This Report is dedicated to those who lost their lives or a loved one as a result of SARS, and to the healthcare providers who valiantly dealt with the disease on a daily basis.

Members of the Expert Panel on SARS and Infectious Disease Control

The members of the Expert Panel on SARS and Infectious Disease Control are:

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And Helen Stevenson, who did the final editing and layout of this Report.

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Executive Summary and Recommendations

Executive Summary

> *In March I arrive for work to a changed world. I endure my first screening, fill out forms, wait in line, have my temperature checked and am chastised for not having my ID with me. Bewildered, I make my way through the emerg staff entrance and encounter the re-designation of the area to a "clean zone" where I don the now requisite gowns, gloves, masks and goggles.*
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> …
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> *Our workplace becomes a "level 3" facility and is transformed into what looks like the set of a science fiction movie. I am ordered into quarantine and feel as though such a restriction could apply only to some plague-threatened inhabitant of the Middle Ages. I venture out just to travel to work. Our emerg shuts down, but our ill colleagues stream in. The hospital has the feel of a ghost town – I see nurses and physicians cry.*
>
> …
>
> *While my experience pales in comparison to the anguish of those who have been stricken with SARS and of those who have lost the people they loved most in the world, I am nonetheless one of many whose personal and professional lives are irrevocably and permanently changed. Understanding the scope of those changes and grasping the extent of the personal impact will remain a work in progress for some time to come.*[1]

For all those who contracted SARS, those forced into quarantine and their families and friends, as well as the patients and healthcare workers who experienced challenges first hand, the SARS outbreak represented a frightening and immensely stressful period. For Ontario, SARS was a public health emergency without precedent. Those within the healthcare system responded heroically, often jeopardizing their personal safety to care for others. Time and time again, frontline healthcare providers demonstrated their extraordinary commitment to providing high-quality care to patients, families and colleagues.

While recognizing the tremendous efforts made by all the people involved, it is clear that SARS exposed a general lack of preparedness for managing health emergencies and presents an open door for positive change. Ontario is far from alone in attempting to learn lessons from SARS; many jurisdictions including Hong Kong, Singapore, and the United States have also undertaken their own studies.[2] The Panel trusts that this Report, together with our final report, will contain valuable insights that may be of use both to Ontarians and to those beyond our province.

In moving forward to begin to build a better system for the future, we need to remember and honour these incredible and inspiring examples of courage and dedication. We believe that our Panel has tried to do that.

The Expert Panel on SARS and Infectious Disease Control was established by the Minister of Health and Long-Term Care in May 2003. We were asked to identify the key lessons learned from this experience and to provide practical, focused, and forward-looking recommendations regarding the management and control of infectious diseases and the capacity of Ontario to handle public health emergencies in the future.

The Panel approached its work by viewing SARS not simply as an isolated disease requiring a single set of interventions, but rather as a warning that vividly illustrated the strengths and weaknesses in our healthcare system and demonstrated what needs to be in place in order to deal with the next health emergency of this or greater magnitude.

The content of this Report has been informed by submissions from and interviews with various frontline healthcare providers and experts from facilities and organizations across the province. These inputs were of invaluable assistance to our work and we thank those many individuals who took the time to share their thoughts with us.

Furthermore, we attempted to ensure consistency with the overall conceptual framework for revitalizing public health in Canada set out in the Report of the National Advisory Committee on SARS and Public Health, *Learning from SARS: Renewal of Public Health in Canada*.

This Report constitutes the first phase of the Panel's work; it focuses on the systemic and policy challenges raised by SARS and prioritizes the areas that require short-, medium- and long-term actions. The Report also produces realistic and achievable recommendations that highlight the areas where action is required on an urgent basis. The Panel believes that provincial and federal efforts to improve public health and emergency preparedness must be coordinated and complementary. Specifically, an overarching recommendation is that Ontario play an active role in ensuring that concrete progress is made to rejuvenate public health at the provincial and federal levels consistent with the National Advisory Committee Report.

