1961

The Veterinarian in Civil Defense

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Recommended Citation

Hutchinson, L. R. and Sis, R. F. (1961) "The Veterinarian in Civil Defense," *Iowa State University Veterinarian*: Vol. 24 : Iss. 2 , Article 5. Available at: [https://lib.dr.iastate.edu/iowastate_veterinarian/vol24/iss2/5](https://lib.dr.iastate.edu/iowastate_veterinarian/vol24/iss2/5)

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What will be the role of the veterinarian in the civil defense of our nation? In a recent survey, 70 percent of the veterinarians asked the above question said they did not know; 20 percent had a vague idea of what was expected of them and 10 percent had incomplete knowledge of what would be expected of them in the initial phases of civil defense mobilization. Though current planning infers that many veterinarians would be utilized in casualty care and preventive medicine activities in the immediate post-attack period, veterinarians will be needed to perform services of a strictly veterinary nature after most of the human casualties have received emergency treatment. Such veterinary activities will include protection of food animals against diseases and the effects of chemical, biological, and radiological warfare; and supplementing food inspection forces for certain food processing plants, as well as food storage facilities which may have been damaged or contaminated.

WHY CIVIL DEFENSE?

The civilian populace of a country in any future war or peacetime nuclear weapons accident will be subjected to various destructive agents. It is only logical then, that the civilian populace be organized to reduce to a minimum the effects of such a disastrous incident. Refinement of agents has provided many nations with a vast stockpile of explosive, chemical, biological, and radiological destructive devices. Much knowledge was gained in treatment of blast and burn victims in previous wars. In the future it is conceivable that numerous chemical, biological, and radiological weapons may be employed.

Chemical warfare agents can be used to produce casualties, to destroy areas of strategic value, produce fire storms, and contaminate food and water supplies. The chemical agents are extremely poisonous compounds. In recent years the nerve gases have been widely publicized. However, there are also blood gases, which alter the blood oxygen carrying capacity; blister gases, which cause destruction of tissues contacted; choking gases, which attack the respiratory system; vomiting and tear gases, which cause harassment of personnel. Biological warfare agents are of major concern to the veterinarian. It is conceivable that an enemy will attack the primary target (man) through the destruction of his food supplies. Potential diseases are: anthrax, African horse sickness, African swine fever, psittacosis, Rift Valley fever, tularemia, plague, brucellosis, glanders, foot and mouth disease and various encephalitides. It will be noted that many of these diseases may be transmitted from animals to man. Detection of biological agents is difficult since there is usually no advanced warning before an outbreak. It may not be simple to differentiate between these diseases and some of our native diseases. Foot and mouth disease, for example, may be masked by vesicular stomatitis and vesicular exanthema.
Radiological warfare agents have by far received the most publicity. In a destructive agent such as an atomic or thermonuclear weapon only about 15 percent of the released energy is given off as ionizing radiation. Of this 15 percent the initial radiation accounts for about five percent and residual radiation (fallout) accounts for the remainder. Numerous articles have been written pro and con about radioactive fallout dangers and it is not the purpose of this paper to enter into the controversy. Fallout may present one of the most important aspects of a future war, especially in the primary target areas. It must be remembered that tremendous blast and heat are encountered in nuclear warfare and casualties from these forces plus initial radiation will be very significant. On the other hand fallout may produce a long term contamination of the environment. This will present specific problems in providing uncontaminated food and water.

WHAT IS EXPECTED OF THE VETERINARIAN?

Of greatest importance in the immediate post-attack period will be the care of civilian casualties. The veterinarian and all his facilities, including veterinary hospitals and clinics, will be utilized for the emergency care and treatment of human casualties under the direction of physicians. The veterinarian may be called upon to perform the following functions:

1. Take necessary steps to save life and limb of the injured, including but not limited to artificial respiration, emergency treatment of open chest wounds, relief of pain, treatment of shock and the preparation of casualties for movement.
2. Control of hemorrhage.
3. Attainment and maintenance of patent airway, and intratracheal catheterization, to include tracheotomy.
4. Proper and adequate cleansing and treatment of wounds.
5. Bandaging and splinting.
6. Administration of anesthetics under medical supervision.
7. Assisting in surgical procedures.
8. Insertion of nasogastric tubes to include lavage and gavage, as directed.
9. Administration of whole blood and intravenous solutions, as directed.
10. Administration of parenteral medications, as directed.

