2010

Report of the

Auditor General of Canada

to the House of Commons

FALL

Chapter 9

Animal Diseases—Canadian Food Inspection Agency

Office of the Auditor General of Canada

The Fall 2010 Report of the Auditor General of Canada comprises Matters of Special Importance, Main Points—Chapters 1 to 9, Appendices, and nine chapters. The main table of contents for the Report is found at the end of this publication.

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Ce document est également publié en français.

Cat. No. FA1-2010/2-9E-PDF
ISBN 978-1-100-17074-9
ISSN 0821-8110

Chapter

9

Animal Diseases—Canadian Food Inspection Agency

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Animal Diseases—Canadian Food Inspection Agency

Main Points

What we examined

The Canadian Food Inspection Agency monitors the international progression of animal diseases, controls animal imports, and responds to animal diseases when they are detected in Canada. Working with industry, the provinces, and other federal departments, the Agency delivers a number of programs and services designed to protect Canada's animal resource base. About $200 million annually—30 percent of its budget—is allocated to animal health programs.

Among these animal health programs, we examined the Agency's state of preparedness for animal disease emergencies—situations that call for prompt action outside of normal activities. We also looked at how the Agency managed recent animal disease emergencies.

Audit work for this chapter was substantially completed on 30 April 2010.

Why it's important

Trends in animal disease indicate that new diseases are emerging and more virulent forms of existing diseases, such as tuberculosis, are on the increase. Certain animal diseases, such as avian influenza, also threaten human health. Foreign animal diseases are of particular concern as many such diseases could enter Canada because of international trade and travel.

Failure to prevent the spread of animal diseases, including those that can be spread to humans, could cost Canada's livestock industry billions of dollars in lost production, the loss of international markets through export embargoes, and the costs of control and response activities.

What we found

- The Agency has developed a collection of documents to guide its response to animal disease emergencies. These include its overall emergency response plan, the animal health functional plan that provides a framework for responding to animal diseases, and hazard-specific plans for avian influenza and foot-and-mouth disease. These plans are consistent with accepted emergency management standards.

- Some important work to improve readiness is not assigned deadlines or tracked until complete. The Agency has identified the need to update disease specific plans and develop procedures for certain higher risk animal diseases. However, it has not identified priorities or established a work plan to complete this work. This means that important work may not be completed on a timely basis, which could impact the Agency's emergency readiness. While the Agency has invested considerable effort in developing emergency preparedness and response strategies, key challenges remain. For example, the Agency has significant work to do to enhance readiness for foot-and-mouth disease.
- The Agency has a wide range of activities to enable it to derive lessons from animal disease emergencies and training exercises. However, it lacks a systematic approach to ensure that all key lessons are compiled, tracked, and acted upon. As a result, similar issues continue to be identified over the years. If these issues are not addressed, the Agency's response to an emergency could be affected.
- The Agency followed its established plans and procedures in managing the response to the avian influenza outbreaks of 2007 in Saskatchewan and 2009 in British Columbia. However, each disease and each outbreak is unique, and these results cannot be generalized to predict the Agency's response to future outbreaks.

The Agency has responded. The Agency agrees with all of the recommendations. Its detailed responses follow the recommendations throughout the chapter.

Introduction

Managing animal diseases

9.1 The mandate of the Canadian Food Inspection Agency is to safeguard Canada's food supply and protect the animals and plants upon which safe, high-quality food depends. It is the largest science-based regulatory agency in Canada, and it is responsible for delivering federally mandated food inspection, plant protection, and animal health programs. The Agency, which reports to the Minister of Agriculture and Agri-Food, employs about 6,500 people across Canada. It administers 13 federal statutes and 38 related regulations.

9.2 In the 2008–09 fiscal year, the Agency spent about $200 million—30 percent of its total spending—to protect Canada's animal resource base (which includes livestock and aquatic species), to protect Canadians from **zoonotic diseases**, and to protect the Canadian economy from the effects of an outbreak of animal disease.

Zoonotic disease—A disease that can be transmitted from animals to humans.

9.3 Serious outbreaks of animal diseases can cause Canada's border to be closed to animal exports, including animal products and by-products. Protecting the animal resource base is important for ensuring the Canadian food supply and for the well-being of all Canadians.

9.4 Working with industry, the provinces, and other federal departments, the Agency delivers a number of programs and services that are designed to protect the health of Canadians and Canada's animal resource base. Key activities include

- watching for and controlling disease,
- working with international partners to set standards,
- verifying that exports of animals and animal products meet foreign requirements, and
- verifying that imports of animals and animal products meet Canadian requirements.

9.5 Trends in animal disease show that new diseases are emerging and that more harmful forms of existing diseases, such as tuberculosis, are increasing. As international cases have shown, an outbreak of foot-and-mouth disease could have serious results. Some zoonotic diseases, such as avian influenza (bird flu), have become major concerns in recent years because they threaten Canada's agricultural economy, as well as human and animal health, and because they could halt exports. Further information on these diseases is provided in Exhibit 9.1.

9.6 The Agency's authority to manage animal diseases comes from the federal *Health of Animals Act*. The purpose of the Act is to prevent certain communicable animal diseases from being introduced and spread in Canada. The associated *Reportable Diseases Regulations* list a number of reportable diseases; the Act and regulations require animal owners, veterinarians, and laboratories to promptly report any suspected or confirmed cases to the Agency.

