
**Health Canada's Preparedness for and
Response to Respiratory Infections Season
and the Possible Re-emergence of SARS**

Fall/Winter 2003-04

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1.0 Introduction

The importance of sustained commitment to effectively managing infectious diseases that threaten the health of populations is clear. Events of the past 12 months have reinforced some of the well-established public health frameworks within the federal as well as provincial and territorial systems but have also served to strengthen the resolve of public health administrators and front line workers to keep watch, act quickly and stay in touch with each other, especially in the face of emerging respiratory infections.

As we enter the season when respiratory infections are more prevalent and acute, it is important to confirm new and heightened measures that are the result of sustained commitment by all partners and the subject of specific findings and recommendations such as those contained in the reports of Dr. David Naylor - *Learning from SARS*.

Planning for the 2003-04 respiratory infections season consolidates work well under way by the Health Canada-led Pandemic Influenza Planning Committee with the most current knowledge available on emerging infectious diseases such as the Severe Acute Respiratory Syndrome (SARS).

Because we know that influenza viruses periodically cause worldwide epidemics or pandemics with high rates of illness and death, the pandemic influenza preparations involving the provinces and territories have been in place since 1983. The recent experience with SARS and confirmation by the World Health Organization (WHO) that SARS could re-emerge have added a new dimension and urgency to the need for a clear and coordinated framework for action.

The purpose of this document is to describe the Health Canada (HC) framework and its components, most of which have been developed in collaboration with expert advisory groups, international bodies and provincial and territorial partners to protect the health of Canadians. Many of the specific and detailed measures have as their focus the SARS coronavirus but are applicable to a range of respiratory infectious diseases and are understood as such in the public health community. The tools described in this document are not all new, but many have been refurbished as a result of experiences with SARS and allow us to reach a state of readiness for this respiratory season. More enhancements will come, but the foundation is in place and the range of tools at the disposal of public health workers is as important as the personal commitment all bring to this work.

Components of the framework will continue to be refined, but it is important that the framework be available now as an informative and usable platform for public health practitioners and Canadians who want to better understand how the many players can and have come together for public health protection.

2.0 Roles within the Public Health Community

2.1 At the Local and Provincial/Territorial Level

Provinces and territories exercise responsibility for health care delivery, and in an outbreak will provide first line response through provincial and local medical officers of health, augmented by the federal level as necessary and at the request of provinces/territories. Provinces and territories manage the **acute care and primary care** activities associated with disease outbreak and management. Provincial **laboratories** contribute to the public health response and coordinate efforts with federal laboratories within the Canadian Public Health Laboratory Network.

In a major outbreak, provincial and territorial along with local **emergency response measures** will be activated. HC and other jurisdictions assist.

The Council of Chief Medical Officers of Health is the primary mechanism for strategy and protocol development in advance of disease outbreak and for information-sharing in the midst of a disease outbreak. Provincial and territorial chief medical officers of health operate under the authority of ministers of health. Health Canada works with the Council to develop public health policies and strategies.

Additional information about provincial and territorial public health measures can be found on the Websites of the respective ministries of health.

2.2 At the National Level

Health Canada is the Government of Canada's lead agency responsible for preparedness and response associated with major infectious disease outbreaks. Health Canada interacts directly with provincial chief medical officers of health and also provides information directly to citizens about safeguarding their health in Canada and while travelling.

National health **surveillance** systems coordinated and supported by Health Canada work with provincial/territorial health systems as well as international entities to gather and analyze information about risks to the public. Alerts of infectious disease threats are communicated rapidly to public health partners and government officials who require the information in order to take decisions about preventive or response activities.

Health Canada provides support to Canadian health care facilities through the development of **national guidelines** related to infectious disease detection, investigation and response. These guidelines are developed by a national panel of experts (the National Infection Control Steering Committee) through collaborative exercises with provinces and territories as well as other

national and international experts. They are used as the basis for developing policies and procedures for infection prevention and control in health care facilities across the country.

