

Prof.Dr.Mahendra Pal contribution in Veterinary Public Health

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According to the World Health Organization the Veterinary Public Health is defined as, “The sum of all contributions to the complete physical, mental and social well-being of humans through an understanding and application of veterinary medical science” [4]. It is believed that concept of veterinary public health originated in Egypt, when the healer priests mentioned that there is no difference between caring for human patients as well as animals. Further, they acquired great knowledge from the anatomy and diseases of animals, and applied to the healing of human beings [3]. Several distinguished veterinarians including Dr. Martin Kaplan, Dr.Karl F. Meyer, Dr.Calwin W.Schwabe, Dr. James H. Steele and others contributed a lot for the development of veterinary public health [1]. Now, veterinary public health is a well established discipline, which focuses on many issues of public health, such as diagnosis and control of zoonoses, epidemiological studies on zoonoses and foodborne diseases, production of safe, wholesome and hygienic foods of animal origin, identification and assessment of chemical hazards, use of biological for the prevention of infectious diseases etc. [1]. Recent years have witnessed outbreaks of several zoonoses like Nipha virus, Hendra virus, Hanta virus, Ebola virus, monkey pox, Rift Valley fever, melioidosis, Japanese encephalitis, plague, West Nile fever, swine flu, yellow fever, H5N1 avian influenza, bovine spongiform encephalopathy, and severe acute respiratory syndrome from many regions of the world [1].

In India, the credit goes to Dr. C.M. Singh who for the first time established the Division of Veterinary Public Health at Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh. The Master degree programme in the veterinary public health was launched in 1970 at All India Institute of Hygiene and Public Health, Calcutta. Presently, the department of veterinary public health is functioning in all the veterinary colleges in India. The specialists in the veterinary public health are working on zoonoses, food safety etc. Currently, over 300 zoonoses are recognized as a significant cause of morbidity as well as mortality in humans and animals, and are reported from developing and developed nations of the world [1]. It is pertinent to mention that 61 % of all human infections are zoonotic; and 80% of bioterrorist agents are zoonotic and can be used as biological

weapons [2].

Prof. Dr. Mahendra Pal is a well known Indian legend in Veterinary Public Health who worked on many zoonotic diseases and foodborne pathogens. He took a great initiative to start Ph.D. programme in veterinary public health at College of Veterinary Science, Anand, India, and also was instrumental to launch at Addis Ababa University, Ethiopia. Prof. Pal restructured the syllabus of veterinary public health in India and Ethiopia. He has over 612 publications and 9 books to his credit. His book on “Zoonoses” first published in 1997 and again in 2007 was highly appreciated by veterinary and medical professions. He has published papers on brucellosis, dermatophytosis, rabies, tuberculosis, leptospirosis, echinococcosis, aspergillosis, cryptococcosis, geotrichosis, candidiasis, zygomycosis, nocardiosis, dermatophilosis, scabies, swine flu, monkey pox, glanders, foot and mouth disease, goat pox, anthrax, plague, Rift Valley fever, West Nile fever, salmonellosis, protothecosis, chlorellosis, toxoplasmosis, cat scratch disease, coxiellosis, buffalo pox, chlamydiosis, scrub typhus, Japanese encephalitis, contagious ecthyma, coccidiomycosis, histoplasmosis, sporotrichosis, dengue fever, leprosy, lymphocytic choriomeningitis, ascariasis, linguatuliiasis, Eastern equine encephalitis, Zika fever, Crimean Congo haemorrhagic fever, severe acute respiratory syndrome, Rotaviral gastroenteritis, Streptococcus suis, Cyclospora cayetensis, Streptococcus pyogenese, Listeria monocytogenes, Staphylococcus aureus, Cryptosporidium parvum, Campylobacter jejuni, Vibrio parahaemolyticus, Escherichia coli 0157:H7, Aeromonas hydrophila, Yersinia enterocolitica, Cronobacter sakazakii etc.

Prof. Pal had an opportunity to work at Messy University, Palmerstone North, New Zealand, Institute of Tropical Medicine, Antwerp, Belgium, Faculty of Veterinary Medicine, Tokyo University, Japan, and College of Veterinary Medicine, Addis Ababa University, Ethiopia; and delivered many guest lectures in India and other foreign countries. He guided over 67 students at DVM, MVSc, MSc, and Ph.D. level in India and Ethiopia. Prof. Pal established for the first time the prevalence of Cryptococcus neoformans in the environment of New Zealand, Nepal, and Djibouti, and also elucidated the etiologic role

of *Trichophyton verrucosum* in dermatitis of deer, and *Candida tropicalis* in human lung empyema. He has developed sunflower seed medium (Pal medium), APRM medium, PHOL stain, and Narayan stain for the studies of fungi implicated in many clinical disorders of humans and animals. His work is frequently cited by many scientists in their textbooks, research papers, reviews, and monographs. Prof. Pal is associated in the editorial board of over 120 online peer reviewed journals. He received several awards including Distinguished Teacher Award, Life Time Achievement Award, and International Achievement Award. Presently, his papers are read by over 270000 scientists and academicians of 170 nations. Very recently, the Indian Association of Veterinary Public Health Specialists (IAVPHS) has instituted an award in the name of Prof. Pal to remember and honor his outstanding, immense, commendable, significant, and pioneer contributions in Veterinary Public Health. The name of award is “Prof. Mahendra Pal Zoonoses Award”, which is given every year during the National Conference of Veterinary Public Health to any scientist, whose research is judged the best by the panel of Experts in the field. Prof. Pal is serving as Honorary Adviser to several institutes for the development of Veterinary Public Health. His comprehensive and systematic work in the last 47 years on the epidemiology and diagnosis has helped the scientists to develop strategies for the control of zoonotic diseases, which are of global importance from public health and economic point of view. Prof. Pal has launched “Narayan Consultancy” on Veterinary Public Health to give free technical advice to scientists particularly belonged to poor resource countries of the world

There is a need to establish “Zoonoses Control Committee” throughout the world so that specialists from multiple disciplines, such as veterinary, medical, public health, epidemiology, ecology, wild life, environment, agriculture etc. can periodically discuss the issues related to the emergence and re-emergence of zoonotic disease in any area of the world that pose a serious threat for human health. It is emphasized that Public Health Veterinarians must be appointed at Municipal, State, National, and International level in order to achieve One Health programme.

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