Exhibit 9.1 Avian influenza and foot-and-mouth disease are two diseases of concern

Avian influenza

Avian influenza is a contagious viral infection caused by the influenza virus Type A. This virus can infect a variety of species: wild birds, domestic birds, and mammals, including humans. Based on how severely the illness affects birds, avian influenza is classified as either low pathogenic or high pathogenic. Symptoms of avian influenza in domestic birds range from mild respiratory illness to reduced egg production to death. Avian influenza can cross over to other species, including humans. Scientists think that this movement between species increases the risk of influenza pandemics in humans.

Avian influenza is found in wild bird populations. The Agency believes that the Canadian cases to date are likely the result of the virus being transmitted from wild birds to domestic ones. The outbreaks in 2009 in the Lower Mainland of British Columbia and in 2007 in southern Saskatchewan were found on the migration routes of waterfowl.

In Canada, all cases or suspected cases of pathogenic avian influenza must be reported to the Canadian Food Inspection Agency immediately.

Foot-and-mouth disease

Foot-and-mouth disease is a severe, highly communicable viral disease. It can infect a number of species, such as cattle, swine, sheep, goats, deer, and other ruminants (animals that chew their cud) that have cloven hoofs. It is easily transmitted by direct contact (where an infected animal comes into contact with other animals directly) or by indirect contact (where susceptible animals are exposed to the virus on clothes, footwear, equipment, and materials or are fed contaminated feed or water). The virus can also be transmitted through airborne particles, which allow the disease to spread over long distances. If an outbreak of foot-and-mouth disease happens, the virus could spread quickly to all parts of Canada through routine livestock movements.

An outbreak of foot-and-mouth disease could have a serious impact on the livestock industries in an infected country and could lead to international trade restrictions against animals and animal products from that country. The risk that foot-and-mouth disease poses is great, as was proven during the 2001 outbreak in the United Kingdom, where around 700,000 of 9 million cattle were **depopulated**. In comparison, on 1 January 2010, Canada had some 13 million cattle, many of which were concentrated in certain areas of the country. For example, on that date, there were about 5 million cattle in the Province of Alberta. Although Canada had an outbreak of this disease in 1952, it is considered to be free of it now. Foot-and-mouth disease is a reportable disease under the *Reportable Diseases Regulations*. All cases or suspected cases must be reported to the Canadian Food Inspection Agency immediately.

Depopulate—To remove all animals from a particular environment.

Sources: Adapted from:
Canadian Food Inspection Agency documents

National Audit Office: The 2001 Outbreak of Foot and Mouth Disease, Report by the Comptroller and Auditor General, HC 939 Session 2001–2002: 21 June 2002.

Statistics Canada, February 2010, Cattle Statistics 2010, Catalogue no. 23-012-X, vol. 9, no. 1, as of 1 January 2010, pages 7 and 19.

9.7 Reportable diseases include foreign animal diseases that have not yet been found in Canada and diseases that have been found in Canada. As a first line of defence against foreign animal diseases, the Agency monitors the progression of diseases internationally and controls animal imports to reduce the risk of these diseases entering the country. When a foreign animal disease, such as high pathogenic avian influenza, is found in Canada, the Agency treats the situation as an emergency and, with its partners, works to stamp out the disease quickly. The Agency has ongoing control programs in place for reportable diseases that have been found in Canada, such as anthrax, tuberculosis, and chronic wasting disease. To encourage people to report suspected reportable diseases right away, the Agency runs a program to compensate animal producers financially when disease strikes.

9.8 The Agency also has international obligations to report certain animal diseases that are found in Canada. If a serious animal disease is found in Canada, international trading partners may ban Canadian exports.

Animal disease emergencies since 2004

9.9 Animal disease emergencies have been happening more often in recent years. The Agency expects this trend to continue because international trade and travel is growing and new diseases are emerging. Since 2004, the Agency has managed five animal disease emergencies (Exhibit 9.2).

9.10 Avian influenza poses a major threat to animal and public health. The 2004 outbreak of avian influenza was the first reported case of high pathogenic avian influenza in domestic poultry in Canada. To control the spread of the disease, over 13 million domestic birds had to be depopulated. This was the first large-scale animal disease

Exhibit 9.2 The Canadian Food Inspection Agency has managed five animal disease emergencies since 2004

Date	Disease	Location
2009	Low pathogenic avian influenza	Lower Mainland, British Columbia
2007	High pathogenic avian influenza	Southern Saskatchewan
2005	Low pathogenic avian influenza	Lower Mainland, British Columbia
2005	Bovine spongiform encephalopathy (BSE, or mad cow disease)	Alberta
2004	High pathogenic avian influenza	Lower Mainland, British Columbia

Source: Adapted from Canadian Food Inspection Agency documents

emergency since an outbreak of foot-and-mouth disease in 1952. After the 2004 outbreak, several organizations, including the Agency and the Standing Committee on Agriculture and Agri-Food, prepared reports that named a number of weaknesses in the Agency's response. Some of the key weaknesses mentioned in these reports were

- a lack of up-to-date emergency response plans and procedures to deal with animal disease emergencies, including agreements with key partners such as the provinces;
- inadequate testing of plans and procedures; and
- poor communication within the Agency and between the Agency and its key partners.

