

## **THE MISSING LINKS BETWEEN THE VETERINARY AND MEDICAL FIELDS IN SAUDI ARABIA**

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The field of veterinary practice in Saudi Arabia had a major boost in 1975 with the establishment that year of the College of Veterinary Medicine and Animal Resources at King Faisal University (Al-Ahsa). Initially starting off with about a dozen students, the number of enrolled students today exceeds 300. The College has a unique public veterinary hospital in the Gulf area, in addition to outpatient clinics of internal medicine, obstetrics and gynecology, infectious diseases, fish and poultry diseases, and several diagnostic laboratories, such as toxicology and forensic medicine, virology, bacteriology, parasitology and clinical biochemistry. The major pre-clinical departments are anatomy, physiology, pharmacology, biochemistry, microbiology and parasitology.

The task of deepening the roots of veterinary research and practice in Saudi academic institutes and the animal production industry was seen as a prime goal of the Veterinary College. To meet its main goals in developing research in veterinary science, the College has established a camel research center and veterinary sciences and animal production research center. Although the field of veterinary science at King Faisal University dates to approximately two decades, its experience and accomplishments have been immense. Over the past 20 years, the College has been granted 25 comprehensive research projects including postgraduate research from King Abdulaziz City of Science and Technology (KACST) with a total budget exceeding 18 millions Saudi riyals (approximately \$4.8 million). As a result, various scientific publications have been published by the College of Veterinary Medicine, King Faisal University and the Department of Veterinary Science, College of Agriculture at King Saud University, Qaseem branch. Recently, Almarai Company, one of the largest dairy companies in the Kingdom instituted the Almarai Award to encourage scientists in the veterinary field and to reward the most innovative work in the veterinary and animal production fields.<sup>1</sup>

In the developed world, veterinary and medical sciences, which have progressed concurrently, have utilized the natural ties between these two fields to build strong reciprocal ties. Scientists in Saudi Arabia should not miss the opportunity of benefiting from such natural ties between the veterinary and medical sciences. Efforts should be made to establish channels between the two fields, which are bound to bring many advantages for the country in general.

The many natural ties between the two fields in Saudi Arabia are not hard to envisage. For instance, both fields share common grounds in basic medical sciences. In the clinical area, zoonotic diseases, autoimmune diseases, genetic disorders and pathophysiological disorders comprise wide areas of research and practice that could enrich both fields through reciprocal cooperation. The last outbreak of Rift Valley fever in the Southern region was a natural appeal for accelerating the cooperation between the two fields.

Unprecedented advances in research in veterinary sciences have opened new frontiers in medical sciences. The development of vaccines for Marek's disease in chicken, and the overwhelming data generated in the study of the immunopathology mechanisms of this oncovirus were considered invaluable resource in oncovirology studies.<sup>2</sup> In addition, immunovirology studies considered chicken immune system to be the most suitable model for exploiting the immunovirology mechanisms.<sup>3</sup> These advances in research should prompt scientists in both fields to engage in productive and advanced research in Saudi Arabia.

The missing links between the two fields are clearly a result of two important factors: the first is the lack of knowledge about the veterinary field among the medical sector, and the second is the incomprehensible barriers posted by dogma in medical institutions in Saudi Arabia. The former factor is basically due to the lack of appreciation of the essence of veterinary discipline to the medical sector. It is probable that those who established the pillars of veterinary institutions in the Kingdom have not adequately explained and promoted their relevance in the medical field. The latter factor involves barriers that have interfered with facilitating the links between the two fields. The interference was due to certain dogmatic approaches to medical issues by policy makers. It appears that the association of veterinary sciences with animals was the prime reason for classifying veterinary sciences and veterinarians in the most inferior groups of medical science. The country's development and future advancement should not be thwarted by personal views of unbalanced emotions. It is the responsibility of every scientist in this country to use whatever means at his or her disposal to pave the way for the harmonization of the efforts, expertise and constructive thoughts in lifting medical research and

disciplines to the highest possible level of science and technology.

It is obvious that the missing links between the two fields have dramatic and irreversible consequences on our national financial and human resources. An elaboration of some of these consequences could provide a better insight. Classifying these consequences in three major groups would be helpful for organizing the readers' thoughts. These are:

1. Epidemiology
2. Diagnosis and Research
3. Teaching and Training

### **Epidemiology**

Epidemiology of zoonotic diseases is one of the most vital and critical areas that require an immediate bridging between the two fields. In a study on the role of physicians and veterinarians in the prevention of zoonotic diseases, physicians indicate that veterinarians ought to play a greater role in this campaign.<sup>2</sup> The picture of contemporary zoonotic epidemiology, whether related to availability of database or contingency plan to combat contagious outbreaks is inevitably chaotic for researchers and clinicians in both fields. It is due to such deficiencies that thwart efforts in tackling endemic zoonotic diseases such as brucellosis, and hamper preparations for outbreaks such as the Rift Valley fever.

### **Research and Diagnosis**

Research and diagnosis represent the most important areas that demand cooperation between the two fields. Continued lack of cooperation could result in immense loss of financial and human assets. For instance, researchers in both fields whose disciplines overlap could avoid duplication of effort in common problems and have a wider approach in their research projects. Research links between the two fields could provide the flexibility in the veterinary field to help attain certain advantages, such as the development of animal models and/or *in vitro* system for the study of physiological or pathological conditions of common interest, and the training of technicians to gain expertise for research laboratories.

Rapid and accurate diagnosis, particularly in infectious diseases, is crucial in combating these diseases. Both fields are required to invest their efforts in building a solid infrastructure in this crucial field. Joint diagnostic programs, especially in zoonotic diseases are the most desired. In addition to joint diagnostic programs, both fields should cooperate continuously to establish a reference laboratory to study local and regional viruses and bacterial strains. Fortunately, the College of Veterinary Medicine has established over the last 20 years, an invaluable collection of viruses and bacterial isolates that could be used as a core of the suggested laboratory.

A reference laboratory is vital for rapid diagnosis particularly in the Kingdom, which hosts millions of Muslims at the Hajj pilgrimage season every year. Health and preventive services encounter immense problems in tackling the health risks that arise during the Hajj, such as influenza outbreak. A reference laboratory is one of most the vital tools in any healthcare preventive plan.

### **Teaching and Training**

Teaching and supervision of undergraduate and postgraduate students is another important channel of effective links between the two fields. Medical and veterinary schools in the United States and other developed countries have presented a peculiar model of joint teaching and training programs in medical and veterinary studies. In addition to its role in merging the departments, the model stimulates undergraduate and postgraduate programs that helps to broaden the focus of the medical and veterinary disciplines. Through this cooperation model, these schools have achieved depth, sophistication and proficiency in their various disciplines that would not have been possible if each discipline were acting alone. The Saudi medical and veterinary schools need to utilize such a model to remove barriers and embark on joint efforts in establishing uniform programs for both undergraduates and postgraduates. The benefits of the proposed channels of cooperation will remain unrealized unless serious efforts are made on the following:

1. Establishing a joint committee of deans of medical and veterinary schools or their representatives to create the necessary environment for active reciprocal cooperation.
2. Establishing a committee that includes the Ministries of Higher Education, Agriculture and Health to regulate and supervise the channels of cooperation.

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