Health Canada **laboratories** are integral to the detection, investigation and management of infectious diseases. Federal laboratories key to this are the National Microbiology Laboratory (NML) in Winnipeg, the Laboratory for Foodborne Zoonoses (LFZ) in Guelph and the National Laboratory for Retroviruses in Ottawa. These laboratories provide front line diagnostic services (for new or rare diseases); reference microbiology (confirming test results and quality assurance); laboratory surveillance and support to epidemiologic surveillance; emergency preparedness and response; and applied and fundamental research. The LFZ in Guelph focuses on the animal side of foodborne zoonotics, and the Retrovirology Laboratory specifically deals with HIV and related viruses. These laboratories offer advanced testing capacity important to provincial and hospital-based laboratories.

In serious outbreaks, Health Canada's **Emergency Response** mechanisms are activated to assist in tracking, responding to and reporting internationally on outbreak events, including the provision of resources such as supplies or people as needed and as requested by provincial/territorial governments.

2.3 At the International Level

The World Health Organization (WHO) offers assistance to affected states in the form of technical advice and supplies and, if necessary, it can mount coordinated international investigations/responses. These responses draw technical resources from within the WHO system and from the Global Outbreak Alert and Response Network (GOARN), a pooled resource for alert and response operations drawing on 110 technical institutions, non-government organizations and networks. Specific support available includes on-the-spot investigations, confirmation of diagnosis, handling of dangerous (biosafety level IV) pathogens, case detection, patient management, containment, and provision of logistics in the form of staff and supplies. Investigative teams from GOARN are prepared to arrive at an outbreak site within 24 hours. More information about GOARN can be found at <http://www.who.int/csr/outbreaknetwork/en/>

International Health Regulations are in place to ensure maximum security against the international spread of diseases with minimum interference with world traffic. Detailed information about the regulations can be found at http://www.who.int/gb/EB_WHA/PDF/WHA56/ea5648.pdf

During an outbreak, linkages and liaison mechanisms between Health Canada and the WHO are significantly enhanced.

The **Centers for Disease Control and Prevention (CDC)**, as part of the Department of Health and Human Services (HHS), is the U.S. government's lead agency responsible for preparedness and response activities related to a major infectious disease outbreak and will augment state and local resources as necessary. In a global or continental scenario, the CDC links with Canada are important, and mechanisms are in place for regular ongoing information-sharing. During an outbreak, linkages and liaison mechanisms between Health Canada and the CDC are significantly enhanced. Detailed information about the CDC can be found at <http://www.cdc.gov/aboutcdc.htm>

The **Association of Southeast Asian Nations (ASEAN)** assumes a coordination role related to disease management preparedness and response for the 10 countries that are members of ASEAN. Member health ministers have collaborated on a Framework (ASEAN+3 Action Plan) on Prevention and Control of SARS and other Infectious Diseases, with the overall objective of building the region's capacity to respond to future outbreaks such as SARS. More detailed information about the activities of ASEAN and member countries can be found at <http://www.aseansec.org/home.htm>

3.0 Enhanced Surveillance

Health surveillance is the ongoing, systematic use of routinely collected health data to guide public health action in a timely fashion.

Surveillance systems track and forecast the occurrence of health events by sifting through data and analyzing, interpreting and organizing the information into a product that is disseminated to those who need to know.

Enhanced surveillance measures reflect the attunement of existing systems, and people within those systems, to particular diseases or disease traits in order to prevent large-scale epidemics and outbreaks through early detection and the rapid implementation of control measures.

3.1 Global Surveillance

Early detection of a major infectious disease outbreak anywhere in the world is a shared responsibility:

The **WHO** gathers infectious disease intelligence from many sources, including WHO regional and country offices; global epidemiology and surveillance networks, such as the global network of over 100 laboratories; and countries or national disease control centres.

Health Canada's Global Public Health Intelligence Network (GPHIN), managed by the Centre for Emergency Preparedness and Response, is a primary source of information for the WHO as well as international governments and other non-government public health organizations.

GPHIN is an internet-based, early warning system that gathers preliminary media reports of public health significance 24 hours a day, 7 days a week. The information is filtered, analyzed and made available to subscribers. Notifications about public health events that may have serious public health consequences are immediately forwarded to users.