Federal responsibility for emergency preparedness

9.11 Recent events linked to threats of natural disasters, disease outbreaks, and terrorism have made people more aware of the importance of emergency preparedness. Canada's emergency management framework is based on the premise that the initial responsibility for an emergency rests with those who are directly affected. Responsibility then moves through the levels of government, as needed, from municipal to provincial to federal. The federal government gets involved only when an emergency clearly falls under the mandate of a certain department or agency, when a province or territory asks for help, or when an emergency situation could affect the national interest and thus calls for a centralized response from the Government of Canada.

9.12 In August 2007, the *Emergency Management Act* came into effect. The Act gives the Minister of Public Safety the responsibility of providing emergency management leadership, which involves coordinating federal emergency management activities. Section 6(1) of the Act gives ministers the responsibility of preparing for emergencies that fall within their mandates (these are often described as "mandated emergencies"):

> The emergency management responsibilities of each minister accountable to Parliament for a government institution are to identify the risks that are within or related to his or her area of responsibility—including those related to critical infrastructure—and to do the following in accordance with the policies, programs and other measures established by the Minister [of Public Safety]:
>
> (a) prepare emergency management plans in respect of those risks;

(b) maintain, test and implement those plans; and

(c) conduct exercises and training in relation to those plans.

9.13 The Agency's mandate includes dealing with emergencies that involve food safety, animal health, plant health, and any other situation linked to Agency responsibilities. It manages most situations with existing programs. For example, it has programs for managing animal diseases that have already been found in Canada, such as tuberculosis and chronic wasting disease. For situations where the response needed is greater than can be accomplished using the Agency's existing programs, the Agency's President declares an emergency, so additional authorities can be used to manage the incident.

Focus of the audit

9.14 Our audit focused on one aspect of the Canadian Food Inspection Agency's efforts to protect Canada's animal resource base: The Agency's efforts to prepare for animal disease emergencies in domestic livestock and its response to the two most recent disease emergencies—the outbreaks of avian influenza in 2007 and 2009.

9.15 Specifically, we examined whether the Agency had planned for, responded to, and learned from animal disease emergencies in ways that were consistent with the *Emergency Management Act* and with emergency management standards.

9.16 We did not examine animal disease surveillance, animal imports and exports, or the payment of compensation to producers.

9.17 More details about the audit objectives, scope, approach, and criteria are in **About the Audit** at the end of this chapter.

Observations and Recommendations

Preparing for animal disease emergencies

9.18 The 2004 avian influenza emergency was difficult for the Canadian Food Inspection Agency. Some 13 million birds in the Lower Mainland of British Columbia were depopulated, and many parties, including the House of Commons Standing Committee on Agriculture and Agri-Food, criticized the Agency's response. We observed that after the 2004 outbreak of avian influenza, the Agency noted that it needed to improve its emergency planning and preparedness so that future responses would be more effective. As a result, many of the procedures and activities we reviewed during our audit were put in place after 2004.

9.19 Emergency preparedness is a key element of emergency management that involves creating effective policies, procedures, and plans for managing emergencies when they occur. Preparing for an emergency can help prevent delays and confusion during the actual emergency response.

9.20 We assessed the Agency's preparations for animal disease emergencies against standards in legislation and against national standards. Section 6(1) of the *Emergency Management Act* requires departments and agencies to fulfill their emergency management responsibilities as outlined in the policies, programs, and other measures established by the Minister of Public Safety. During our audit, in March 2010, Public Safety Canada announced the Federal Policy for Emergency Management and the Federal Emergency Response Plan. The policy applies to all federal institutions and gives departments and agencies direction as they prepare emergency management plans that are specific to their mandate. Because the policy had not been published when we started this audit, we assessed the Agency's plans against expectations set out in a national standard for emergency management plans: The Canadian Standards Association Standard Z1600-08—Emergency management and business continuity programs (2008).

9.21 We examined the following elements of emergency preparedness, based on the *Emergency Management Act* and Canadian emergency management standards:

- assessing risks related to animal disease emergencies;
- preparing emergency management policies, plans, and procedures to address identified risks; and
- conducting exercises and training related to policies, plans, and procedures.

The Agency has assessed animal disease risks

9.22 Assessing the risks that animal diseases pose is an essential step in emergency management. In this way, appropriate steps for preventing, reducing, and preparing for emergencies can be created based on the level of risk. Risk assessment offers information about what the impact on the environment, the economy, and an organization is likely to be, and makes it easier to provide rapid emergency responses, based on acceptable risk tolerance levels. The *Emergency Management Act* requires that departments and agencies

identify the risks related to their areas of responsibility. We examined whether the Agency assessed animal disease risks.

9.23 We observed that the Agency assesses risks related to animal diseases in a number of ways, including

- high-level assessments of corporate risks,
- identification and regulation of high-risk animal diseases, and
- detailed assessments of the risks posed by a specific disease or by the importing of an animal or of animal products into Canada.

9.24 **Agency-wide risks.** The Agency completed a corporate risk profile in 2008 that identified and ranked nine key risks that could reduce the Agency's ability to achieve its objectives. The introduction and spread of animal diseases, including animal diseases that can spread to humans, were ranked second and third among those nine risks. (Risks associated with hazards in food were ranked first.)

