

Special Report Rapport spécial

Foresight: An innovative approach for animal health emergency preparedness

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The ability to conceptualize time travel is unique to humans (1). It enables foresight, which in the purest form is simply “the action of looking forward” (2). Foresight also describes a set of tools that allows diverse groups of participants to think systematically about the future, without attempting to predict it, in order to inform decision-making in the present (3). “Foresight allows preparation for diverse future challenges with adequate lead time... it anticipates and creates multiple, plausible futures... These futures may be positive or negative, but in their diversity they bring into view issues and perspectives that may not have been initially considered.” (4).

Foresight tools have been used extensively by businesses and governments worldwide for many years. Arie de Geus, past corporate planning director for Shell and author of *The Living Company*, explains that “Ultimately the important discussion is not whether something will happen but what would we do if it did happen.” Sir David King, former Chief Scientific Adviser to Her Majesty’s Government and Head of the United Kingdom’s (UK) Office of Science and Innovation, stated that “[A foresight program] has demonstrated that when scientists speak clearly to a receptive political audience, the result can be highly effective.” (5).

The Association of American Veterinary Medical Colleges undertook a foresight project in 2006 addressing the future direction of academic veterinary medical education in North America (4). The results were made available to all the veterinary colleges and implemented, either partially or fully, by many universities. Australia and the UK have both embraced foresight to assist government strategies and planning — in the UK, the Office of Foresight was developed in 2001 as a result of a major foot-and-mouth disease outbreak (5).

In Canada, in light of global political changes since 2001, the Centre for Security Science of National Defense allocated

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funds to strengthen national security and preparedness through the Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Research and Technology Initiative (CRTI). In 2008, CRTI approved and funded a 3-year foresight project focusing on the Animal Health Emergency Management (AHEM) system in Canada, titled Foresight for Canadian Animal Health (Fore-CAN) (6). Recent costly animal health events, caused by infectious diseases such as bovine spongiform encephalopathy, highly pathogenic avian influenza in domestic poultry, and H1N1 in multiple species, are indicators of likely future challenges — highlighting the importance of ensuring that the AHEM system has capabilities to maintain the security, health, and well-being of Canadians.

The AHEM system in Canada draws on the expertise of members from diverse groups and interests, including participants from producer groups, animal health, public health, academia, federal departments and agencies, provincial governments, and international experts and organizations. The Fore-CAN project is led by the Canadian Food Inspection Agency (CFIA) in partnership with Agriculture and Agri-Food Canada (AAFC), the Public Health Agency of Canada (PHAC), the provinces of Ontario and Alberta, Canada’s veterinary colleges, and the Dairy Farmers of Canada — all key stakeholders in the AHEM system.

Like other foresight initiatives, the Fore-CAN project employs various systematic techniques and exercises (Figure 1) (7). The first Fore-CAN workshop, examining ‘Issues and Driving Forces’ (6), involved approximately 80 participants and employed brainstorming exercises to determine uncertain, yet highly influential factors that are expected to challenge the AHEM system beyond 2020. Examples included climate change, globalization, and urbanization. Two factors were recognized as the most uncertain and influential: Societal Values and the Nature of Infectious Disease. In the second workshop, ‘Scenario Development’, participants developed 4 unique and plausible future scenarios shaped by the extremes from these 2 factors. The spectrum for Societal Values ranged from human-centered to a holistic perspective, and for the Nature of Infectious Disease, from low virulence, familiar pathogens, to high virulence, emerging, drug-resistant superbugs. These scenarios provided a framework for discussion about the challenges and requirements for the future animal health system.

In the third workshop, ‘Systems Mapping’ (8), methods were used to describe elements and relationships in the 4 sub-systems of AHEM — Prevention, Preparedness, Response, and Recovery. These sub-systems represented the chronological stages of

