgomery County, Maryland Police Department apprehended 13 percent of the suspects they were deployed to “track” during a six-year period (1993–1998). Of the suspects apprehended by canines, 14.1 percent were bitten, 9.1 percent received medical attention for a canine bite (either on the scene or at a hospital), and 4.8 percent received medical attention for a canine bite at a hospital. The proportion of non-White suspects apprehended by canines was significantly lower than the proportion of White suspects apprehended by canines, and non-White suspects were bitten during apprehension at a significantly lower rate than White suspects. The injury rate of canine officers in apprehending suspects (0.76 injuries per one hundred apprehensions) was significantly lower than the injury rate for noncanine officers (1.84 injuries per one hundred apprehensions).

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## Notes

1. At the time this article was being prepared, the county police department of Prince George’s County, Maryland, a neighboring county, was the object of severe criticism for what appeared to be repeated instances in which police canines had inappropriately and severely bitten suspects (see, e.g., *Fallis & Washington, 2001; Washington, 2002*).

2. As part of this review, the senior author made telephone contact with the National Police Canine Association (June 20, 2002) and the North American Police Work Dog Association (June 20, 2002), two national police dog associations. Representatives of both organizations indicated no knowledge of any empirical study of the use of police canines.

3. The use of force report form (MCP-37) was amended several times between 1993 and 1998, but these changes were minor and did not affect the data used in this study.

4. The canine-apprehension report is not the same as the arrest report completed by the arresting officer. The canine-apprehension report is a separate document that the canine officer completes after each apprehension, providing a brief description of the incident that resulted in the apprehension. A use of force report is required, in addition, when a suspect is bitten or otherwise injured, or when other physical force is used.

5. An arrest by statement of charges is an arrest initiated by a police officer on the scene without a warrant. Arrests involving the execution of an arrest warrant were excluded because (1) they rarely involved use of a police canine, and (2) a substantial proportion involved voluntary surrender at the police station (and thus almost no probability that force would be involved).

6. To ensure that the data would not be used to identify individual officers, officer identification numbers on all documents were encrypted by police department computer staff before release to the researchers.

7. A random sample of 239 out of 1,179 canine-apprehension reports (20.1 percent) was used to estimate apprehension percentages for the different types of canine deployments (i.e., tracks, building searches, and other canine deployments). This was necessary because the only source tying the type of canine deployment to an apprehension was the noncomputerized apprehension report, and review of every apprehension report during the study period was not feasible.

8. The fact that the maximum possible apprehension rate for certain types of deployment was not known, but clearly less than one hundred (per one hundred deployments), does not prevent the use of the actual apprehension rate to assess alternative policies. For example, a finding that a deployment strategy that reduced canine response time increased the apprehension rate for building searches from 6.5 to 12 (per one hundred deployments) might be quite useful for policymaking purposes, regardless of whether the maximum possible apprehension rate for building searches happened to be 40, 55, or 70 (per one hundred deployments).

9. An additional 2 percent sustained injury by other use of force by the canine officer.

10. An additional 2.8 percent of suspects sustained injury by other use of force by the canine officer.

11. An additional 2.5 percent of suspects sustained injury by other use of force by the canine officer.

12. An additional 1 percent sustained injury by other use of force by the canine officer.

13. Telephone contact was made by the senior author with The National Police Canine Association (January 16, 2002) and the North American Police Work Dog Association.

tion (January 16, 2002), two national police dog associations. Representatives of both organizations indicated that such rate-based information was not routinely collected by police agencies.

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