9.25 **Assessment of high-risk diseases.** The *Reportable Diseases Regulations* name the diseases that are reportable (paragraph 9.6). The Agency states that these diseases are "usually of significant importance to human or animal health or to the Canadian economy." The Agency periodically updates the list in the regulations to ensure that it reflects the current assessment of what constitutes a disease of significant importance. For example, we noted that the Agency last updated the *Reportable Diseases Regulations* in April 2010 to remove certain types of the bluetongue virus from the reportable disease list.

9.26 **Technical risk assessments.** The Animal Health Risk Assessment (AHRA) unit in the Agency's Science Branch is responsible for completing risk assessments and providing science advice. Most risk assessments are done to respond to requests from other branches. Branches need the information to make decisions about importing animals or managing an existing disease.

9.27 We found that the Agency has a consistent approach to conducting risk assessments using the Animal Health and Production Risk Analysis framework, which is based on standards developed by the World Organization for Animal Health. Between 2007 and 2009, AHRA produced 46 risk assessments. These assessments related to animal imports and exports as well as to animal diseases, such as bluetongue, avian influenza, and foot-and-mouth disease. AHRA does not have a backlog of assessments.

The Agency has developed policies, plans, and procedures to manage animal disease emergencies, but some are not complete

9.28 Documented emergency policies, plans, and procedures are essential elements of emergency preparedness. We examined whether the Agency had developed emergency management policies, plans, and procedures to manage animal disease emergencies in accordance with the *Emergency Management Act* and emergency management standards.

9.29 The Agency has a collection of documents that guide its response to animal disease emergencies. This guidance has a hierarchy, where the emergency response plan applies to all emergencies in the Agency, and other documents focus on health issues in animals, including emergencies, in increasing detail (Exhibit 9.3).

9.30 We found that the Agency has made considerable efforts to develop and amend its emergency response policies, plans, and procedures for animal diseases. Together, these documents guide the Agency's response to animal disease emergencies at a level of detail that is consistent with emergency management standards. We also found examples of important work to improve readiness to respond to animal disease emergencies not being given a deadline and not being tracked until it is complete. If deadlines are not set and work is not tracked to completion, the Agency cannot be sure that important readiness work is being completed in a timely way.

9.31 Emergency policies, plans, and procedures need to be regularly maintained to deal with new scientific knowledge and include the experience gained from testing the plans and managing emergencies. Since 2004, the Agency has approved and amended policies, plans, and procedures (Exhibit 9.3). We observed several examples of Agency officials using the findings of **lessons learned** reports to update the plans they are responsible for managing. However, further work is needed to update hazard-specific plans and procedures.

Lessons learned—Reports that capture the results of an event, such as emergency or exercise, in a manner that allows for improvements in the future.

9.32 As we note later in this chapter (paragraph 9.61), the Agency does not have a systematic approach for identifying and resolving the key issues identified in its lessons learned reports, which it completes after an outbreak or training event. This reduces the Agency's ability to ensure that it identifies the most important needs for new or amended policies, plans, or procedures and its ability to track them until they are dealt with.

9.33 Transition to hazard-specific plans. Agency officials noted that before the 2004 avian influenza emergency, the Agency had a range of plans to address specific animal diseases. The Agency gave us 18 of these plans, which were dated between 1996 and 2003. We observed that the Agency has noted the need to update older plans for specific diseases. The Agency refers to the updated plans as hazard-specific plans.

Exhibit 9.3 The Canadian Food Inspection Agency has developed plans and procedures to deal with animal disease emergencies

Document title	Description	Status
Canadian Food Inspection Agency Emergency Response Plan	Describes roles and responsibilities, operational framework, and emergency response process for the Agency as a whole.	Approved in 2005 and amended in 2009
Animal Health Functional Plan	Outlines responsibilities, tasks, and actions related to animal health incidents, including animal disease emergencies.	Approved in 2006 and currently under revision
• Strategies (older format) • Hazard Specific Plans (newer format)	Provides additional guidance for responding to specific animal diseases.	Strategies have been developed for 18 higher risk diseases, including Classical Swine Fever and Vesicular Stomatitis. • These older format strategies were developed between 1996 and 2003. • The Agency plans to update strategies to the Hazard Specific Plan format. Two Hazard Specific Plans have been developed and approved: • Notifiable Avian Influenza Hazard Specific Plan—approved in 2006 and currently under revision • Foot-and-Mouth Disease Hazard Specific Plan—approved in 2007 and has not been updated
Common Procedures Manual	Provides instructions for a specific task related to an animal disease incident. Depending on the nature of the procedure, it could apply to one or more animal diseases.	Common Procedures Manual approved in 2004, which includes procedures for • disposal • treatment • cleaning and disinfection Draft procedures for avian influenza have been developed and are awaiting approval, such as • Burial Procedure Plan • Poultry Incineration Procedure

Source: Adapted from Canadian Food Inspection Agency documents

9.34 Its officials told us that the Agency sees avian influenza and foot-and-mouth disease as the biggest threats to Canada's animal resource base today: avian influenza because of four emergencies since 2004, and foot-and-mouth disease because of the damage it has done to livestock and the economy in other countries. In 2007, the Agency finalized two hazard-specific plans: one for avian influenza and one for foot-and-mouth disease. By preparing these plans first, before updating the older strategies for specific diseases, the Agency has covered the two diseases that they told us posed the highest risk.