GPHIN is currently being enhanced to offer service in all six WHO official languages (Arabic, English, French, Russian, Simplified Chinese and Spanish). It was the GPHIN system that first identified an unusual outbreak of pneumonia, later identified as SARS, as it was emerging in southern China.

3.2 National Surveillance

Health Canada gathers infectious disease intelligence from a variety of sources. Reports are received from the WHO, the CDC, ministries of health in other countries, and provincial and territorial reports. Health Canada's infectious disease programs perform daily scans of information published by international surveillance systems – for example, influenza surveillance by the WHO, the European Influenza Surveillance System, CDC, and ministries of health Websites such as that of the Hong Kong Department of Health. Other sources include general media reports, particularly from global outlets as captured by Health Canada's GPHIN surveillance. Electronic discussion sites such as ProMed (Program for Monitoring Emerging Diseases, sponsored by the Federation of American Scientists and the International Society for Infectious Diseases) and information from NGOs. Informal sources can be an "early heads up" about an infectious disease threat prior to any official verification. More detailed information about ProMed can be found at <http://www.fas.org/promed/>

Health Canada has a comprehensive national surveillance system for influenza, established in the 1996-1997 influenza season. Laboratory surveillance for respiratory viruses has been in place since 1993. Surveillance information and alerts are communicated to Canada's public health community via disease surveillance networks such as the influenza surveillance system "FluWatch": <http://www.hc-sc.gc.ca/pphb-dgsp/fluwatch/index.html> Surveillance and epidemiologic information on SARS is published on Health Canada's SARS Website: <http://www.sars.gc.ca>.

3.2.1 Surveillance for Severe or Emerging Respiratory Infections

In preparation for the 2003-04 fall/winter respiratory infections season, Health Canada, with a national expert working group, enhanced existing **surveillance guidelines** for the provinces and territories. The revised guidelines include detailed instructions on the detection and investigation of severe respiratory illnesses and instructions for reporting to Health Canada. The guidelines are provided to all provinces and territories and assist in identifying the following:

- ▶ unusually severe illness and death caused by both unknown and known respiratory pathogens (e.g. influenza, SARS coronavirus) that have the potential for large-scale epidemics or pandemics;
- ▶ possible new cases of SARS from a potential zone of re-emergence of SARS coronavirus or from other sources such as laboratories;
- ▶ the need for control measures to minimize transmission;
- ▶ clusters of severe respiratory illness acquired in acute care hospitals.

The guidelines contain recommendations for timely reporting to public health authorities as well as recommended laboratory testing when severe respiratory disease in individuals and in hospital clusters is identified. Detailed information on “surveillance for severe or emerging respiratory infections in the SARS post-outbreak period” document is available at http://www.hc-sc.gc.ca/pphb-dgspsp/sars-sras/pdf/hc-ri-enhanced-surveillance-pop_e.pdf

Health Canada is supporting strengthened **hospital surveillance systems**. With the assistance of an expert group under the Canadian Nosocomial Infections Surveillance Program (CNISP), Health Canada has developed specific guidelines on hospital surveillance, including database templates and other tools to assist hospitals. These will be ready for dissemination to sentinel teaching hospitals by December 1, 2003. Other hospitals in Canada will be receiving various components of the surveillance protocol.

3.2.2 Tools for Detection and Notification

Surveillance efforts require tools for information-gathering and sharing; the extent to which these tools are consistent affects how efficiently information can be shared among jurisdictions.

In the fall/winter of 2003, Health Canada is launching an important notification tool – the Canadian Integrated Outbreak Surveillance Centre (CIOSC) Respiratory Alerts program. It is a modification of an existing enteric disease alert system, which has been highly effective in providing alerts about gastrointestinal outbreaks among health jurisdictions. More than 95% of all health units in Canada, all provincial/territorial chief medical officers of health and all

provincial public health laboratories have access to this system. Modifying it to include Respiratory Alerts means that a public health official in one area who is aware of local cases of respiratory illness can rapidly share that information with other public health workers, allowing the public health community, including Health Canada, to identify outbreaks or case clusters and respond. The Respiratory Alerts program will be activated and the implementation will begin in early December 2003.