This first Report covers six key areas – Public Health Models; Infection Control; Emergency Preparedness; Communications; Surveillance; and Health Human Resources. Highlights of the Panel's key findings and recommendations in each of these areas are set out below.

Public Health Models

In the aftermath of the SARS outbreak, the need for a comprehensive review of Public Health in Ontario became clear. We heard that there are numerous challenges: a lack of human resources, inadequate and out-dated organizational structures, and insufficient capacity or critical mass to respond effectively to major health emergencies.

To address the human resource issues, the Panel is convinced of the need to embark on a comprehensive public health human resource revitalization strategy. This strategy should include an increased capacity for education and training, campaigns to promote public health careers, and a review of current recruitment and retention strategies for Medical Officers of Health and their staff.

Equally important is the need to remedy the apparent structural and organizational problems. In this regard, the Panel endorses the establishment of a Health Protection and Promotion Agency in Ontario, which would report annually to the legislature and have responsibility for the Ontario Public Health Laboratory, existing provincial public health resources, and a new Division of Infection Control. In addition, we believe there needs to be urgent legislative amendment to provide clear authorization for the Chief Medical Officer of Health to report directly to the legislature.

Further, the large number of Public Health Units in Ontario does not always allow for a critical mass to support comprehensive expertise and capacity on a regional basis. The Panel therefore supports consolidating the number of Public Health Units on a regional basis within two years. In addition, an external review is needed to evaluate the capacity of the provincial Public Health Division, in relation to such things as staffing, information technology, epidemiological analysis, authority and overall centralized capacity to manage future outbreaks.

The Panel has been made aware of the issues surrounding the municipal role in funding of Public Health in Ontario. We therefore urge the re-structuring of the present municipal-provincial cost-sharing agreement so the province funds 75% to 100% of public health resources within two to five years. In the short-term, full provincial funding of the 180 staff positions committed to Public Health Units as part of the Ontario SARS Short Term Action Plan must continue beyond March 31, 2004.

Finally, we believe that a mechanism to measure progress with respect to public health renewal in Ontario, and thereby to ensure accountability, is required. We recommend that an independently prepared annual

performance report be established and provided to both the legislature and the public.

The Panel proposal to strengthen the monitoring and enforcement of the *Mandatory Health Programs and Services Guidelines* is also, we believe, consistent with the direction taken in the most recent Provincial Auditor's report.[3]

Infection Control

In recent years, too little attention has been paid to infection control. SARS highlighted to the Panel key shortfalls in areas such as infection control standards, human resources, facility design, and infection control training. The Panel also heard that there is a need for regional infection control expertise; this could be accomplished through the establishment of Regional Infection Control Networks with membership drawn from hospitals, long-term care facilities, community healthcare providers, and Public Health Units. Healthcare providers informed us that the absence of consistent, broadly applicable and enforceable standards for infection control practices and facility design was a major impediment to effectively containing infection. The Panel has therefore recommended establishing a standing Provincial Infection Control Committee to supervise infection control audits, and to develop standards as well as mechanisms to ensure compliance.

It is also very clear that there is an acute shortage of infection control practitioners and physicians. This is partly due to a lack of educational programs to properly train and certify infection control practitioners, as well as other specialists in infection control. Students in healthcare programs may not be consistently receiving core training in infection control. Moreover, there is a clear need for tailored infection control training for all workers across every sector of the healthcare system. The Panel recommends a series of measures to build infection control knowledge and skills among all healthcare workers. This could include 'train the trainer' initiatives in order to: facilitate accessible infection control training for all healthcare workers; expand programs to train infection control practitioners as part of their eligibility for certification; establish standards for infection control education; and include infection control as a core curricular element for health-related educational programs at colleges and universities. The Panel further recommends that targeted funding be established for infection control programs in Ontario.

