

DOGS AND PUBLIC HEALTH

A COMMUNITY INFORMATION SERVICE OF THE CHURCHILL AREA ENVIRONMENTAL COUNCIL

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Dogs have been aptly called 'man's best friend,' and have provided companionship, recreation and even vital service to many people. This bond between man and dog predates civilization and is often as strong as any bond between two people. There are about 45 million owned dogs in the U.S. and 46% of all households have at least one dog. Most dog owners are knowledgeable, responsible people who treat their pets humanely and supervise them adequately so they do not become problems for neighbors and the community.

However, the growing number of dogs in urban areas has created some canine environmental problems and has necessitated regulatory ordinances aimed at licensing, leashing and immunizing pets. Problems associated with our urban dog population include:

★DOG BITE

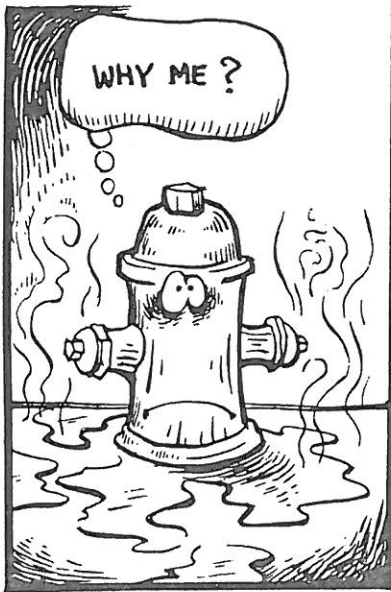
Second only to gonorrhea as a commonly reported public health problem, more than one million dog bites are recorded annually in the U.S. The real total may be two or three times that figure. A 1959 study of 950 dog bite victims in Pittsburgh revealed that:

- 88% of the bites resulted in lacerations and contusions; 10% required sutures.
- legs are the most frequently bitten body part (39%) with arms a close second (37%) and the head, face and neck receiving 16% of the reported injuries.
- 61% of victims are under 15 years of age with the 5 to 9 year old group at highest risk and boys being victims twice as often as girls (possibly because boys engage in more provocative actions.)
- of the dogs that bite:
 - 50% are mongrels
 - 64% of purebred dog bites are inflicted by German Shepherds (although they are only 29% of the purebred population.)
- female and young dogs (6 to 11 months old) are more apt to bite than male and older animals, but the bite of older and larger dogs is apt to be more serious in the medical sense.



★DOG FECES AND URINE

The Environmental Protection Agency estimates that each large dog excretes $3/4$ lb. solid waste and about one quart urine per day. Dog wastes are deposited directly into the environment (New York, whose streets receive a daily insult of 150,000 pounds of feces and 90,000 gallons of urine, now has a "stoop and scoop" law that imposes a \$100 fine on people who do not clean up after their pets.) The consequences of dog pollution include:



- Fly Breeding - each stool can breed more than 100 flies (second only to garbage cans in urban areas.) Burial of feces in soil does not affect fly emergence. Fecal-bred flies can transmit Salmonella bacteria between dog and man. Feces also nourish rats and roaches.
- Vegetation Kill - dog cankers from urinating dogs kill tree and shrub bark. The soil around such plants contains 3 to 4 times the maximum tolerable soluble salts. Grass and ground cover plants are often damaged by dog feces and urine that are not removed or diluted.
- Water Contamination - the city and its suburban fringes represent an open ecosystem. Storm water runoff with its burden of animal and other wastes flows directly into river basins. Local creeks tested recently show high levels of fecal bacteria contamination by warm-blooded animals - probably pets.

★DOG PARASITES

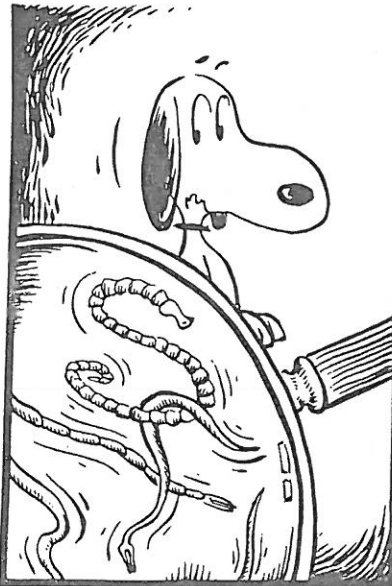
More than 40 diseases in the U.S. can be transmitted from dogs to man. The following are especially noteworthy as public health problems:

- Visceral Larva Migrans - is the most common and alarming since 33 to 52% infection levels exist in urban dogs. Several species of roundworms (nematodes) are implicated - the most common being Toxocara canis. Human infection begins with the ingestion or inhalation of roundworm eggs after handling puppies, breathing dusty air where dog feces have dried and playing in or eating dirt where eggs have accumulated (such as playgrounds and enclosed back yards shared by dogs and children.) Actual physical contact with a dog is not necessary. Victims are usually children under 6, often with a history of pica (eating flakes of dirt) or chronic hand-to-mouth habits. Larvae hatched from these eggs invade

and migrate through the human gut, blood and central nervous system. Symptoms may include stomach ache, enlarged spleen and liver, convulsions, fever, anemia, blindness and various neurological disorders.