3.2.3 SARS National Case Definition

Health Canada, in consultation with provinces and territories and with international partners (WHO and CDC), has prepared national case definitions of SARS, taking into account the availability of new diagnostic tests for the SARS coronavirus. SARS mimics many other respiratory illnesses, and laboratory testing is not always conclusive early in the course of the illness. This means that clinical and epidemiologic criteria must be used to define what is and is not a case of SARS so that appropriate infection control actions can be taken and public health measures implemented. Health Canada is working with the international community towards “global” case definitions of SARS. As well, it has also agreed with the provinces/territories and the international community regarding what is reported to Health Canada and, from Health Canada, to the WHO.

The national case definitions of SARS are as follows:

A confirmed case: presents as severe illness (early clinical signs and radiographic evidence) with laboratory confirmation (tests using seroconversion or virus isolation) or evidence (positive laboratory results meeting the NML criteria). The laboratory results would have to be verified by a provincial public health laboratory or the NML. The term “meeting NML criteria” is used rather than specifying particular testing protocols to allow flexibility should the protocols change. All confirmed cases would be reportable to Health Canada and to the WHO.

A probable case: presents as moderate illness (early clinical signs) with laboratory evidence (positive laboratory results) or severe illness (early clinical signs and radiographic evidence) with an epidemiologic link. All probable cases would be reportable to Health Canada only.

Symptomatic contacts of confirmed and probable cases have also been defined for the purpose of monitoring and for assessment of whether public health measures are required.

More detailed information on case definitions can be found at http://www.hc-sc.gc.ca/pphb-dgspsp/sars-sras/sarscasedef_e.html

4.0 Outbreak Preparedness, Investigation and Response

SARS initially presented around the world primarily as a nosocomial infection occurring in a hospital setting. In the event of a re-emergence of SARS or other hospital-based infections, prevention, identification and control measures will be critical to limit the impact on the health care system and to prevent spread into the community. Shared protocols and guidelines are key to rapid and efficient response. Preparing guidelines on infection control is part of Health Canada's ongoing responsibilities for public health protection. Experiences learned from the SARS outbreak have translated into modified infection control measures.

Fundamental to the shared responsibilities associated with disease outbreaks is an understanding of roles and responsibilities. Health Canada's **Respiratory Illness Outbreak Response Protocol** outlines basic roles and responsibilities, general principles and operating procedures agreed upon by the federal, provincial and territorial governments. This will help ensure coordinated efforts around investigation and control of severe respiratory illness outbreaks in Canada that have international and multi-jurisdictional implications. The protocol will be finalized by December 1, 2003.

4.1 Public Health Management Guidelines – Protecting Against Spread in the Community

Health Canada is providing specific guidelines on overall public health management of cases of severe respiratory illness where investigation or follow-up in the community is required for cases or clusters. Health Canada's guidelines cover the following:

- ▶ travel history of patients
- ▶ identification of close contacts/travel companions
- ▶ discharge and transfer of patients
- ▶ home isolation and follow-up

The guidelines on Public Health Management of Cases and Clusters of Severe Respiratory Illness in the SARS Post-Outbreak Period are available at http://www.hc-sc.gc.ca/pphb-dgspsp/sars-sras/pdf/phm-of-cases-and-clusters-sars-pop_e.pdf

4.2 Infection Control Guidelines – Protecting Against Spread in Hospitals

In consultation with national experts, Health Canada has developed infection control guidelines for respiratory illnesses. These were modified as part of the response to SARS. They complement provincial and local guidelines in assisting front line health care workers to prevent the transmission of SARS in institutions where patients suspected of having SARS or those with a diagnosis of SARS are being cared for. Continuous improvements to the guidelines in light of knowledge generated from the response to SARS nationally and internationally is the work of the Health Canada-led National Infection Control Guidelines Steering Committee.

Guidelines for routine practices and additional precautions are now available to all public health professionals and cover the following subjects:

- ▶ patient triage
- ▶ protective apparel and equipment (gloves and gowns)
- ▶ hygiene
- ▶ high-risk procedures
- ▶ patient accommodation, transport and transfer
- ▶ respiratory equipment
- ▶ environmental control
- ▶ visitors
- ▶ postmortem care

By early December 2003, Health Canada will provide additional guidelines covering the following scenarios: sporadic respiratory infections; non-SARS outbreak; sporadic SARS; and an outbreak of SARS.