9.35 Deciding which disease strategies need to be updated to hazard-specific plans should be based on risk; such updates may not be necessary for all animal disease threats. We asked about the Agency's intentions to complete hazard-specific plans for other animal diseases, including diseases that are addressed by other strategies. We found that the Agency plans to complete four hazard-specific plans in the 2010–11 fiscal year. However, it has not yet decided which other strategies need to be converted to hazard-specific plans or when this conversion would happen.

9.36 **Updating the Common Procedures Manual.** The Agency's Common Procedures Manual (2004) provides instructions for specific tasks related to an animal disease incident. The Agency has identified the need to create new procedures and update existing ones for higher-risk diseases, such as avian influenza and foot-and-mouth disease.

9.37 We observed that, since 2006, the Agency has focused its efforts on creating more procedures based on its experiences with avian influenza. Thirteen new procedures are nearing completion but have not been formally approved. We found that, in the meantime, Agency officials applied the draft procedures to animal disease emergencies. For example, during the 2009 outbreak of avian influenza, the Agency disposed of slaughtered poultry, using a method outlined in a draft procedure. While the Agency has identified the need to develop procedures for other animal diseases, it has not identified priorities or created a work plan to complete this work, which could affect its emergency readiness.

9.38 **Improving readiness.** Taking steps to improve readiness for future animal disease emergencies is a regular part of the Agency's operations. Being ready to respond to emergencies also includes creating risk-based action plans for known issues. For example, the Agency currently identifies almost 100 risks linked to foot-and-mouth

disease. These risks include a lack of resources to carry out large-scale depopulation and disposal of animals and a lack of precise data on animals, such as the exact number and location of livestock. The Agency has developed an action plan with over 100 deliverables to address these risks, and it monitors this plan regularly.

9.39 Since 2004, the Agency has developed and updated its policies, plans and procedures to be better prepared for animal disease emergencies. However, it has not yet set priorities and developed work plans for completing hazard-specific plans or procedures for those diseases it believes to be of higher risk than others. If the Agency does not set priorities for completing hazard-specific plans and detailed procedures for higher risk diseases, important work may not be completed on time, which could have an impact on the Agency's emergency readiness.

9.40 **Recommendation.** The Canadian Food Inspection Agency should set priorities, based on risk, for completing hazard-specific plans and procedures for dealing with higher risk diseases. Based on these priorities, it should schedule the work and monitor the status of this work.

The Agency's response. Agreed. The Agency has recently reviewed the status of all hazard-specific plans and has prioritized them based on risk. Procedural documents that underpin the hazard-specific plans for higher risk diseases will be prioritized for development and completion based on risk. An action plan will be developed that identifies work plans and timelines for completing identified hazard-specific plans and procedures. The action plan will be monitored and progress will be reported through the Agency's policy and programs governance structure.

The Agency carries out training and exercises

9.41 Another essential element of being prepared to deal with an emergency is training staff to respond. The *Emergency Management Act* requires the Agency to conduct training and exercises for emergencies that are related to its mandate. We examined whether the Agency carried out training and exercises related to animal disease emergencies. We found that the Agency delivers training and exercises related to the Animal Health Program and emergency management and tracks the delivery of both. We did not audit the quality of the Agency's training or exercises.

9.42 The Agency has a training curriculum for the animal health program that it updates regularly. Training covers a wide variety of topics, including

- the identification of foreign animal diseases;
- Agency policies, plans, and procedures related to animal diseases; and
- the **Incident Command Structure**.

Incident Command Structure—A combination of facilities, equipment, personnel, procedures, and communications that operate in a temporary organizational structure that is designed to assist with an emergency response.

9.43 We noted that the Agency has systems in place to track what kind of training individual staff members receive. Recent training has included

- a logistics exercise involving access to an international stockpile of veterinary medicines and protocols around a multi-state partnership to deal with foot-and-mouth disease;
- a meeting and training session for the Animal Health Emergency Response Team for the Quebec area; and
- an exercise, in Ontario, that dealt with an outbreak of a foreign animal disease in large animals.

9.44 We examined whether the Agency had analyzed the results of exercises to consider lessons learned. We selected a poultry exercise from Saskatchewan and confirmed that a report on lessons learned during the exercise had been prepared. The Agency's ability to benefit from lessons learned from a wide variety of sources is discussed later in this chapter (paragraph 9.56).

Responding to avian influenza emergencies

9.45 Four of the five animal disease emergencies the Canadian Food Inspection Agency has faced since 2004 were outbreaks of avian influenza in western Canada (Exhibit 9.2). We examined how the Agency responded to the two most recent emergencies (Saskatchewan, in 2007, and British Columbia, in 2009) to see whether it followed the policies, plans, and procedures it had put in place. We selected these emergencies to see how the Agency responded to recent cases, rather than to those that were several years old.

