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Parenteral Nutrition

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might have lived a while longer. Other pet owners worry that they're going crazy because they think they see or hear their deceased animals.

Other factors may cause upsetting feelings as well, such as important and difficult decisions including how to dispose of the pet's body. Dunn approves of the procedure at the School of Veterinary Medicine in which an animal's body is held at the hospital for three days after a decision has been made, in case the owner changes his mind and chooses to bury or cremate the animal privately.

"But even though there are common things that many people feel, the way people respond to their pet's death is very individual," Dunn says.

Some people respond by eating or sleeping either too much or too little. Others find they have a difficult time concentrating on even the most mundane of tasks, while some people seek solace in drugs or alcohol to lessen the pain. In fact, Dunn encourages grieving pet owners who have chronic medical conditions to check with their physicians; the loss of a pet is a stress so severe that it can trigger an attack or relapse.

Men and women often respond differently to a pet's death. "Women tend to talk more," says Dunn. "Men may pace, or smash their fists together. They're just as upset, but they show it differently." Talking with other grieving pet owners is probably the most powerful component of healing; tears of empathy and nods of understanding often punctuate the session. People sometimes bring photos of their pets to the group, while others share writing or artwork they've created to honor their animals.

But Dunn's approach is multi-faceted: She urges group members to keep busy. She tells them to exercise. She suggests they write letters to their pets, and to keep a diary of how they're feeling. She also

encourages them to re-claim experiences, with the support of an understanding friend, that had been shared with the now-deceased animal; for instance, to walk the same park path that used to be the favorite stroll with the dog.

Another useful resource is *When Your Pet Dies: How to Cope With Your Feelings*, by Jamie Quackenbush, M.S.W. who was affiliated with the School of Veterinary Medicine. The support group began in July 1987.

Dunn screens prospective group members to make sure that a group experience would be the most effective form of treatment. Also, she tries to choose members who will stay focused on pet bereavement. "Some people, who might have more severe psychiatric problems, use the animal to get help," she says. "And it's sometimes easier to ask for help because your pet has died."

The group is appropriate for people whose animals are terminally ill, as well as for people whose pets have died. "The group is open ended," says Dunn, who is a frequent lecturer about pet bereavement at the School of Veterinary Medicine. "You can come as often as you want."

Dunn tells of a mother of four teenagers, who joined the group with her two older children after the family had had the family collie euthanized. This already difficult situation was compounded by the fact that the dog was the only living creature responded to by the woman's mother, who had Alzheimer's Disease.

"Although the majority of people who come are dealing with a recent loss, we sometime get people whose pets died quite a while back — and sometimes they've already gotten a new pet (not that getting a new dog erases the memory of Fido or Rover). But they feel it's the only place they can talk about their

pets who've died with other pet owners who would understand."

Dunn shares an excerpt of a letter written to her by a woman who joined the group after her dog died of cancer: "As the one-year anniversary of my loss approaches, I can honestly say that I feel my pain will always be with me, but the group has taught me how to deal with it. Three months ago, I would never have thought of owning another dog, and I am now the owner of a seven-month-old puppy. She will never replace Butchie, but I know I will grow to love her."

Another letter was written by a woman who joined the group while her dog was terminally ill: "The grief I was able to share with others in my same situation allowed me to voice my true feelings and demonstrate a selfish outcry, something I am rarely able to do. A year after my dog's passing, I find myself still involved with the group to honor his loving memory."

Because there are only a handful of pet bereavement groups in the United States, group participants have come from as far away as Atlantic City and Baltimore. Students at the School of Veterinary Medicine sometimes attend the group, learning coping skills that they'll need as they progress in the profession. "I sometimes see students on the elevator who are taking a body to the morgue, and they're crying," Dunn says. "I tell them these are tears of love."

The group, which is free, meets every other Tuesday from 3 to 5 p.m. It is open to the public; grieving pet owners need not have had their animals treated at the School of Veterinary Medicine. Dr. Louise Shoemaker, Professor at the School of Social Work, University of Pennsylvania, is the Consultant for the Group.