Emergency Preparedness

SARS tested Ontario's preparedness for a health emergency – and it was found to be lacking. The Panel heard that there was no plan for the health system to respond to a communicable disease emergency in a coordinated manner. This resulted in unclear roles and responsibilities, including lines of authority, communication, and reporting relationships among different levels of government. The Panel also learned that there was no comprehensive emergency preparedness planning for hospitals and non-acute facilities on a regional basis. In addition, 'Code Orange' and hospital visitor policies enacted during SARS were not without significant problems.

Another major problem highlighted during SARS is the lack of surge capacity in Ontario's healthcare system, in relation to bed capacity, health human resources, and the supply of personal protective equipment.

As an immediate measure, Ontario's current state of health emergency preparedness in the following areas should be reviewed and assessed: patient transfer; rapid hospital discharge; the CritiCall program; and, the capacity to obtain and distribute supplies.

To facilitate an effective response to any future health emergency, the Panel recommends creating an Office of Health Emergency Preparedness (OHEP) within the Ministry. OHEP would have formal linkages to the Ministry of Community Safety and Correctional Services, and liaise with Emergency Management Ontario. The Panel also recommends an immediate review of existing emergency powers and related legislation, with the goal of establishing a graduated and nationally harmonized response system for health emergencies

Finally, the Ministry should support the creation of additional mechanisms to rapidly deploy healthcare personnel during an emergency and support the development of a new hospital code for infectious disease outbreaks.

Communications

During the SARS outbreak, both the public and healthcare providers needed credible, clear, and timely information. However, providing this information was hampered by the fact that SARS was a disease about which little was known. That said, it became apparent to the Panel that this difficult situation was worsened by the following: there was no clear public health risk communications strategy in place even though there was a provincial crisis communications strategy pre-existing SARS; there were no direct lines of contact to healthcare providers; and there was a need to

respond to diverse healthcare groups in a clear manner according to their respective needs. The directives issued from the Provincial Operations Centre, later the SARS Operations Centre, have received considerable comment, with the primary concerns focused on the frequent changes made to the directives and the lack of a comprehensive system for feedback and clarification. There were also significant deficiencies in technical aspects of the province's communications infrastructure, notably the inability to reach many community-based healthcare providers and to allow for two-way communications. These deficiencies further complicated the interpretation and implementation of the directives, and prevented the timely sharing of information.

The Panel believes that a critical building block to ensure effective communication during a health emergency is the development of a technologically advanced infrastructure that reaches all key healthcare stakeholders and practitioners in a timely fashion. This should allow for two-way communications through multiple modalities. Also, the province needs a public health risk communications strategy, which includes risk communications protocols providing information that is clear, concise, credible, accessible, and easy to implement. Furthermore, the Ministry should develop an awareness plan to educate the public concerning public health and infection control. The Panel also recognizes the importance of liaising with Health Canada to ensure consistent messages, clearly designated points of contact during a crisis, and alignment of roles and responsibilities.

Surveillance

The Panel learned that efforts to contain SARS were impeded by the absence of a comprehensive provincial infectious disease surveillance plan. This was further complicated by the lack of a suitable information technology infrastructure to support such a plan, in relation to both gathering and disseminating information. Furthermore, RDIS, (the Reportable Diseases Information System), the information system provincially mandated for use by all health units, was functionally incapable of supporting timely outbreak investigation. The surveillance instrument currently being used by Public Health Units, does not provide for real-time collection of information. In addition, the Panel strongly recommends remedying the perceived barriers to the sharing of information that existed during SARS.

The Panel believes that these are serious deficiencies warranting immediate attention. A comprehensive provincial surveillance plan must be developed as a first priority, and efforts must be made to ensure that an appropriate

information technology infrastructure is in place to support this plan. In addition, the Integrated Public Health Information System (iPHIS) must be implemented across all Public Health Units on an expedited basis, together with the necessary information technology supports to allow effective contact tracing and quarantine management by public health officials. Data access and data sharing protocols, as well as relevant privacy legislation, must also be reviewed on an urgent basis and amended as necessary to facilitate these public health goals.