9.46 Each animal disease emergency is unique. While the two we examined had some similarities, they also had some differences. Both involved avian influenza in domestic bird flocks, but the 2007 emergency involved the high pathogenic variety, and the 2009 emergency involved the low pathogenic variety. Also, the 2007 outbreak in Saskatchewan was in a rural area that had relatively few people or domestic birds nearby. The 2009 outbreak, however, was in

the Lower Mainland of British Columbia in an area with much higher concentrations of domestic flocks and people, which increased the risk that the outbreak would spread. Since each outbreak is unique, the Agency's guidance is designed to meet the needs of different situations.

9.47 We examined whether the Agency managed these emergencies according to its own policies, plans, and procedures for dealing with animal disease emergencies (Exhibit 9.3). We focused on the Agency's own emergency response activities, not on the actions of its key partners or stakeholders, such as the provinces, industry groups, and owners and operators of the infected premises; and not on the actions of those on nearby premises that could become infected.

9.48 As outlined in the Agency's 2006 Notifiable Avian Influenza Hazard Specific Plan (NAIHSP), managing an avian influenza emergency involves a number of steps (Exhibit 9.4). We tested whether the Agency had followed key steps in its response to the 2007 and 2009 outbreaks of avian influenza. Where the Agency's 2004 Common Procedures Manual expands on the requirements of the NAIHSP, we tested whether the Agency had followed these steps as well.

Exhibit 9.4 There are a number of steps involved in managing an avian influenza emergency

Responding to reports of symptoms of an outbreak

- Performing initial tests to detect avian influenza
- Performing second tests to confirm avian influenza
- Declaring an emergency
- Communicating and working with stakeholders on an ongoing basis once an emergency is declared
- Establishing bio-security and movement controls, to reduce the risk of the outbreak spreading
- Putting in place an Incident Command Structure to provide a clear understanding of roles and responsibilities
- Activating **emergency operations centres** in one or more Agency offices
- Deploying the following to the site of the emergency:
  - people
  - non-specialized equipment, such as trailers, tents, and heavy machinery
  - specialized equipment, such as hazardous materials suits and respirators
- Depopulating animals
- Disposing of infected animals
- Approving repopulation of the premises after the operator of the infected premises has completed disinfection to Agency standards.

Source: Adapted from the Notifiable Avian Influenza Hazard Specific Plan, Canadian Food Inspection Agency, 2007

Emergency operations centre—A location at a Canadian Food Inspection Agency facility from which emergency response team members coordinate, monitor, and direct response activities.

The Agency followed its own processes to manage the 2007 and 2009 avian influenza emergencies

9.49 For the 2007 and 2009 outbreaks of avian influenza, we chose 34 procedures from the Agency's 2006 NAIHSP to find out whether the Agency followed its approved plans and procedures to manage the various aspects of the outbreaks during its entire involvement. The procedures we chose covered all phases of the emergency, from the Agency's initial response to its approval of the owner/operator's request to repopulate the facility after it was decontaminated. Where the procedures contained in the Agency's Common Procedures Manual (2004) applied, we also assessed how the Agency met these more detailed expectations.

9.50 We found that the Agency managed the 2007 and 2009 avian influenza emergencies according to its own policies, plans, and procedures. In some cases, Agency officials used new procedures that were in draft form instead of using approved procedures that were out of date. The development of new procedures was discussed earlier in the chapter (paragraph 9.36).

9.51 Using multiple computer systems to record information on animal disease emergencies. The Agency's 2004 lessons learned report on the outbreak of avian influenza in British Columbia and later reports on other outbreaks have identified the need to improve information management and information technology capabilities (paragraph 9.62). For example, in 2004, the Agency identified the need for an integrated information management system to capture, in one application, all information required to manage an emergency, such as field data, laboratory results, and Geographical Information System maps.

9.52 Since 2004, the Agency has used a tool called the Canadian Emergency Management Response System (CEMRS), which was designed to handle information and manage operations during an animal disease emergency. Because CEMRS has limitations, the Agency had originally planned to replace it in 2008. However, it subsequently decided to upgrade CEMRS instead.

9.53 Agency officials told us that a priority for improving CEMRS is to better integrate, into a single application, all information that is required to manage an emergency—the same need was identified in 2004. We observed that documents for emergency management (for example, premises investigation forms and surveillance and epidemiological reports) were stored in CEMRS and other systems. Agency officials also told us that, instead of being used (as intended)

as a real-time system to manage operations during an emergency, CEMRS is used more as a historical record; officials have to keep separate records for their day-to-day use during emergencies.

9.54 Even if the Agency wishes to combine, into one information system, all information that is required to manage an emergency, officials told us that the Agency was not in a position to start funding this project this year. They also said that CEMRS is one of many operational systems that the Agency needs to support its programs; the Agency must prioritize its development activities to serve the greatest needs first. As of April 2010, management confirmed that no plans had been approved to improve CEMRS, nor had there been an analysis of the importance of CEMRS upgrades in relation to other possible projects for system development in the Agency.

9.55 **Recommendation.** The Canadian Food Inspection Agency should set priorities for future development of emergency information systems for animal diseases in relation to other information technology priorities and create suitable project plans if this is identified as a priority for the Agency.

The Agency's response. Agreed. The development of emergency information systems remains a high priority and will be considered within the context of the Agency's information system plans and priorities. Business requirements will be prepared and submitted for consideration through the Agency's information management/information technology governance structure.