Detailed infection control guidelines are available on the Health Canada SARS Website at http://www.hc-sc.gc.ca/pphb-dgsp/dpg_e.html#infection

4.3 Provincial Infection Control Guidelines

Provinces and territories are engaged in SARS planning activities. For example the Province of Ontario has prepared directives and protocols describing hospitals' readiness and response associated with outbreak and non-outbreak conditions. The provincial guidelines have been developed in tandem with Health Canada and represent one province's approach to local preparedness and response. Other provincial jurisdictions have similar measures in place. The Ontario enhanced guidelines cover the following:

- ▶ respiratory illness surveillance measures
- ▶ screening at hospital entrances and in emergency rooms
- ▶ outpatient and ambulatory measures
- ▶ patient accommodation and movement
- ▶ isolation facilities
- ▶ high-risk procedures
- ▶ hospital workers and visitors
- ▶ discharge procedures
- ▶ signage
- ▶ protective equipment
- ▶ database usage and case tracking

Ontario's information on SARS can be found at
http://www.health.gov.on.ca/english/providers/program/pubhealth/sars/sars_mn.html

Additional information about provincial/territorial preparedness and response measures for respiratory infections can be found at respective ministry of health Websites.

4.4 Outbreak Response – Augmenting Local Resources

In the event of an outbreak HC has resources to augment local efforts, at the request of provincial/territorial authorities, in the form of supplies as well as professional teams:

Supplies

Emergency supplies are retained in Health Canada's National Emergency Stockpile System. From warehouses positioned around the country, items such as gloves, masks, thermometer units, aircraft quarantine kits, radiologic units and other supplies can be delivered within hours.

Response Teams

Health Canada has epidemiologic and laboratory expertise to respond to disease/health threat emergencies. There are two Health Canada response teams that are deployable in an outbreak. The teams will work with provincial/territorial public health officials according to pre-arranged protocols, ensuring that no time is wasted at the height of an emergency and teams can be fully utilized as soon as they “hit the ground”.

The Epidemiologist Team can be on site within hours and has two components. One component heads to the site to immediately begin working alongside local health authorities. The second component is “fixed” and manages the necessary data and analysis with support from the home infrastructure.

The NML can deploy fully equipped laboratory teams to the site of an emergency. The teams, consisting of three to six people, depending on the need, are fully cross-trained in bacteriology and virology. They have the capability of working on high containment pathogens (level 3 and level 4) with state-of-the-art technology. The teams can be ready to be deployed to the field within 3 hours and can operate independently for up to 7 days.

These epidemiology and laboratory teams will work closely with each other as well to ensure an integrated response in a local setting (e.g. the epidemiologists use the laboratory team’s findings to advance the outbreak investigation).

4.5 Case-management and Tracking

In any disease outbreak, information is key to understanding how the disease is spreading and the extent to which containment efforts are effective. Sharing data among jurisdictions throughout an outbreak helps to support the overall public health response.

Health Canada, with the provinces/territories, has developed an Internet-based Public Health Information System (*i*-PHIS). This is a tool that allows local public health workers to capture and track detailed information on individual and multiple cases and enables that information to be integrated with other data, such as laboratory reports and quarantine case reports. *i*-PHIS is a platform for consistent data capture and reporting to Health Canada and other jurisdictions. It is operational in three regions – British Columbia, NWT and parts of Alberta. In three other regions, pilot projects will lead to fully operational systems by April 2004. The *i*-PHIS complements the CIOSC alert system: CIOSC shares general “cases of interest” findings with others before an outbreak is confirmed, and *i*-PHIS ensures that when the outbreak has been confirmed the detail needed on cases is captured, shared and analyzed within a single system. For jurisdictions where *i*-PHIS is as yet unavailable, the CIOSC system will offer the ability to do the same case management work.

