Pioneering Hemodialysis

Clinicians from the UC Davis School of Veterinary Medicine were among the first in the country to perform hemodialysis on companion animals in the 1970's. In 1990, the first veterinary clinical program dedicated to providing hemodialysis was established within the School. It is considered to be the premier veterinary hemodialysis program in the world.

UC Davis Veterinary Hemodialysis is the only program in the world providing professional training in this field.

- Clinicians established the first training program for hemodialysis in 1993, with the development of a two-year fellowship program, available to candidates who had completed their certification in internal medicine.
- Established a one-year international internship training program in 2000.
- Organized an international hemodialysis round table, held twice a month, that's delivered over the internet. Prominent leaders in hemodialysis "meet" virtually to discuss cases, new treatments and problems, and explore the future of the field.
- Launched an international, on-line hemodialysis academy offering extensive training. Students receive 100 lecture hours devoted to all levels of extracorporeal therapies, and participate in a weekly round session. Dialysis treatments at the UC Davis veterinary teaching hospital are streamed live to allow students to observe the procedures and ask questions.

Saving lives – Utilizing modern hemodialysis technology and techniques, clinicians provide safe, effective therapies for the management of an often life-threatening health crisis in dogs and cats such as:

- Severe acute or chronic renal failure
- Acute poisoning
- Severe over hydration, electrolyte derangements and acid-base disturbances
- Conditioning for kidney transplantation

Diverse species – While clinicians serve primarily dogs and cats, they also attend to a wide range of patients, including horses, rabbits, sheep and even a tortoise. These different species have been successfully managed with innovative modifications to procedures and equipment devised for human application.

Advancing the field

- Researchers have developed and patented a new device that can be used as an adapter to a human dialysis machine, allowing veterinary clinicians to perform very slow, very precise treatments on small patients. The device also has exciting human health implications, as it can be attached to existing machines to perform dialysis on newborn infants.
- Scientists are exploring opportunities to develop a home dialysis machine for animal patients. This

would provide hope and a potentially economically viable option for owners of pets that have chronic kidney failure.

Pioneers of equine hemodialysis - Our program was the first in the world to dialyze and perform therapeutic plasma exchange on a horse.

Cutting-edge techniques

- One modern therapy offered to patients is called hemoperfusion, where the patients' blood is run directly over materials that can bind abnormal substances in the blood and remove them. This therapy is often utilized for poisonings.
- Clinicians now utilize a state-of-the-art blood purification procedure called therapeutic plasma exchange (TPE) on their animal patients. The procedure, used for decades in human medicine to manage a variety of disorders, is a process by which plasma contaminated with damaging antibodies, toxins or abnormal proteins is separated from the patient's flowing blood and exchanged with donor plasma that is returned to the patient to render the patient less susceptible to, or free from immunologic attack or other pathologic processes. To date, TPE has been used on more than a dozen dogs and one horse.