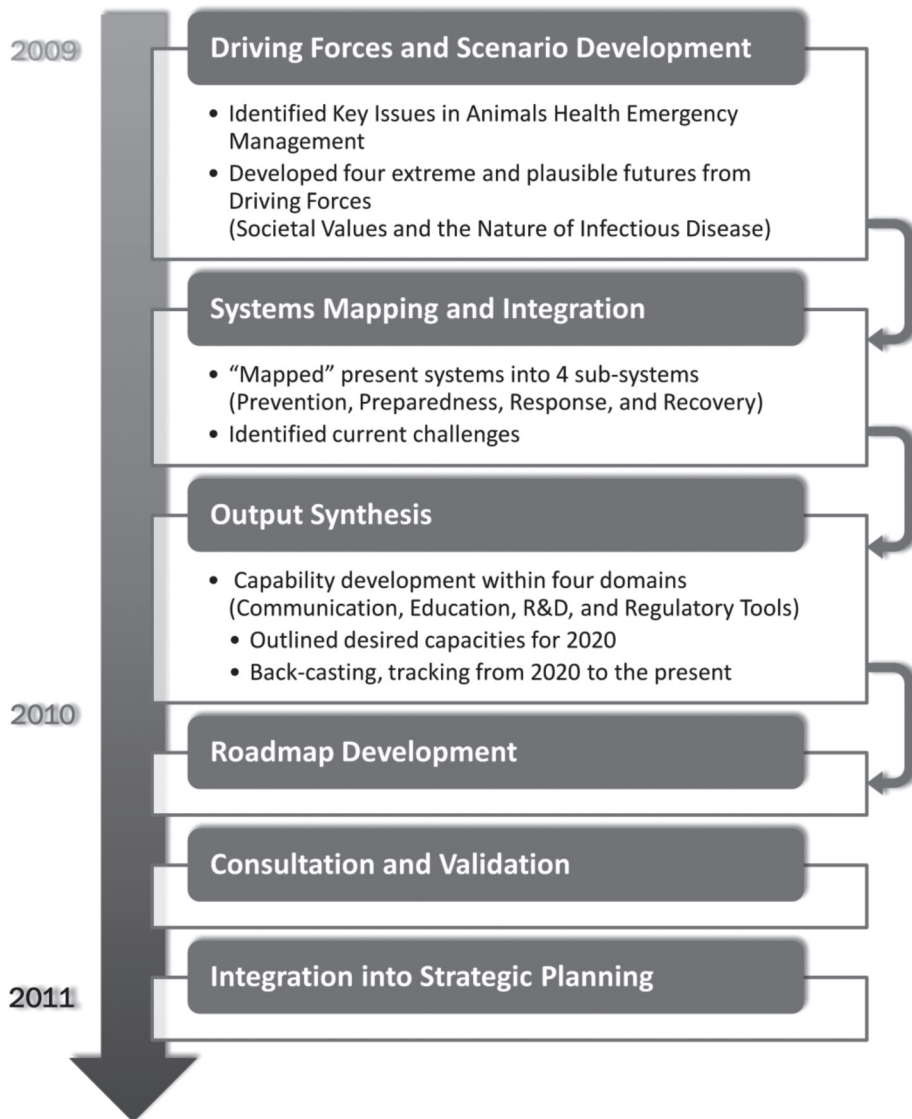


Figure 1. Exercises and techniques employed as part of the Fore-CAN project for the Animal Health Emergency Management system.

emergency management. The following workshop, ‘Integration,’ requested participants to use their understanding of the current system to provide ideas for a new design that would meet the challenges identified in future scenarios.

Four domains, or themes, necessary for a future system for which action planning was considered essential included: Communication & Collaboration, Education & Training, Research & Development and Technologies, and Regulatory System & Tools. During an ‘Output Synthesis’ workshop, participants outlined the critical capacities necessary to deal with future scenarios within each of these 4 domains. A stepwise back-casting technique was used to explore potential actions necessary to develop these required capabilities between now and 2020.

Exercises scheduled for 2010 include ‘Roadmap Development’, and ‘Consultation & Validation’. Fore-CAN will host a Spring 2010 Symposium to review the project’s accomplishments and explore future critical steps for integration

of outputs from the foresight project into strategic planning within and across organizations.

The overall process Fore-CAN follows is logical, transparent, and allows full participation from everyone involved in each exercise. Documentation is thorough and includes recording presentations from speakers, transcribing oral debates, and collecting raw ideas and insights that emerge during foresight activities. All information is digitized and made available online.

The Fore-CAN project is bringing together AHM participants from a variety of disciplines and jurisdictions, providing an innovative way for them to develop new approaches for the management of animal health emergencies in Canada. The insights and suggestions that emerge from Fore-CAN are intended to help prepare Canada to better manage future animal health emergencies. Initial project feedback demonstrates that these exercises are having a positive impact on participants and stakeholders, allowing for innovative methods for thinking about future challenges. Implementing the insights from Fore-CAN

and taking action will require the willingness and leadership of government, academia, industry, and the general public.

For more information on the Fore-CAN project go to: www.forecan-precana.ca

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Book Review

Compte rendu de livre

Manual of Skin Diseases of the Dog and Cat, 2nd edition

Paterson S. Blackwell Publishing (John Wiley and Sons Ltd.), Oxford, United Kingdom, 2008. 356 pp. ISBN 10: 1-4051-6753-X. \$119.99CDN.

Are you looking for complete dermatology reference to quickly help solve a challenging case? Unfortunately, this text is not your best choice.

Into its 3rd publication, mainly in the UK, this book actually has a lot going for it, but it is difficult to navigate quickly to find guidance for a case. You will learn a lot about other skin problems during your search, because the book covers many fascinating topics, in a very readable manner. However, it will take some time to arrive at the page you really need.

The text is logically divided into several sections. Chapters 1 to 3 cover a good review of structure and function of skin, a logical approach to a dermatology case, and a review of diagnostic tests. The remainder of the book then provides an up-to-date discussion of conditions under headers of etiology; bacterial, fungal, parasitic, etc. There are useful, individual chapters on otitis externa, alopecia, and allergic and immune-mediated skin diseases, to name a few. A brief but helpful chapter on neoplastic tumors is covered. The use of tables in this chapter is excellent for presenting a large amount of important detail for each tumor.

There is a wonderful selection of photographs in this book. Often several pictures per skin condition are used; each angle of photograph highlighting an important aspect. Tables are found frequently, especially to cover diagnostic tests or treatment

options that are currently available. This approach works very well in the chapter on otitis externa.

Although this book is written by a British veterinarian, there is very good cross-over to the Canadian setting. Generic names rather than trade names of drugs are used. There is no regional preference for common conditions that would not necessarily be found in Canada.

The main drawback to this text is that there is no easy guide to follow when hunting down an elusive diagnosis. Other textbooks that I have read list differential diagnoses; broken down by diseases of seborrhoea, nodules, pruritis, erosive, vesicular, or localized to face, or feet. Certainly a challenge for new veterinarians, even the most experienced vet can become stumped with a case and need some guidance. This text requires that you have a pretty good idea what chapter you are looking for at the start of your search. I tested my theory with a few imaginary cases and became quite frustrated at the amount of time required to search for a possible diagnosis.

I think that this text would also benefit from diagnostic flow sheets and appendices for the various drugs and topical shampoos and conditioners that are commonly used. Currently they are scattered throughout the book, again making it more onerous to find.

In review, I found the *Manual of Skin Diseases of the Dog and Cat* to be a wonderful study of dermatology. It is concise and complete and guaranteed to teach something new every time you open it. It just might not be what you are looking for as a practical, quick, dermatology reference book.

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