Janet R. Falon

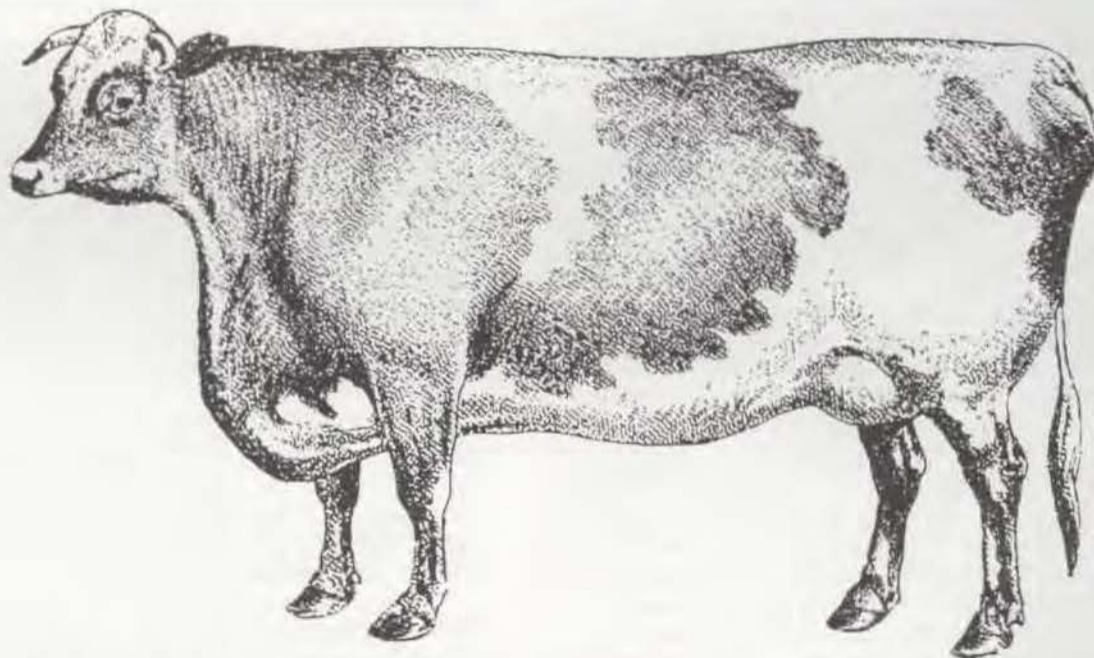
Parenteral Nutrition

Young, critically ill calves pose a special challenge for the veterinarian. Their energy reserves are slim, and this, coupled with the demands of rapid growth and coping with cold temperatures, can become a critical factor when such young animal becomes ill. Energy reserves are quickly depleted, particularly if the animal has diarrhea, a common ailment among young calves. Then dehydration is an additional danger, and the inability to tolerate normal amounts of milk feedings further limits what can be done to save the calves.

In recent years parenteral nutrition (PN), long in use in human medicine, has been adapted for use in animals. PN for calves, a specially formulated solution of dextrose, amino acids, sodium bicarbonate, lipids and multiple B vitamins, is administered intravenously. It helps the critically ill animal to retain weight and reverse dehydration.

Two recent studies at New Bolton Center, the large animal facility of the University of Pennsylvania School of Veterinary Medicine, by Dr. Thomas Divers, associate professor of medicine, and his colleagues looked at the effects of PN on critically ill calves. One randomized retrospective study examined 11 clinical cases, while the other, a controlled study, examined two groups of calves with diarrhea, one placed on PN, and one receiving conventional treatment, as a control group.

"The 11 calves studied, age four days to six weeks at hospital admission, received PN for three days or more", explained Dr. Divers. "All had diarrhea as their primary clinical sign. The diarrhea was believed to be due to Rota virus and Cryptosporidia in most of the calves. One calf was confirmed to have Bovine virus diarrhea; none were



found positive for *Salmonella sp.*"

Duration of diarrhea prior to hospital admission ranged from two to four days. Four of the calves could not stand at the time of hospital admission because of weakness. All calves had been housed in some type of outdoor "hutch" prior to hospitalization, eight of the cases were admitted to the hospital during the period of January to April.

Six of the animals had a fever at the time of admission or developed it within 24 hours thereof. Two calves had mild pneumonia and one could not suckle. Routine blood work was performed. The parenteral nutrition, formulated for each calf, was administered continuously into the jugular vein for a mean of 5.8 days (3 - 11 days). In addition the calves received milk, fed at two percent of their body weight,

divided into four feedings a day. Milk feedings were gradually increased to eight percent of body weight/day prior to discontinuing PN. All calves were offered oral electrolytes free choice. Calves also received antimicrobial drugs via the same catheter used for PN.

Of these calves nine survived and continued to do well after discharge from the hospital. Two calves died, one with BVD and one with peritonitis associated with an urachal infection. The calves gained weight on PN, those gaining weight most rapidly needed to be on PN for the shorter times.

In the other study calves less than three weeks of age with diarrhea were purchased from farmers. They were free of *Salmonella sp.* and were randomly assigned to one of two groups, one group was placed

Parents and Partners

Rain did not dampen the spirit of family members of the students of the Class of 1993. On Saturday, September 16 the School hosted 165 parents and partners of incoming freshman to provide an overview of the veterinary education at Penn. The morning session included topics on the curriculum, student financial aid and the small animal hospital's emergency service; tours of the hospital followed.

Following lunch and a pleasant bus ride to New Bolton Center, Dr. Elaine Hammel and Dr. James Orsini presented an overview of the large animal facility and conducted tours of the various buildings as well as bus tours of the grounds.

At the conclusion of the day, students rejoined their family members for conversation and refreshments.



on PN, limited milk feedings and electrolytes, while the other received milk feedings and electrolytes. All calves also received an antimicrobial drug for 14 days.

The survival rate for calves in both groups was the same, however, calves receiving PN had an increased weight gain and improved appearance and attitude than did the control group. Dr. Divers feels that parenteral nutrition appears to be an effective means of providing a large portion of the caloric needs to calves that cannot take appropriate amounts of milk orally.