More detailed information on *i*-PHIS can be found at www.hc-sc.gc.ca/pphb-dgsp/csc-ccs/ciphs_e.html

4.6 Laboratory Support

Canada's federal, provincial and territorial public health laboratories are the cornerstone for delivering a robust response to disease outbreak and will be key to detecting whether SARS has returned. Laboratories are able not only to detect the SARS coronavirus but also to rapidly determine whether a SARS-like illness is due to some other agent, such as influenza.

The Canadian Public Health Laboratory Network is an important channel for communication between Health Canada's NML and the provincial counterparts. On a global scale, a similar laboratory network ensures that Canadian laboratories have access to first-hand information about the international laboratory experience with specific diseases. It is through these networks that advances in laboratory measures can be pursued and shared with other jurisdictions.

Provincial and federal laboratories have different levels of expertise. All provincial laboratories and many hospital laboratories in Ontario can now detect SARS coronavirus genes. This recently established, decentralized testing capacity and capability is more efficient than forwarding all suspect specimens to the federal laboratory for initial testing. More importantly, it reduces diagnostic test turn-around time, allowing for more rapid response in addressing clinical care needs. Health Canada's NML will further assist provincial laboratories to establish capability to conduct SARS coronavirus antibody testing. This is an important step that will allow them to deal with their patients' needs in a more expeditious and timely fashion.

In order to ensure that public health laboratories work quickly and efficiently to conduct tests and share results, Health Canada, with assistance from members of the Canadian Public Health Laboratory Network, has developed the SARS Coronavirus Laboratory Investigations Protocol in the SARS Post-Outbreak Period. This framework provides guidance on the following:

- ▶ specimen collection and transportation;
- ▶ criteria for requesting a laboratory diagnosis of SARS coronavirus infection;
- ▶ biosafety measures for laboratory personnel and front line health care workers;
- ▶ laboratory controls and proficiency testing panels.

Health Canada's NML is making further enhancements to ensure that there is sufficient capacity at the federal level to supplement provincial and local responses in outbreak identification and outbreak response, by

- ▶ establishing data and information management systems for managing laboratory information in an outbreak;
- ▶ evaluating the sensitivity and specificity of current diagnostic tests and developing second generation tests; and
- ▶ continuing research into the cause of SARS, possible SARS vaccines and treatments.

The SARS Coronavirus Laboratory Investigations Protocol in the SARS Post-Outbreak Period can be found at http://www.hc-sc.gc.ca/pphb-dgspss/sars-sras/pdf/SARS-CoV-lab-investigation-protocol_e.pdf

5.0 Management of Travel -related Risks

Health Canada is committed to preventing the importation and exportation of infectious diseases as well as reducing risks to travellers. Several travel-related risk management measures are in place.

5.1 Quarantine Measures

The *Quarantine Act* and regulations enable Health Canada's quarantine officers to institute a range of screening and detention measures at airports and ports, including the following:

- ▶ detaining people and goods in order to conduct medical examinations, analysis of goods or inspection of conveyances;
- ▶ requiring airline carriers to distribute health information materials and conduct active screening of travellers en route, before departure and after arrival.

Health Canada is providing quarantine services at six major international airports: Toronto, Vancouver, Montreal (Dorval and Mirabel), Ottawa and Calgary. Quarantine service will be added at Halifax and Edmonton international airports by mid-December 2003.

Airport quarantine officers are registered nurses with diplomas in community health and/or degrees in nursing with significant experience working in public health, emergency, or primary health care settings. Physician quarantine officers oversee quarantine measures at airports. The quarantine service reports to Health Canada's Centre for Emergency Preparedness and Response.

Quarantine Officer Responsibilities at Airports/Ports

In a non-outbreak situation:

- ▶ assessing ill travellers arriving on international flights who are suspected of having, or having been in contact with, someone with a serious communicable disease;
- ▶ assessing the medical and travel histories of travellers who have died in-flight en route to Canada;
- ▶ arranging for the diagnostic assessment of travellers when necessary under the authority of the *Quarantine Act* by local health care providers;
- ▶ advising appropriate public health authorities when an individual is assessed under the provisions of the *Quarantine Act*; and
- ▶ maintaining liaison with the airport authority, other government departments at the port of entry, and with local emergency medical and public health authorities.