Learning from animal disease emergencies

9.56 Looking at lessons learned after an emergency, as well as after other events, provides important information about the strengths and weaknesses of existing processes. This information can then be used to improve future responses. We examined whether the Agency had procedures in place to identify and implement lessons learned from animal disease emergencies as well as from other sources, such as training exercises. We also examined whether it uses this information to improve its readiness to respond to animal disease emergencies.

9.57 The Agency, along with its animal health program, is organized into three major branches: Science, Policy and Programs, and Operations. The Operations branch is divided into four geographical areas: Atlantic, Quebec, Ontario, and Western. This organizational structure makes it particularly important that staff in all three branches and four areas understand the lessons learned from previous animal disease emergencies and other sources and that staff apply this knowledge to their work.

Agency staff informally share lessons learned

9.58 We observed that the Agency has a number of informal ways for staff across the country and in different branches to learn and share information. Agency officials told us that one way to make sure that staff all across Canada learn about animal disease emergencies is to involve them in an emergency response. When an emergency is declared, staff members from headquarters and area offices across the country are sent to help manage the Agency's response and to share what they have learned with their colleagues. Agency staff also help with international emergencies. For example, Agency officials helped with the foot-and-mouth disease outbreak that occurred in the United Kingdom in 2001 and prepared a report that documented what they learned as a result of their participation.

9.59 The Agency also created a number of working groups to develop procedures for dealing with avian influenza; these working groups have been used to transfer the knowledge gained from managing the avian influenza outbreaks in western Canada to other regions. We examined the list of members of the working groups and found that different areas are represented, which supports the sharing of information between colleagues across Canada.

The Agency does not systematically follow up on lessons learned

9.60 We observed that that the Agency documents lessons learned in a number of ways, and there can be more than one lessons learned report for a particular event; these reports are prepared for different purposes or different audiences.

9.61 We found that, while the Agency documents lessons learned from its management of animal disease emergencies and other events such as exercises, it does not have a system that compiles all key issues and recommendations from all the various lessons learned reports. We also found that the Agency does not consistently assign priorities and responsibilities and monitor progress to make sure these issues are resolved.

9.62 We reviewed lessons learned documents from the 2004, 2007, and 2009 avian influenza outbreaks and observed that similar issues were identified during all three events, such as the need to clarify roles and responsibilities and improve information management and information technology capabilities. This observation points to the need to keep track of important lessons learned more systematically to make sure they are resolved; otherwise, the Agency's response to an emergency could be affected.

9.63 **Recommendation.** The Canadian Food Inspection Agency should assign responsibility and develop procedures to review sources of lessons learned, identify those issues that are most important to the Agency, and determine the necessary actions to address them. These actions should be tracked until they have been resolved.

The Agency's response. Agreed. The Agency will assign responsibility for coordinating the review of all emergency response and training lessons learned reports to the Office of Emergency Management. Consolidated recommendations will be submitted for consideration through the Agency's policy and programs governance structure. Implementation progress of accepted recommendations will be reported to the Agency's Audit Committee.

Conclusion

9.64 We found that the Canadian Food Inspection Agency has planned for, responded to, and learned from animal disease emergencies, consistent with the *Emergency Management Act* and emergency management standards. However, we noted areas that need improvement.

9.65 The Agency has developed policies, plans, and procedures to manage animal disease emergencies and has adjusted its approach based on lessons learned. However, it needs to improve in two areas. First, it needs to identify priorities and work plans, based on risk, for completing hazard-specific plans and procedures, and then complete the necessary work. Second, it needs to develop procedures to systematically identify and track all important lessons learned until they are resolved. Because of these two areas that need improvement, the Agency's efforts to update its readiness for animal disease emergencies may not be as successful as they could be.

9.66 We also found that the Agency managed the 2007 and 2009 avian influenza emergencies according to the policies, plans, and procedures that it had in place. Every animal disease emergency includes specific challenges that cannot always be anticipated; but, by managing each emergency according to set policies, plans, and procedures, the Agency is better able to handle them. Because each animal disease emergency is unique, the Agency's response to the 2007 and 2009 emergencies cannot be generalized to predict the Agency's response to future emergencies.

9.67 While the Agency has put much effort into improving its emergency preparedness and response since 2004, key challenges remain. For example, while the Agency has prepared a hazard-specific plan to respond to foot-and-mouth disease, it still has significant work to do to improve its readiness to manage an outbreak of the disease.

About the Audit

All of the audit work in this chapter was conducted in accordance with the standards for assurance engagements set by The Canadian Institute of Chartered Accountants. While the Office adopts these standards as the minimum requirement for our audits, we also draw upon the standards and practices of other disciplines.

Objectives

The overall objective of this audit was to determine whether the Canadian Food Inspection Agency has planned for, responded to, and learned from animal disease emergencies, consistent with the *Emergency Management Act* and emergency management standards.

The audit sub-objectives for the two lines of enquiry were as follows:

- Determine whether the Canadian Food Inspection Agency has developed policies, plans, and procedures to manage animal disease emergencies and has adjusted its approach based on lessons learned, consistent with the *Emergency Management Act* and emergency management standards.
- Determine whether the Canadian Food Inspection Agency managed the 2007 and 2009 avian influenza emergencies consistent with its established plans and procedures.