"The amount of PN administered intravenously is probably only supportive for the sick calf as we don't know the exact metabolic needs of each sick calf," he said. "PN helps to prevent the skid so often seen in seriously ill young calves, and the feeding of some milk provides additional energy and protein along with vitamins and minerals and helps maintain intestinal enzyme activity."

Dr. Divers pointed out that the primary benefit of PN is seen in calves with enteric disease that do not have life-threatening diseases of other organs. He stressed that nursing care and a proper environment must be part of the PN treatment. It is not a treatment done easily in the field, rather it requires close monitoring and supervision to detect any changes in the status of the animal.

Parenteral nutrition for critically ill patients is used not only for calves, but also for foals at New Bolton Center as well as for the treatment of cats and dogs at VHUP. This technology, "borrowed" from human medicine, is saving countless lives, particularly when the patients are very young animals.

The field study of the effects of parenteral nutrition was done in conjunction with researchers from the University of Wisconsin and Baxter Laboratories.

Dr. Abt Appointed Marshak Term Professor

Donald A. Abt, professor of epidemiology and biostatistics at the University of Pennsylvania School of Veterinary Medicine, has been named the Robert R. Marshak Term Professor of Aquatic Animal Medicine and Pathology. The chair is the nation's first in aquatic animal medicine to be established at a veterinary school.

As holder of the chair, Abt has become the director of the Laboratory for Marine Animal Health (LMAH), a diagnostic laboratory established in 1981 by Penn and the New York State College of Veterinary Medicine at Cornell University that is a part of the world-renowned Marine Biological Laboratory (MBL) in Woods Hole, Mass.

Founded primarily to study diseases of marine animals used in research, the laboratory has increasingly been called upon to participate in investigations of environmental and ecological problems. It has described more than 40 previously unknown diseases affecting marine life since its inception eight years ago.

Abt, a graduate of Penn's Veterinary School who joined the faculty in 1961, is director of the AQUAVET program, an intensive introductory course in aquatic veterinary medicine in which the LMAH plays a vital role. The annual course, held at the MBL, covers a broad sampling of topics, ranging from ecology and anatomy of marine invertebrates to marine mammal health.

In announcing Abt's appointment to the Marshak chair, Edwin J. Andrews, dean of the Veterinary School, said, "It is most fitting that the individual who pioneered our AQUAVET program and the School's focus on aquatic animal medicine and pathology be awarded this honor. He brings to this position his enthusiasm for this specialty area, his encyclopedic knowledge of the School and, indeed, veterinary medicine across the nation."

Abt is a member of numerous professional organizations including the American Veterinary Medical Association, the United States Animal Health Association and the International Association for Aquatic Animal Medicine. He served on the research advisory board of the Institute of Environmental Medicine at Penn from 1978 until 1986 and the J.F. Kapnek Charitable Trust since 1985.

Phyllis Holtzman

Doris Boucher Honored

For almost half a century Penn's veterinary students have been the beneficiaries of Doris Boucher's baking and dessert making skills. Newly married in 1940 she and her husband Bill (V'40) opened their West Philadelphia home to students. Later, when the Bouchers moved to Upper Darby, their home became a focal point for the many students who came to the School during the war years.

"We had an open house Tuesdays and Sundays," reminisced Doris Boucher. "Students came over for dessert, we would talk and sometimes have jam sessions." When the Bouchers moved to Media in 1945 where Dr. Boucher headed the Ambulatory Service, senior students rotating through the service lived in the same house. In 1950 the Bouchers moved across the street, and here Dr. Boucher would hold oral case histories and once the work was out of the way, dessert was served and music was made. The tradition continued until 1984 at New Bolton Center where the Bouchers moved in 1967, here the interns were included in the Tuesday throng.

In 1981, when Dr. Boucher retired from the faculty, Doris began her Thursday bake sales at New Bolton Center. The funds raised through this activity are donated to the Doris and William Boucher scholarship fund.

Doris Boucher's dedication to generations of Penn Veterinary students was recognized by the Auxiliary to the Pennsylvania Veterinary Medical Association at the recent PVMA meeting held in Lancaster. During a special luncheon Auxiliary President Mrs. Janet H. Dougherty presented Mrs. Boucher with a water color of the Allam House, painted by Ruthe Guenther, wife of Fred R. Guenther (V'52). The Auxiliary also made a donation to Mrs. Boucher's cookie fund. The citation read "This is in recognition of your Cookie Sale Project at the Widener Hospital at New Bolton Center, for funds which you donate to be used for student loans. It is also in appreciation of your many years of hospitality for staff and students of the Veterinary School of the University of Pennsylvania. You have been a true helpmate to your husband and his profession."

When Mrs. Boucher and her husband set out for Lancaster on October 14, she had no idea that she was to attend a luncheon in her honor. "I thought Bill was taking me to an antique show as part of a birthday celebration. Imagine my surprise when I was whisked into the room and found myself as the honoree. It was a wonderful surprise!"



Mrs. Boucher and Mrs. Ruthe Guenther with water color presented to Mrs. Boucher by the Auxilliary to the PVMA.