

University of Prince Edward Island

Faculty of Veterinary Medicine  
Summary of Dissertation

Submitted in Partial Fulfilment  
of the Requirements for the

## **DEGREE OF DOCTOR OF PHILOSOPHY**

Karen Ann MacDonald-Phillips  
Department of Health Management

### **Supervisory Committee**

Dr. J McClure (Chair)  
Dr. Shawn McKenna  
Dr. Greg Keefe  
Dr. Darcy Shaw  
Dr. John VanLeeuwen

### **Examination Committee**

Dr. Luke Heider, Chair  
Dr. Darcy Shaw  
Dr. John VanLeeuwen  
Dr. Caroline Ritter  
Dr. Karin Orsel (External)

## **Program Outcomes Of A Voluntary Johne's Disease Control Program With A Focus On Adherence To Management Plan Recommendations And Veterinary Communication Skills**

The Atlantic Johne's Disease Initiative (AJDI) was a voluntary Johne's disease (JD) control program for dairy cattle in Atlantic Canada. The aim of this research was to enhance JD prevention and management.

The AJDI was launched in 2011 as a 3-year risk assessment-based program. Seventy percent of the region's 664 herds enrolled in the AJDI. The herd apparent prevalence was 26.5% and apparent within-herd prevalence was 5.5%.

JD risk assessment by AJDI-certified veterinarians indicated that existing management practices had moderate potential to spread infection. After one year of participation in the AJDI, JD risk assessment showed improvements in management practices that were statistically significant. However, producers' self-assessed adherence rating indicated fair adherence and certified veterinarians' adherence rating indicated slight adherence. Satisfaction with the risk assessment and management process was high among 133 AJDI producers surveyed using a satisfaction questionnaire.

This study used theory of planned behaviour framework to design a questionnaire to elicit and measure behavioural intent of cow managers. A total of 68 cow managers completed in-person questionnaires. On average, cow managers had moderate positive intent to utilize strategies to prevent and control JD. Strengthening either behavioural beliefs or control beliefs towards JD were associated with increased likelihood that cow managers intended to utilize strategies to prevent and control JD.

A communication skills training workshop was developed as an intervention to support the AJDI. Twenty food animal production medicine veterinarians and senior veterinary students

participated in a pre-post intervention design. Study results showed that prior to training, communication skills of participants had significant limitations, including skill deficits in communication tasks associated with adherence.

Communication skills of participants significantly improved with the training provided. Rater training and experience was important to facilitate fair assessment of communication skills.

This research offered new information to assist in JD prevention and control.

### **Publications**

MacDonald-Phillips, K. A., McKenna, S. L. B., Shaw, D. H., Keefe, G. P., VanLeeuwen, J., Artemiou, E. and Adams, C. L. 2021. "Communication Skills Training and Assessment of Food Animal Production Medicine Veterinarians: A Component of a Voluntary Johne's Disease Control Program." Manuscript submitted for publication.

MacDonald-Phillips, K. A., Keefe, G. P., VanLeeuwen, J., Shaw, D. H., McClure, J and McKenna, S. L. B. 2021. "Dairy Producer Satisfaction and Knowledge Transfer with the Veterinary-Administered Risk Assessment and Management Plan in a Voluntary Johne's Disease Control Program." Manuscript submitted for publication.

Hamm, N.C., Robitaille, C., Ellison, J., O'Donnell, S., McRae, L., Hutchings, K., Rochette, L., Phillips, K.A.M., Azimae, M., Stang, M.R., Puchtinger, R., McCallum, M., Yang, A., Squires, J., Liu, Y., Svenson, L.W., Shibley, F., Amatya, A., Zhang, B., Ayles, J., and Lix, L.M. 2021. "Population Coverage of the Canadian Chronic Disease Surveillance System: A Survey of the Contents of Health Insurance Registries Across Canada." Health Promotion and Chronic Disease Prevention in Canada – Research, Policy and Practice. 41(7/8) (July/August 2021).