Health Human Resources

The Panel heard about the already apparent shortage of healthcare professionals, particularly those critical to combating infectious disease outbreaks such as critical care and emergency nurses, infectious disease physicians, microbiologists, epidemiologists, public health physicians and nurses, infection control practitioners, occupational health and safety staff, and respiratory therapists. Alongside these general shortages, it became apparent during SARS that the skills of some existing professionals are not used optimally. Similarly, the availability of full-time employment for many healthcare workers is clearly inadequate, and the Panel believes that existing rates of casual, part-time, and agency employment are undermining efforts to ensure a stable and cohesive work place. The Panel learned that the profile of occupational health and safety in healthcare workplaces is far too low, and that the role of occupational health and safety during an infectious disease outbreak is unclear. The proper use, efficacy, and availability of personal protective equipment became a prominent issue across most healthcare sectors. Finally, the immense personal stress experienced during SARS demands a review of the mechanisms to provide accessible, confidential, and broadly available psychological and social support to both workers and their families.

The Panel supports ongoing efforts to increase enrollment in key health professions. As well, we believe that at least 70% of hospital healthcare worker positions should be full-time. In the interim, further methods to efficiently use existing healthcare workers during an emergency must be developed. As an immediate step, we recommend hiring two Medical Microbiologists for the Ontario Public Health Laboratory.

The Panel also believes that current practices in occupational health and safety need to be reviewed and recommends developing best practices identified and broadly disseminated, particularly with respect to the interface between occupational health and infection control. In addition, evidence-based best practices concerning the use of personal protective equipment should be developed and broadly disseminated. Finally, as part

of contingency planning for health emergencies, we should put in place programs to compensate healthcare workers for lost income and to ensure the rapid provision of psycho-educational and psychological support.

Implementation

The Panel recognizes that there is a need for its work to be consistent and to integrate with that of the work of Dr. David Naylor and the National Advisory Committee on SARS and Public Health. In addition, a single, effective mechanism to coordinate and facilitate implementation of the recommendations contained within this Report is required. The Panel therefore recommends that a single body be established to oversee the implementation process, with its work aided by a multi-disciplinary Expert Advisory Group. The Panel also urges the Minister of Health and Long-Term Care to table a progress report regarding the implementation of the recommendations no later than December 2004.

Looking to the Final Report

The Panel will continue to examine the above-mentioned issues in more detail in the next few weeks and will report back to the Minister with additional recommendations in February 2004. Significantly, we will provide recommendations on how an Ontario Health Protection and Promotion Agency might best fit into a comprehensive national public health framework.

Over the coming weeks, this next phase of work will be informed by further discussions with healthcare providers and a series of independent research projects currently underway. We also expect to benefit from discussions and debates in other forums about the future national framework for public health.

In moving forward to build a better system for the future, we need to remember and honour the inspiring examples of courage and dedication during SARS. The Panel therefore strenuously advocates that Ontario have the courage and passion to be at the forefront of crafting a new vision and structure for public health, for this province and for all of Canada. Our vision is that Ontario's actions to strengthen the capacity to prevent and respond to infectious diseases become a pillar for the national public health renewal process.

Recommendations

Chapter One: Public Health Models

Health Protection and Promotion Agency

1. The Ministry should immediately proceed with developmental work to establish a Health Protection and Promotion Agency in Ontario. The Agency should be required to report annually to the legislature through the Chief Medical Officer of Health and include the following core components:

    a. The Ontario Public Health Laboratory.
    b. Relevant existing Public Health provincial resources.
    c. A Division of Infection Control, whose mandate would include research, training, monitoring and best practice dissemination.

    The Agency should also be designed to enable linkages with the proposed Canadian Public Health Agency, the proposed National Public Health Laboratory Network, and appropriate research centres.