NOTE: Cats can transmit a serious protozoan parasite called Toxoplasma through their stools, bites and scratches. Healthy adults are not affected because antibodies made on exposure control the parasite (20 to 30% of Americans have such antibodies,) but the fetus inside a pregnant woman can be blinded or otherwise damaged since the parasite can cross the placenta. Toxoplasma may also be ingested through undercooked meat since cattle fed forage often pick up the eggs of this parasite which then encysts in the muscle of the animal.

- Bacteria, Rickettsias, Viruses - of many types can spread from dog to man. Examples are tuberculosis, diphtheria, leptospirosis, brucellosis (undulant fever,) measles, mumps and scarlet fever. In addition, tick-borne typhus, various rickettsias and rabies (a viral disease) are frequent microbial parasites shared by dog and man.
- Fungi - Histoplasmosis (caused by Histoplasma capsulatum) is often picked up from soil and ticks by dogs and occasionally transmitted to man.
- Other Worm Infections -
 - Heartworm (Dirofilaria) is carried by mosquitoes from dog to man. The adult roundworm lives predominantly in the heart muscle.
 - Whipworm (Trichuris) is another roundworm parasite shared by dog and man. It inhabits the colon and caecum of its host.
 - Tapeworm (Echinococcus) infections cannot complete their life cycle in man, but the larvae of the worms often migrate into the central nervous system and form large, watery, 'hydatid' cysts, easily misdiagnosed as brain tumors. These flatworm parasites are common only in farm or ranch dogs who contact the viscera of sheep and goats. Egg-filled tapeworm segments are excreted with the feces of infected dogs.



★ OTHER DOG PROBLEMS

Noise, particularly at night - This is a community nuisance and a source of irritation to neighbors.

Accidents - Many vehicular accidents result from dog avoidance reactions by drivers.

Wildlife Decimation - Free roaming dogs maim and terrorize wild animals from birds to deer and reduce the numbers of species that can live near urban centers.

Proliferation - Dogs are 15 times more prolific than humans and at current breeding rates are expected to double their numbers by 1984. Low cost clinics will sterilize pets safely.

Cost - \$500 million a year is spent by local governments in the U.S. to clean up after dogs and to catch and dispose of strays. An additional \$10 million in damage is done to U.S. livestock by attacking dogs. Property damage from canine activities is costly to individual citizens.

★RECOMMENDATIONS

The leash law should be strictly enforced.

Children should be taught to avoid teasing and petting strange dogs and should never try to stop dog fights.

Attack-trained dogs should not be house pets. A barking dog is best for safety.

Dog bites should be reported promptly and records compiled.

Hold your ground if cornered or threatened by a dog; feigning to throw an object is helpful; avoid staring at a dog's eyes.

Dogs should be properly immunized or treated for such diseases as rabies, distemper, Parvo virus and worms.

Pets not intended for breeding should be spayed (females) or neutered (males) to prevent reckless procreation.

Pets no longer wanted should be taken to one of the animal shelters, not abandoned in the wild.



Owners should clean up promptly after their pets. Feces should be disposed of in the toilet, not the trash or garbage. The property rights of others should be respected and dogs so trained.

Children should not be permitted to play where dogs defecate and should be trained to keep hands out of the mouth from an early age. Signs of pica should receive immediate attention. Playgrounds should be fenced, closed to pets and cleaned regularly. Sand boxes should be covered when not in use.

Youngsters suspected of visceral larva migrans infection can be examined by such agencies as the Allegheny County Health Department (a simple blood test for VLM antibodies exists.)

Pregnant women should not clean cat litter boxes and should take special precautions against scratches and bites by cats.

No one should kiss or share food with a pet, nor should raw or undercooked meat be eaten, whether it be pork, beef or lamb.

Street shoes should be removed when entering the house.

This public information brochure seeks to urge social responsibility on the part of pet owners and law enforcement activity on the part of government.

It seeks to educate our citizens about the basic public health implications of an ever-growing pet population. Dog owners often show a surprising resistance to negative information about dogs, even when the safety and health of children are involved. The real issue seems to be how to discuss this issue openly and how to gain public acceptance of adequate control measures.

Material for this publication has been drawn primarily from the following sources which the interested individual is urged to consult for more detail.

- Beck, Alan, THE ECOLOGY OF STRAY DOGS, Baltimore, York Press, 1973. (Available at Carnegie Library, Science Dept.)
- Chaudry, Ihsan, Public Health Veterinarian, Allegheny County Health Department - Telephone 578-8060. (Dr. Chaudry is willing to discuss animal problems with citizens.)
- Feldmann, Bruce M., "The Problem of Urban Dogs," Science 185(4155):903, September 13, 1974. (Available at University libraries and through Carnegie Library, Science Dept.)

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