Hamm, N.C., Pelletier, L., Ellison, J., Tennenhouse, L., Reimer, K., Paterson, J.M., Puchtinger, R., Bartholomew, S., Phillips, K.A.M. and Lix, L.M. 2019. "Trends in Chronic Disease Incidence Rates from the Canadian Chronic Disease

Surveillance System." Health Promotion and Chronic Disease Prevention in Canada – Research, Policy and Practice. 39(6/7): 216-224.

McNally, K., Noonan, L.L., Cameron, M., Phillips, K.A.M., Baidooonso, S. and Sabapathy, D. 2019. "Public Awareness of Low-Risk Alcohol Use Guidelines." Health Promotion Practice. 20(6).

<https://doi.org/10.1177/1524839918781527>.

Lix, L.M., Ayles, J., Bartholomew, S., Cooke, C.A., Ellison, J., Emond, V., Hamm, N.C., Hannah, H., Jean, S., LeBlanc, S., O'Donnell, S., Paterson, J.M., Pelletier, C., Phillips, K.A.M., Puchtinger, R., Reimer, K., Robitaille, C., Smith, M., Svenson, L.W., Tu, K., VanTil, L.D., Waits, S. and Pelletier, L. 2018. "The Canadian Chronic Disease Surveillance System: A Model for Collaborative Surveillance." International Journal of Population Data Science. 3(3):5.

MacDonald, K.A., Bailey, J., MacRory, C., Friis, C., Vogels, C.M., Broderick, T. and Westcott, S.A. 2006. "A Newly Synthesized Molybdenum/Ascorbic Acid Complex Alleviates Some Effects of Cardiomyopathy in Streptozocin-Induced Diabetic Rats." Drugs R D. 7 (1): 33-42.

### **Presentations**

MacDonald-Phillips, K.A. 2020. "COVID-19 Modelling Approaches in PEI." Digital Health Canada Atlantic Region Virtual Conference.

MacDonald-Phillips, K.A and Sanchez, J. 2020. "The COVID-19 Modelling Experience in PEI." Atlantic Association for Research in the Mathematical Sciences COVID-19 Virtual Seminar.

MacDonald, K.A Keefe, G. and McKenna, S. 2015. "Communication Skills Assessment and Training in the Atlantic Johne's Disease Initiative." Graduate Studies and Research Days, Charlottetown, PE.

MacDonald, K., Keefe, G. and McKenna, S. 2014. "Program Outcomes from the Atlantic Johne's Disease Initiative." Proceedings of the Annual Conference of the American Association of Bovine Practitioners, Albuquerque, New Mexico.

MacDonald, K., Keefe, G. and McKenna, S. 2014. "Program Outcomes from the Atlantic Johne's Disease Initiative." Proceedings of the Canadian Association of Veterinary Epidemiology and Preventive Medicine Conference, Charlottetown, PE.

MacDonald, K., Keefe, G. and McKenna, S. 2014. "Risk Assessment and Management Plan Outcomes from the Atlantic Johne's Disease Initiative." Graduate Studies and Research Days, Charlottetown, PE.

MacDonald, K., Keefe, G. and McKenna, S. 2013. "Atlantic Johne's Disease Initiative." Students of the Canadian Veterinary Medical Association Symposium, Charlottetown, PE.

MacDonald, K., Keefe, G. and McKenna, S. 2012. "Preliminary Outcomes of the AJDI and a Study to Measure Producer Attitudes and Awareness." Atlantic Bovine Practitioners Association Annual Conference, Moncton, NB.

MacDonald, K., Keefe, G. and McKenna, S. 2012. "Preliminary Program Outcomes from the Atlantic Johne's Disease Initiative." Proceedings of the Annual Conference of the American Association of Bovine Practitioners, Montreal, QC.

MacDonald, K., Keefe, G. and McKenna, S. 2012. "Program Outcomes and Communication Effectiveness of the Atlantic Johne's Disease Initiative." Graduate Studies and Research Days, Charlottetown, PE.

## **Awards**

AVC Graduate Studies & Research Days – Silver Prize, Session Three (2015)

Dr. R.A. Curtis Bovine Award (2005)

PEI Swine Breeders Association Award (2003)