

James Harlan Steele, Public Health Pioneer

Unidentified Speaker: Most of us don't spend much time thinking about the relationship between animals and people, but over the centuries we have relied on each other for food, transportation, labor, sporting events, and companionship. Today, those relationships are probably safer than ever before. But this hasn't always been the case. As far back as Greek civilization, people recognize that animals and humans shared certain diseases. In fact, the word Zoonosis, which generally means diseases transmissible from animals to man, comes from the Greek "zoo" for animal, and "nosis" for disease. Originally, it probably describe rabies, an ancient disease which is still a zoonotic threat in some areas of the world. Veterinary medicine evolved out of the need to treat diseases and injuries of animals, but because more than 100 animal diseases, or infections, are potential threats to man, veterinary public health has had a substantial impact on human health. Even when diseases are confined to animals, for example, when they affect meat and dairy herds, they can have devastating consequences on the economy and the food supply, especially in developing countries. In the U.S. at the beginning of the 20th century, Bovine tuberculosis in dairy herds was one of the major causes of an unsafe milk supply, and in recent years, salmonella and ecoli have been among the Zoonoses resulting in major outbreaks of foodborne diseases. James Harland Steele was instrumental in joining the forces of veterinary medicine

and public health. This new concept reduced the number of zoonotic diseases affecting populations in the U.S. and abroad. Today, veterinarians are involved in preventing bioterrorism and investigating the mechanism of drug resistance. They conduct studies in the areas of parasitology, microbiology, virology, and bacteriology, and they monitor the safety of the food supply from farm to table. But when Jim Steele introduced the concept of combining the fields of veterinary medicine and public health, even his use of the term zoonotic was new to many.

James Steele: The people that listened to me they kind of smiled and joked about it, and said, “Zoo what?” It was a foreign term to them, and it was one that they weren’t familiar with. So that was the beginning of my use of the term “Zoonoses” and also zoonotic diseases.

Unidentified Speaker: Jim Steele has spent his professional life as a Public Health Veterinarian and a public health servant. Not only has Jim been involved with the sanitation of meat, dairy, and poultry products, but also with disease outbreaks and Zoonoses all over the world. His career at the U.S. Public Health Service and at the University of Texas School of Public Health, has taken him around the globe many times. Jim is still in demand as a consultant, speaker, author, and problem solver. Jim Steele was one of two children born to Lydia Nordquist Steele, a Swedish immigrant, and James Han Steele, a dentist practicing in Chicago. Jim remembers as a child, during the 1918 flu epidemic, which coincided with the waning days of World War I, that

he couldn't understand how we could be beating the Germans, but the germs were killing the Americans. Growing up in Chicago, Jim attended local schools and YMCA College. He sold insurance, considered forestry, and was told he could make more money painting houses than pursuing a career in veterinary medicine. Jim was admitted to the Veterinary Medicine program at Michigan State University. His interest in zoonotic diseases began when 50 of his classmates were stricken with brucellosis, one fatally. A part-time job at the University's Health Department Laboratory allowed Jim to learn more about the spread of disease from animals to humans. In 1941, Jim completed his Doctor of Veterinary Medicine degree and married Ina Oberg. Within six months of their marriage, Ina was diagnosed with tuberculosis; a disease she would battle for the rest of her life. Jim went on to earn his Masters of Public Health at Harvard, where he was the only veterinarian in a class of MD's. Upon graduation, he was discouraged to learn that nearly all job postings required an MD degree, which he considered pursuing until a Harvard Dean convinced him otherwise.

James Steele: He said, "Steele, it's quite apparent," he said, "Why don't you fly under one flag?" And that was the best advice I ever got. That was the beginning.

Unidentified Speaker: During World War II, Jim was commissioned as a U.S. Public Health Service Officer and worked on food surveillance and food safety programs for areas impacted by the war. At the close of the war, Jim was

challenged by Dr. Joe Mountain, a mentor during much of his professional career, to define what veterinarians could do for public health in the aftermath of the war.

James Steele: I came back with a report of some length and a list of maybe 50, 60 different diseases that had affected animals as well as humans, and as he went through, Dr. Mountain looked at them and started asking questions. He said, “What do we do about this one?” And I had no specific answers. I was truly lost for a positive approach in saying what’s the best way at getting at it, and as we went through this paper, he said to me, “Steele, it’s quite apparent, we got a lot of ignorance. Let’s exploit it.” So then he said, “Well, go out and see how you can sell this and if you get any trouble, don’t come back.”

Unidentified Speaker: The time was right. Jim responded to a rabies outbreak in Memphis, Tennessee, where he successfully cordoned off the affected area, vaccinated 75 percent of the animals, and stopped the outbreak. This led to a national rabies control program, the first anywhere in the world, and then to a worldwide rabies control initiative that still serves as the model for U.S. and international programs.

Craig Carter: Probably the most classic Zoonoses there is, is rabies, you know. We have the disease in animals, we get exposure, man gets infected, man usually dies. At that time, there were no programs in place to approach how do you control an outbreak of rabies in any part of the United States or in any part of the world? So again, virgin ground. Jim Steele was there and he put

together the model of a response to a rabies outbreak that is still in use all over the world today.

Dana Wiltz-Beckham: At this present time, rabies has been on a decline, when you compare it in the past 100 years, in the state of Texas. However, for the year of 2001, we're seeing an increase in the number of terrestrial animals, in particular skunks, with the rabies virus. However, for dogs and cats and domestic animals, it has been on a decline.