In an outbreak situation, quarantine officers may also

- ▶ perform visual screening of travellers arriving on international flights from an area affected by this outbreak; and
- ▶ assess travellers identified by screening measures, such as thermal scanning.

More detailed information about the *Quarantine Act* and regulations can be found at <http://laws.justice.gc.ca/en/Q-1/index.html>

5.2 Airport Screening Measures

HC has traveller screening activation plans in place for international airports where screening measures may have to be implemented or enhanced within 24 to 48 hours. The criteria to assist with decisions about the level of response needed at airports include the following categories of information:

Epidemiology/Disease Characteristics:

- ▶ morbidity and mortality
- ▶ ease/rapidity of spread
- ▶ number of global cases/exposures
- ▶ characteristics of local outbreaks

Geographic Factors

- ▶ location of outbreak
- ▶ volume of travel
- ▶ border and local resources

Other Factors

- ▶ adequacy of global surveillance/control
- ▶ community response levels
- ▶ need for urgent public health action
- ▶ risk of public panic
- ▶ various economic and other social factors

Although there are currently no reported SARS cases anywhere in the world, Health Canada is maintaining vigilance at Canada's airports and will continue to do so.

- ▶ Quarantine Officers will be available at the Toronto, Vancouver, Montreal, Calgary, Ottawa, Edmonton and Halifax international airports.
- ▶ Travellers are asked to continue to monitor their health and report signs of illness.
- ▶ Although the yellow and cherry Health Alert Notices that have been used until now will be discontinued, Health Canada will distribute an Infectious Disease Brochure to all Canadian international airports, travel medicine clinics and through the Health Canada and the Department of Foreign Affairs and International Trade travel medicine web sites.
- ▶ Although the use of thermal scanners is being discontinued for the time being, it can be re-instated at Canada's airports within 24-48 hours if an infectious disease outbreak occurs.

Information about the thermal scanners used and the assessment results can be found at <http://www.hc-sc.gc.ca/pphb-dgsp/sars-sras/tis-it/index.html>

These screening measures will be phased in during December, 2003 and are in keeping with the recommendations in the Naylor Committee Report.

5.3 Travel Advisories

Health Canada's Travel Medicine Program provides information for people travelling outside Canada and for travel medicine professionals who provide advice to international travellers. Travel medicine information can be accessed 24 hours a day through the Internet and offers details on international disease outbreaks, immunization recommendations, general health advice for travellers, the location of travel clinics in Canada, and disease-specific treatment and prevention guidelines.

Health Canada is working with the international public health community towards consensus on the issuance of travel advisories to citizens. In a global outbreak, Health Canada's Travel Medicine Program will issue advisories to Canadians on the basis of global surveillance and liaison with the WHO and CDC.

More information about Health Canada's Travel Medicine Program, including current advisories on infectious diseases and historical information about SARS-related travel advisories can be found at <http://www.hc-sc.gc.ca/pphb-dgspst/tmp-pmv/index.html>

6.0 Education and Training for Public Health Professionals

Health Canada provides information and training in various formats for front line public health workers across the country who require both basic information about current recommended disease management practices as well as opportunities for continuous learning. Health Canada's existing educational programs are being augmented by additional learning tools and delivery modes.

Educational Material

Health Canada's multiple guidelines and protocols related to surveillance, case tracking and infection control represent a basic educational package for front line health care workers. Health Canada will consolidate this into a single package for wide dissemination to the public health community in addition to making it available on its Website.

Distance Learning Modules

Health Canada currently offers the Skills Enhancement for Health Surveillance training through distance education modules. Three modules currently available cover

- ▶ basic epidemiological concepts

- ▶ measurement of health status
- ▶ epidemiological methods

Additional modules on Outbreak Investigation and Management will be offered as elements become ready, between March and June 2004, covering the following:

- ▶ general principles and overview of outbreak investigation
- ▶ steps in an outbreak investigation
- ▶ operational aspects of outbreak investigation

Further modules on Biostatistics, Survey Methods and Applied Epidemiology will be offered in December 2005.

The material for these distance learning modules is developed in consultation with provinces, territories, universities, professional organizations and other stakeholders. More detailed information on Skills Enhancement for Health Surveillance modules can be found at http://www.hc-sc.gc.ca/pphb-dgsp/csc-ccs/skills_e.html.