After the initial demands created by the emergency situation have been met, a certain number of veterinarians will have to return to their primary duties of a strictly veterinary nature. Such veterinary activities are:

1. Assist in evaluation of potential hazards from radioactive contamination to livestock in the area.
2. Maintain liaison with livestock sanitary officials in the area.
3. Evaluate evidence of radioactive contamination of food stores and make recommendations as to utilization and disposal.
4. Give prompt assistance to civil authorities in evaluating radioactive contamination hazards to foodstuffs, especially to the local meat and milk supply.
5. Supervise the issuance of all food rations for consumption. (All food will have to be inspected before consumption).

Veterinarians, particularly those with public health training, can restore sanitation and safe public utilities. Such as by performing the following:

1. Check the sources, storage tanks and distribution system for possible damage and contamination of water supplies.
2. Co-ordinate with the sanitary engineer to insure that increased chlorination and the use of a filter is accomplished.
3. Insure that outdoor latrines are constructed in the event the sewage system is damaged.
4. Insure that disposal areas are constructed for removal of contaminated material.
5. Survey insect and rodent control conditions and insure that measures are being enforced.

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6. Collect environmental samples of soil, water and material following clean-up of the contaminated area and submit samples to the appropriate Radiological Health Laboratory. Follow-up samples should be collected and submitted six months later.

An important aspect of the vast number of private veterinary establishments is the capability of providing seriously needed medical supplies in case of a national emergency. Most veterinary hospitals have x-ray and surgical equipment, surgical dressings, drugs, blood extenders, splint material, sutures and other essential medical items. These same clinics and hospitals may be turned into emergency first-aid centers.

TRAINING

It is the objective of the OCDM (Office of Civil and Defense Mobilization) to have all medical and allied personnel versed in the aspects of disaster medical care. Veterinarians should receive training and become proficient in the practice of disaster veterinary medicine and in addition receive such training in disaster medicine as will enable them to take effective lifesaving and first-aid measures and to assist the medical profession by performing approved additional functions. They should also receive instructions in the casualty-producing effects of mass weapons, passive defense measures, and sanitation, to the end that they may protect themselves from preventable injuries and disease in the event of an all-out war.¹

With the approval of the American Veterinary Medical Association, arrangements have been made between OCDM and the American National Red Cross for entire local veterinary societies to receive instruction in Red Cross first-aid methods.² Local veterinary societies should take the initiative to organize training courses in conjunction with Civil Defense and Red Cross officials. It is advised that all veterinarians obtain proficiency in the specialties that may be required of them in the event of natural or military disasters.

Veterinarians should take an active part in formulating plans for emergency medical care in conjunction with other local medical and civic groups. No one plan can cover all the variables in a disaster. The right course of action must be chosen at the time of the disaster and be based upon the best information available. The flexibility of the emergency plans depends upon proficiency in every assignment that may be given. Training is needed if the requirements are to be met.

LITERATURE CITED:

ADDITIONAL REFERENCES:

Honors Program

Iowa State University Honors program has been approved for development in the College of Veterinary Medicine. The pilot plan as it will begin, will be developed to meet the student's particular needs, interests, and aptitudes. As a program it is not expected to replace in any instance any part of the professional curriculum, but is set up with the goal of giving to those students capable of handling the opportunity, privileges of additional research projects and development of an educational program to further his individual objectives.

Students possessing a 3.5 cumulative grade point average at the end of two quarters of professional study and who maintain at least a 3.00 point cumulative average are eligible to apply for consideration. The program will be administered by the Honors and Awards Committee.