Scope and approach

This audit examined the Canadian Food Inspection Agency's readiness to respond to animal disease emergencies, its management of avian influenza emergencies in 2007 and 2009, and whether it adjusts its approach based on lessons learned.

The audit examined the Agency's disease response activities for land-based farm animals only. It did not examine its responsibilities toward other animals, such as aquatic animals and bees. While we recognize that responding to animal disease emergencies involves many partners, the audit focused only on the Agency's actions and did not examine the actions of its key partners, such as provincial and municipal governments.

During our audit, we interviewed Agency officials at headquarters as well as key officials from regional offices who are involved in managing animal disease emergencies. We interviewed key stakeholders from the private sector and provincial governments. We also reviewed files, records, and reports, and examined information found in the Agency's emergency management system for animal diseases (Canadian Emergency Management Response Systems).

Criteria

To determine whether the Canadian Food Inspection Agency developed policies, plans, and procedures to manage animal disease emergencies and adjusted its approach based on lessons learned, we used the following criteria:	
Criteria	**Sources**
The Canadian Food Inspection Agency identifies the risks of potential animal disease emergencies consistent with the *Emergency Management Act* and emergency management standards.	• *Emergency Management Act,* section 6(1) • Emergency Management and Business Continuity Programs (Canadian Standards Association, CAN/CSA-Z1600-08)
The Agency prepares emergency management policies, plans, and procedures in respect of the identified risks consistent with the *Emergency Management Act* and emergency management standards.	• *Emergency Management Act,* section 6(1) • Emergency Management and Business Continuity Programs (Canadian Standards Association, CAN/CSA-Z1600-08)
The Agency conducts exercises and training in relation to its policies, plans, and procedures, consistent with the *Emergency Management Act* and emergency management standards.	• *Emergency Management Act,* section 6(1) • Emergency Management and Business Continuity Programs (Canadian Standards Association, CAN/CSA-Z1600-08)
The Agency conducts lessons learned in relation to its exercises, training, and management of animal diseases, including animal disease emergencies, and has updated its policies, plans, and procedures based on these lessons learned, consistent with the *Emergency Management Act* and emergency management standards.	• *Emergency Management Act,* section 6(1) • Emergency Management and Business Continuity Programs (Canadian Standards Association, CAN/CSA-Z1600-08)
To determine whether the Canadian Food Inspection Agency managed the 2007 and 2009 avian influenza emergencies according to its established plans and procedures, we used the following criteria:	
Criteria	**Sources**
The Canadian Food Inspection Agency manages selected animal disease emergencies consistent with its established policies, plans, and procedures.	• *Emergency Management Act,* section 6(1)b • Canadian Food Inspection Agency's Emergency Response Plan (May 2009, 2nd edition) • Animal Health Functional Plan, Canadian Food Inspection Agency, December 2006 • Notifiable Avian Influenza Hazard Specific Plan, Canadian Food Inspection Agency, December 2006 • Foreign Animal Disease Eradication Support Plan for Saskatchewan, 26 May 2006 • Foreign Animal Disease Emergency Support Plan—Federal/Provincial Agreement in British Columbia, 2009

Management reviewed and accepted the suitability of the criteria used in the audit.

Period covered by the audit

The main period covered by the audit is October 2009 to April 2010. However, we looked at two outbreaks of avian influenza that took place in 2007 and 2009, and some of the documents reviewed go back to 2004. Audit work for this chapter was substantially completed on 30 April 2010.

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Appendix List of recommendations

The following is a list of recommendations found in Chapter 9. The number in front of the recommendation indicates the paragraph where it appears in the chapter. The numbers in parentheses indicate the paragraphs where the topic is discussed.

Recommendation	Response
Preparing for animal disease emergencies	
9.40 The Canadian Food Inspection Agency should set priorities, based on risk, for completing hazard-specific plans and procedures for dealing with higher risk diseases. Based on these priorities, it should schedule the work and monitor the status of this work. **(9.28–9.39)**	Agreed. The Agency has recently reviewed the status of all hazard-specific plans and has prioritized them based on risk. Procedural documents that underpin the hazard-specific plans for higher risk diseases will be prioritized for development and completion based on risk. An action plan will be developed that identifies work plans and timelines for completing identified hazard-specific plans and procedures. The action plan will be monitored and progress will be reported through the Agency's policy and programs governance structure.
Responding to avian influenza emergencies	
9.55 The Canadian Food Inspection Agency should set priorities for future development of emergency information systems for animal diseases in relation to other information technology priorities and create suitable project plans if this is identified as a priority for the Agency. **(9.49–9.54)**	Agreed. The development of emergency information systems remains a high priority and will be considered within the context of the Agency's information system plans and priorities. Business requirements will be prepared and submitted for consideration through the Agency's information management/information technology governance structure.
Learning from animal disease emergencies	
9.63 The Canadian Food Inspection Agency should assign responsibility and develop procedures to review sources of lessons learned, identify those issues that are most important to the Agency, and determine the necessary actions to address them. These actions should be tracked until they have been resolved. **(9.60–9.62)**	Agreed. The Agency will assign responsibility for coordinating the review of all emergency response and training lessons learned reports to the Office of Emergency Management. Consolidated recommendations will be submitted for consideration through the Agency's policy and programs governance structure. Implementation progress of accepted recommendations will be reported to the Agency's Audit Committee.

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