

# The Animal Bite Epidemic in Baltimore, Maryland: Review and Update

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## Introduction

In the late 1960s and early 1970s, many urban areas in the United States including Baltimore, Maryland began to experience a marked increase in the frequency and number of dogs noted roaming the streets. Simultaneously there was an increase in the number of reported animal bites, especially dog bites, so that this became a major health concern.<sup>1-5</sup>

In Baltimore, Maryland, from 1953 to 1964, annual animal bites increased from 2,933 to 4,783 (303 to 505 per 100,000).<sup>2</sup> For the next eight years, through 1972, the number of animal bites rose dramatically. In 1972, 7,436 animal bites were reported, 2,653 more than in 1962, a rate of 791 per 100,000 population (Table 1).

ning at large and to report their recommendations by spring 1973.

4. As a result of the Report of the Advisory Committee on Canines a comprehensive Animal Control Ordinance (No. 708) was passed by the City Council in August 1974; a Bureau of Animal Control was established to implement and enforce all the requirements of the Animal Control Ordinance.

5. An educational and publicity campaign was undertaken to educate and advise the public on how to respond and do their part in facing the problems.

6. Rabies vaccination of dogs became a prerequisite to obtaining a license, thus increasing the cost of keeping a dog.\* It was felt that an increase in cost would help educate the animal owner to the value of keeping a pet, and would

TABLE 1—Animal Bites Reported in Baltimore, Maryland 1970-1976.

Year	Total	Dog	Cat	Other Species	Bite Rate per 100,000 Population	Number of Bites by Strays	Per Cent of Bites by Strays
1970	6415	6023	221	171	675	1883	29.3
1971	7313	6809	262	242	770	1729	25.0
1972	7436	6922	260	254	791	1859	25.0
1973	6568	6123	227	218	709	1587	24.2
1974	5810	5424	196	190	638	1303	22.4
1975	5432	5101	174	157	606	1459	26.9
1976	5092	4760	194	138	579	1412	27.7
TOTAL	44066	41162	1534	1370	687	11232	25.5
Row % of Total	100.0	93.41	3.48	3.11			

The following steps were taken in an effort to eradicate the problem:

1. Surveillance of animal bites was intensified. The newly appointed public health veterinarian became the consultant on animal control matters.

2. The state law requiring reporting of animal bites was pursued more vigorously; the City Police Department became more aware of the problem and assisted other authorities in dealing with it.

3. The Mayor of Baltimore City appointed an Advisory Committee on Canines to study the situation of animals run-

eliminate those not sufficiently committed to responsible pet ownership. Low-cost mass rabies vaccination clinics are conducted each spring.

7. Enforcement of licensing and vaccination requirements were intensified. A special unit within the Bureau of Animal Control was charged with these responsibilities as well as implementing the sanitation and leash requirements and the anti-cruelty provisions of the ordinance.

8. Several new fees and penalties were established, and those already in existence were increased, some several fold. The following fees are now in effect: license fees, impoundment penalties, adoption fees, boarding fees for impounded animals, kennel permit fee for owners of three dogs or cats, fees for Commercial Animal Establishments, and fees for keeping wild animals.

9. Those who fail to obtain licenses or permits by the

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\*Rabies vaccination of cats is also required.

**TABLE 2—Animal Bites in Baltimore, Maryland 1970-1976, Response to 10-Day Quarantine, When Owner is Known.**

	Number of Bites Where Owners are Known	Per Cent of Total Bites	Number of No Response	Per Cent of No Response
1970	4431	69.1	3188	71.9
1971	5430	74.3	2626	48.4
1972	5381	72.4	2141	39.8
1973	4839	73.7	1809	37.4
1974	4340	74.7	1789	41.2
1975	3779	69.6	1589	42.0
1976	3561	69.9	1467	41.2

deadline are assessed a penalty that ranges up to 33 per cent higher than the regular fee; violators are taken to court, if necessary.

10. A number of regulations have been written and implemented to supplement and clarify the Animal Control Ordinance. These include: specifications for the humane handling, care, treatment and transportation of dogs and cats; prohibition of use of steel leg traps; a requirement that dog chains be at least three times the length of the dog when the chain is used to keep the dog outdoors; and definition of the term "public nuisance".

### Statistical Findings and Results

About 90 per cent of the animal bite reports originate from hospitals and/or police, a situation which has not changed. The number of reported bites leveled off in 1973 and began a continuing decline in 1973 (Table 1). In 1976, only 5,092 animal bites were reported, a 32 per cent decline

from 1972. The percentage of bites by "stray" animals (owners not known) has remained at about 25 per cent, but with improved enforcement procedures, fewer animal owners fail to respond to the required ten day isolation period and examination of their animal by a veterinarian following a bite incident<sup>6</sup> (Table 2).