Unidentified Speaker: During the post war period, Jim served as a consultant to the U.S. Surgeon General, and established the veterinary programs in the both the World Health Organization and the Food and Agriculture Organization. He initiated the first public health section of the American Veterinary Medical Association. Jim's first national exposure as a public health expert occurred as a result of an outbreak of foot and mouth disease in Mexico. Jim was happy to report back to the Surgeon General, and then to Congress, that the disease posed no threat to humans. In 1947, Jim's recommendation for the establishment of a Veterinary Public Health Division of the U.S. Public Health Service was accepted. He was named Chief of the division and assigned to the Center for Disease Control in Atlanta. His position allowed him to encourage the development of veterinary public health tracts in veterinary schools across the country.

Leon Russell: I can still remember the guide he put together with the various zoonotic diseases, very succinct, very easy to read guide. Had 200 zoonotic

diseases in there, and those were available to the schools and students, and it made it easy to show the students importance through the materials. And of course he also worked very closely with some of the leaders in scientific field. For example, *(inaudible) and even things like botulism. Those were pioneers and he took the work those people did and supported it, and got that into our classrooms. Gosh, there are so many things they did, and he did, through *(inaudible) educational materials.

Unidentified Speaker: Former CDC Director, David Sencer, said Steele, whom he referred to as “Big Jim,” was “a pioneer in expanding the role of veterinary medicine.

David Sencer: He was a wonderful entrepreneur, and promoting concepts, and bringing people together. He brought the concept of the use of the laboratory as a surveillance tool, particularly in foodborne disease, he and Mildred *Gaulton. I think he was a leading force in establishing an association of public health veterinarians. If I could point to one thing that Jim was responsible for, I think it is getting the concept that the veterinarian is not just a person that deals with animals, but deals with a broad concepts of health. Jim was a stimulator.

James Steele: The motion picture you are about to see is an introduction to the disease *(inaudible), a malady of man and animal. There are some 60 different *(inaudible)--

Unidentified Speaker: His appointment to the Center for Disease Control allowed him to investigate disease outbreaks in the U.S. and foreign countries. He has served as an expert speaker on milk hygiene, rabies, trichinosis, and brucellosis. His office produced a number of educational films to alert both professionals and the public to the dangers of a number of zoonotic diseases. In 1950, Jim became the Chief Veterinarian Officer of the U.S. Public Health Service and Advisor to the Surgeon General. He was also named to the Editorial Board of the APHA Handbook of Control of Communicable Diseases, a position that he holds to this day. Between 1950 and 1968, Jim represented the U.S. at the World Health Organization conferences in Athens, Geneva, Manila, Tehran, and Nairobi, just to name a few. He has been an author or advisor on more than a dozen prominent national health publications. Since 1978, Jim has served as a Visiting Professor at universities in several countries, including the United States, Canada, South Africa, Nigeria, and Germany. In 1968, Jim was named Assistant Surgeon General for Veterinary Affairs. He also was appointed to the President's Commission on Consumer Affairs, a position he would hold for the next 20 years. The following year, Jim and Brigitte Myers-Steele, his second wife, were married. Upon his retirement from the U.S. Public Health Service, Jim was recruited by the University of Texas School of Public Health. He directed the Environmental Science discipline there until 1978. During those years, and even after he was appointed Professor Emeritus in 1983, he continued to add publications to his already long list. His most

notable publishing accomplishment may be founding and serving as Editor in Chief of the CRC Handbook of Zoonoses, an eight-volume set regarded as the bible in its field.

Cynthia Chappell: He brought zoonotic diseases and the public health consequences to the University. He is a wonderful and important link to the past. He tells us regularly why we're doing the things we're doing, and what that was based on, where those ideas and knowledge came from. He really opened up that whole area and it is one that is thriving here at University of Texas School of Public Health. Without him I don't think that might have happened.

Unidentified Speaker: One of his long time friends, Dr. Konrad Eugster, said Jim always pushed the envelope to achieve success.

Konrad Eugster: I heard that this may be good for your health. Jim always says, "Where's the scientific evidence? Where are the data?" And he keeps reminding me, to date, you know, if you think this disease may cause a problem in cows, well, "Where are the data, Konrad?" So he's constantly an influence on me. Today as much as he was before, and so he truly is a giant.

Unidentified Speaker: Continuing his long held interest in food safety, Jim lectures and publishes widely on the topic of food irradiation. He is convinced that incorporating this process into food handling will reduce or eliminate the risk of bacteria and parasite contamination of food. He notes that irradiation would have prevented the ecoli hamburger outbreak, which caused 300

illnesses and 3 deaths in the early 1990s, and he points out that the objections to irradiation are similar to those that greeted pasteurization, canning, and freezing. All processes that today are recognized for their contributions to food safety and the health of the public.

James Steele: In this country, you've got to realize, this year we'll be producing something like eight billion chickens. Well, what's the opportunity for infection in all this? That leads to me to say radiation is the way to go. You're not going to pasteurize them by heat. You're not going to freeze them then kill them. You've just got a multiplicity of organisms there that are growing out because of the opportunity. I like to, when I lecture in class, I'd say, "All organisms great and small, man, animals, bacteria, are always looking for perpetuation. They're seeking social security where they can survive."

Unidentified Speaker: Jim Steele's contributions to public health can be summed up from the citation that accompanied his 1963 U.S. Public Health Service Meritory Service Award. The citation recognized his outstanding contributions in the field of public health, and went on to state that his imagination, vision, and leadership have had a tremendous impact upon activities for preventing human disease in this country and throughout the world.