Training Workshops

A 3-5 day intensive workshop session on outbreak investigation and management for front line public health professionals will be delivered in spring 2004 as a pilot project for annual, regionally based skills enhancement workshops. This learning material will be linked to the distance learning modules to encourage continuous upgrading of skills in surveillance, outbreak response and epidemiology.

The Canadian Field Epidemiology Program

Field epidemiologists are disease investigators; they are invited on site to study diseases in order to better understand and control them. This involves helping the investigation team define, find and interview cases, coordinate the collection and analysis of specimens, apply statistical methods to assess factors responsible for illness and recommend control measures.

Health Canada's Field Epidemiology Program was established in 1975 to provide specialized training for health professionals in the practice of applied epidemiology. This 24-month program develops skills and competencies that are not easily taught in academic or workplace settings. During the 2-year placements, field epidemiologists are available to assist with surveillance and outbreak investigations in any jurisdiction. The program staff ensure that the activities of field epidemiologists support both their own learning requirements and the needs of the requesting agency. Each year, five field epidemiologists are selected from physicians and others with public health and epidemiology training to

participate in the program. Additional information on the Canadian Field Epidemiology Program may be found at <http://www.fetp.ca>.

7.0 Public Communication

The outbreak of SARS in Canada demonstrated that the efforts to disseminate quality information and to contain the public anxiety aroused by a mysterious new and deadly disease is as important as battling the disease itself. The communications challenges cross multiple dimensions: public confidence and anxiety; stigmatization of cultural communities; economic impacts; scientific developments; and, stakeholder interests (travel industry, etc.).

Health Canada has developed a public communications response plan in the event of a re-emergence of SARS either in Canada or abroad. This plan utilizes the Health Canada's Crisis/Emergency Communications Guidelines, which is intended to serve as a guide for Health Canada's communications response in the event of a health-related emergency or crisis. It is comprised of Crisis Communications Guidelines and Emergency Communications Guidelines, along with communications tools that can be applied to both (<http://www.hc-sc.gc.ca/pphb-dgspssp/sars-sras/cecg-ctcu/hc-cecg.pdf>).

In addition, Health Canada is developing an F/P/T public communications protocol in order to better ensure coordination and consistency between the federal, provincial and territorial governments in the event of the re-emergence of SARS. This protocol, developed in consultation with the provinces and territories, acknowledges the multi-jurisdictional nature of SARS-like events, and the need for all health partners to work closely together.

8.0 Research

National SARS Research Consortium

The Canadian Institutes for Health Research, Health Canada, Genome Canada and others have created a Canadian SARS Research Consortium (CSRC) to coordinate, promote and support Canadian research on the causes, control and consequences of SARS and newly emerging infectious diseases. As a first activity, the CSRC has developed a SARS research agenda. This comprehensive Canadian research agenda focuses on five broad research areas: diagnostics; vaccine development; therapeutics; epidemiology and databases; and public health and community impact. Researchers will be asked to take into account work already in progress and identify gaps that must be addressed in order to create a coherent national research agenda.

More detailed information about the National SARS Research Consortium can be found at <http://www.cihr-irsc.gc.ca>.

Health Canada

Within a few weeks of the global alert on SARS, key laboratories that are part of a global network (including Health Canada's NML) had identified the virus. This rapid scientific progress illustrates the importance of collaboration among laboratories in the course of the search for vaccines and rapid diagnostic tests. Health Canada is supporting and conducting continued research on SARS. It is directly funding and participating in several follow-up studies to clarify the epidemiology and spectrum of disease caused by the SARS coronavirus in Ontario. The NML has an extensive research program on SARS coronavirus, including research on new diagnostic tests, the development of animal models of SARS coronavirus infection, treatment of SARS and the development of a SARS coronavirus vaccine.

SARS Research Conference

A Health Canada scientific symposium on December 1-2 at the NML in Winnipeg will review the current knowledge base for SARS, progress on Canadian SARS research and preparedness for the current respiratory infections season.

Information about the symposium can be found at <http://www.nml.ca/english/SARScconference.htm>