Our records confirm previously published data that more animal bites occur during the summer months when there is greater contact between people and animals. However, the total number of bites reported in Baltimore have declined for each month since 1972. For the peak month of June, there was a decline from 1,048 bites reported in 1972 to 601 reported in 1976. Children in the 5-14 age group are more prone to being bitten than other groups.<sup>2, 7</sup> For all age groups males are reported bitten twice as often as females.<sup>7</sup>

The average human population in Baltimore City for 1970-1976 was 915,690, 52 per cent non-white. Table 3 shows that although a few more non-whites than whites were bitten during these seven years, the animal bite rates per 1,000 population were higher for whites in all age groups except those over age 65.

To assess the animal factor, we evaluated records of dog breeds in animal bites. Breeds of dogs were indicated in 45 per cent to 50 per cent of the bite reports. Table 4 shows that over 50 per cent of dog bites in which breed was reported were attributed to large breeds such as German Shepherds, Collies, Spitz, Dobermans, Retrievers, and Boxers, and that an additional 27 to 30 per cent of such bites were caused by mixed breeds, frequently described by the bite victims as large dogs. A random 50 per cent sampling of dog license registrations in 1974 and 1976, and a total count of 1975 registration cards, showed that about 22 per cent of the licensed dogs are of the German Shepherd breed (Table 4). This compares to about 45 per cent of bites attributed to this breed. Valuable and other small dog breeds, while totaling about 44

**TABLE 3—Animal Bites by Age and Race of Victim in Baltimore, Maryland 1970-1976.**

Age Group		Total Number of Bites	Average Annual Number of Bites	Average Annual Population	Average Annual Rate per 1000 Population
0-4	W	2,584	369.1	25,650	14.39
	NW	1,895	270.7	42,415	6.38
5-14	W	8,725	1,246.7	62,810	19.85
	NW	11,056	1,579.4	107,405	14.71
15-24	W	3,019	431.6	67,675	6.38
	NW	3,205	457.9	93,750	4.88
25-44	W	3,218	459.7	95,975	4.79
	NW	2,908	415.4	119,645	3.47
45-64	W	2,529	361.3	113,505	3.18
	NW	1,739	248.4	84,515	2.94
65+	W	753	107.6	74,260	1.45
	NW	417	59.6	28,085	2.12
Unknown	W	1,099	157.0		
	NW	921	131.6		
TOTAL	W	21,933	3,133.3	439,875	7.12
	NW	22,133	3,161.9	475,815	6.65

TABLE 4—Breeds of Dogs in Relation to Registration, Baltimore, Maryland 1974-76.

Breeds	1974			1975			1976		
	Number of Bites*	Per Cent of Total Bites*	Per Cent of Total Registration	Number of Bites*	Per Cent of Total Bites*	Per Cent of Total Registration	Number of Bites*	Per Cent of Total Bites*	Per Cent of Total Registration
Mixed	1078	36.9	26.5	766	30.7	23.7	643	27.7	23.5
German Shepherd	1291	44.2	24.4	1149	46.1	21.1	1031	44.4	22.5
Collie	78	2.6	5.2	75	3.0	5.3	65	2.8	5.5
Spitz	19	.7	1.1	15	.6	.9	86	3.7	1.3
Doberman	29	1.0	.8	39	1.6	.9	39	1.7	1.0
Labrador Retriever	13	.4	.9	19	.8	1.1	14	.6	1.4
Boxer	16	.6	1.8	12	.5	1.1	11	.5	1.2
Other	397	13.6	39.3	418	16.7	45.9	433	18.6	43.6
Total	2921	100.0	100.0	2493	100.0	100.0	2322	100.0	100.0
Total Sample of Registration			9,986			17,813			11,769

\* Bites of dogs whose breed was reported as part of the bite report.

per cent of those registered, were listed in less than 20 per cent of bite reports.

### Summary

In 1972 in Baltimore, a peak of 7,436 reported animal bites (8/1,000 population) was reached. The bite rate for the most susceptible age group (5-14) was 19 per 1,000 population. By 1976, only 5,092 bites were reported, 5.8 per 1,000 total population, and 12.3 per 1,000 population 5-14 years of age.

The decline in the number and rates of animal bites is believed due in large measure to the actions taken by the Bureau of Animal Control: education and publicity, increased fees and penalties, and enforcement of the new laws and regulations.

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