FACULTY PROFILE

Mohammad A. Alkhamis, DVM, MPVM, PhD

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Professional Summary

Moh A. Alkhamis, DVM, MPVM, Ph.D., is an Assistant Professor (on full secondment), Epidemiology and Biostatistics at the School of public health at Kuwait University. His current activities involve development and teaching of courses in the area of epidemiology and statistics for the Faculty of public health. His current research activities focused in following areas: Evolutionary epidemiology of infectious diseases using Bayesian phylodynamic methods, Spatial epidemiology and disease mapping methods, and applications of novel quantitative methods in surveillance of communicable and non-communicable diseases.

In the past decade, Dr. Alkhamis worked with several OIE and FAO world reference laboratories in the USA and European Union member states analyzing surveillance data, with particular emphasis on transboundary infectious viral diseases. He had an active role in the development novel web-based systems for near-real-time surveillance of infectious diseases, including Disease Bioportal in the University of California Davis and SAVI at the University of Minnesota. Dr. Alkhamis is also an adjunct assistant professor of quantitative epidemiology in the Department of Population Health, School of Veterinary Medicine at the University of Minnesota (Twin Cities), where he is involved in several teaching activities, research grants (as co-PI and co-Investigator) and co-supervising Ph.D. and Master students. He is research with the University of Minnesota focused on Disease Big data analytics and surveillance of animal infectious diseases of national threats to both local and global food industries. Just within the last two years, Dr. Alkhamis published 15 peer-reviewed research articles (including two in Nature Scientific Report; Impact factor < 5) with a leading authorship role in most of them. Dr. Alkhamis is also an associate editor in the open access journal Frontiers in Veterinary Sciences, Section Veterinary Epidemiology and Economics and reviewer for nine peer-review international journals (Including PloS Computational Biology and Nature Scientific reports).

Education and Training

- P.h.D, Epidemiology, quantitative methods, University California Davis, Health Science Center, 2014
- M.P.V.M, School of Veterinary Medicine, Health Science Center, University California Davis, 2009
- D.V.M, School of Veterinary Medicine and Animal Resources, King Faisal University, 2004

Research Interests and Projects

Dr. Alkhamis current research interests and projects are focused on the areas of evolutionary epidemiology of infectious diseases, spatial epidemiology and disease mapping, applications of novel quantitative methods in surveillance of communicable and non-communicable diseases, health and disease big data, and development of early warning systems for disease surveillance, prevention and control.

Selected Publications

Alkhamis MA, Moore BR, Perez AM. 2015. Phylodynamics of H5N1 Highly Pathogenic Avian Influenza in Europe, 2005-2010: Potential for Molecular Surveillance of New Outbreaks. Viruses 7:3310-3328.

Alkhamis M, Hijmans RJ, Al-Enezi A, Martinez-Lopez B, Perea AM. 2016. The Use of Spatial and Spatiotemporal Modeling for Surveillance of H5N1 Highly Pathogenic Avian Influenza in Poultry in the Middle East. Avian Dis 60:146-155.

Alkhamis MA, Perez AM, Murtaugh MP, Wang X, Morrison RB. 2016. Applications of Bayesian Phylodynamic Methods in a Recent U.S. Porcine Reproductive and Respiratory Syndrome Virus Outbreak. Front Microbiol 7:67.

Alkhamis MA, VanderWaal K. 2016. Spatial and Temporal Epidemiology of Lumpy Skin Disease in the Middle East, 2012-2015. Front Vet Sci 3:19.

Belkhiria J, **Alkhamis MA**, Martinez-Lopez B. 2016. Application of Species Distribution Modeling for Avian Influenza surveillance in the United States considering the North America Migratory Flyways. Sci Rep 6:33161.

Alkhamis MA, Arruda AG, Morrison RB, Perez AM. 2017. Novel approaches for Spatial and Molecular Surveillance of Porcine Reproductive and Respiratory Syndrome Virus (PRRSv) in the United States. Sci Rep 7:4343.

Arruda AG, **Alkhamis MA**, VanderWaal K, Morrison RB, Perez AM. 2017. Estimation of Time-Dependent Reproduction Numbers for Porcine Reproductive and Respiratory Syndrome across Different Regions and Production Systems of the US. Front Vet Sci 4:46.

Ekong PS, Fountain-Jones NM, **Alkhamis MA**. 2017. Spatiotemporal evolutionary epidemiology of H5N1 highly pathogenic avian influenza in West Africa and Nigeria, 2006-2015. Transbound Emerg Dis doi:10.1111/tbed.12680.

Willeberg PW, **Alkhamis M**, Boklund A, Perez AM, Enoe C, Halasa T. 2017. Semiquantitative Decision Tools for FMD Emergency Vaccination Informed by Field Observations and Simulated Outbreak Data. Front Vet Sci 4:43.

Alkhamis MA, Arruda AG, Vilalta C, Morrison RB, Perez AM. Surveillance of porcine reproductive and respiratory syndrome virus in the United States using risk mapping and species distribution modeling. Preventive veterinary medicine. 2017. Epub 2017/11/25. doi: 10.1016/j.prevetmed.2017.11.011. PubMed PMID: 29169685.

Professional Affiliations

- Associate Research Scientist, Environmental and Life Sciences Research Center, Kuwait Institute for Scientific Research (2014-Present).
- Adjunct Faculty— University of Minnesota, Department of Population Health, School of Veterinary Medicine (2015-present).
- Associate editor in the open access journal Frontiers in Veterinary Sciences, Section Veterinary Epidemiology and Economics Member (2015-present).
- Reviewer for Global Health Research and Policy, Nature Scientific Reports, PLoS ONE, PLoS Computational Biology, One Health, Epidemiology and Infection, Preventive Veterinary Medicine, Zooneses and Public Health, Research in Veterinary Sciences. (2012- present).