Meeting 14: Herd health, disease control and eradication programs

Reading

- Thrusfield 2nd Edn, pp 322-336 or 3rd Edn, pp 368-383 (herd health)

- Thrusfield 2nd Edn, pp 337-348 or 3rd Edn, pp 384-404 (disease control and eradication programs)

- Thrusfield 3rd Edn, pp 168-187 (surveillance and monitoring programs)

Presentations

1. Herd health programs: principles, design, strategies, limitations and methods of monitoring success/progress.

2. Regional/national disease control and eradication programs: principles, design, strategies, limitations and methods of monitoring success/progress.

3. Demonstrating freedom from disease (both a descriptive approach, and a revisit of sampling)

Exercises

1. The Global Rinderpest Eradication Program (GREP) is a time-bound program to eliminate rinderpest from the world by the year 2010. Discuss the epidemiological issues which would have to be evaluated before global eradication of a disease such as rinderpest could be considered an achievable objective over a period of 20 to 30 years. Focus your answer on the epidemiological principles, not the specific details of the example disease.

2. The initial decision on whether or not to undertake a national control program for a specific disease of major importance may be influenced by many factors. Using as examples one of more diseases with which you are familiar, discuss the factors which you believe should be taken into account, and describe the role which you, as an epidemiologist, might play in assisting the decision-making process.

3. As a veterinary practitioner, you are asked by a client to develop a herd health program for a dairy cattle herd. Provide an overview of how you would do this, including design features and implementation. Focus on the epidemiological principles.

4. Discuss national disease monitoring and surveillance programs (eg. TGSP, NAQS)

Example examination questions

1. Virulent footrot (VFR) of sheep is considered by many to be a significant disease that is of economic importance to flock owners and the sheep industry as a whole. However, there are others who consider it to be of no importance. You have been asked to provide advice to the Animal Health authorities on the merits of proceeding with a control program. Describe the factors that you would consider and outline any activities you would implement to assist in reaching a recommendation. (2003 written)

2. A program to eradicate brucellosis from cattle in New Zealand has been in place for a number of years and the prevalence of infected herds has been substantially reduced and is now quite low. The program objective remains unchanged – to eradicate brucellosis from cattle in New Zealand.

   Programs to eradicate contagious diseases from animal populations in regions have specific features which can change during the course of such programs. Contrast the major issues associate with the design and implementation of such an eradication program between two stages: stage 1 – early in such a program, and stage 2 – once the disease prevalence has been reduced to a low level.

   Explain why such changes are required. The emphasis in this question is not on the specific epidemiology of brucellosis but is on the differing issues that need to be addressed as a program to eradicate a contagious disease proceeds (2000 written).

Additional reading/resources

- Epidemiological Skills in Animal Health, PGFVS Proceedings 143; pp 141-148 (disease control programs), pp 353-361 (monitoring performance of regional programs)

- Davidson RM (2002) Control and eradication of animal diseases in New Zealand. NZ Vet J 50(3) supplement: 6-12.

- Pharo H (2002). New Zealand declares 'provisional freedom' from hydatids. Surveillance 29(3):3-7. Available from http://www.sciquest.co.nz/crusher_download.asp?article=9003829

- Taylor WP et al. (1995). The principles and practice of rinderpest eradication. Veterinary Microbiology 44: 359-367.

- Tweedle NE and Livingstone P (1994). Bovine tuberculosis control and eradication programs in Australia and New Zealand. Veterinary Microbiology 40: 23-29.

- Radostits OM et al. (1994). Herd Health. 2nd edition, WB Saunders, Philadelphia, USA pp 10-24.