Independence

2. The Ministry should immediately amend the *Health Protection and Promotion Act* to provide clear authorization to the Chief Medical Officer of Health to:

    a. report to the legislature
    b. issue public comment on matters of significant public health importance independently of the Minister of Health and Long-Term Care.

    Such a provision should be enacted at the earliest possible opportunity.

Public Health Human Resource Revitalization Strategy

3. It is recommended that Ontario immediately initiate discussions with the Association of Local Public Health Agencies (alPHa), Association of Municipalities of Ontario (AMO), and existing F/P/T processes, to design a Public Health Human Resource revitalization strategy. The strategy should contain the following components:

    a. The development, through the Ministry of Health and Long-Term Care and the Ministry of Training, Colleges and Universities, of an

increased capacity for the education and training of public health professionals. This could include increasing enrollment numbers at educational institutions as well as increasing post-graduate training positions or residencies.

b. The development and support of a provincially funded training and education program for existing public health staff, with a focus on infection control. This should build upon the existing Public Health Research, Education and Development (PHRED) program. Special emphasis should be placed on promoting cross-training opportunities between public health, acute care, long-term care, and other sectors.
c. The development, in partnership with HRDC and educational institutions, of a comprehensive campaign to promote public health careers in Ontario.
d. The development of re-entry training positions in community medicine such that practitioners currently practicing in other specialties can become qualified to work in public health.
e. The development of bridge training programs intended to update the skills and qualifications of skilled individuals with previous public health experience. This should be offered together with incentives to recruit back such individuals currently practicing in other fields.
f. A review of recruitment and retention strategies for Medical Officers and Associate Medical Officers of Health, including remuneration.

The Ministry should provide a progress report on this strategy to the Minister by June 1, 2004.

Provincial/Municipal Funding

4. Ontario should immediately dedicate 100% provincial funding beyond March 31, 2004 for the 180 positions committed to Public Health Units as part of the Ontario SARS Short-Term Action Plan.

   Ontario should further develop an independent process and establish timelines for the establishment of 100% funding of all communicable disease programs in public health. This should be completed by December 31, 2004.

   All such funding should be conditional on the Public Health Units supporting re-deployment of these communicable disease resources in the event of a public health emergency, as part of constructing province-wide public health surge capacity.

5. Ontario should immediately re-structure the existing cost-sharing agreement for public health with the municipalities to move to between 75% and 100% provincial funding of public health. Programs, including

communicable disease programs funded at 100% by the province should be protected at 100%.

Implementation of the new cost-sharing agreement should be phased in within two to five years.

Public Health Units

6. The Ministry should review, in conjunction with the Medical Officers of Health, the Association of Local Public Health Units and the Association of Municipalities of Ontario, the existing number of public health agencies in the province. Within two years, the Ministry should act on the results of the review to consolidate the number of Public Health Units to between 20 and 25 units, retaining local presence through satellite offices.

Health Protection and Promotion Act – Compliance

7. The Ministry should immediately examine approaches to strengthen compliance with the *Health Protection and Promotion Act* and associated *Mandatory Health Programs and Services Guidelines*, in particular with regard to the resourcing and provision of mandatory health programs and services.

Public Health Division Capacity Review

8. The Ministry should immediately undertake a comprehensive external review of existing provincial Public Health Division capacity. The Ministry should act on recommendations arising from this review to revitalize provincial public health capacity within the context of public health renewal.

Performance Review for Public Health

9. Ontario should establish an annual performance report for public health in Ontario to be tabled to the legislature and disseminated to the public. This report should be prepared by appropriate third-party research organization body and should indicate the status of the following areas:

    a. Human resources
    b. Information technology
    c. Facility-acquired infections
    d. Mandatory program and service compliance
    e. Health of the population
    f. Central epidemiological capacity

Chapter Two: Infection Control

Regional Infection Control Networks

10. The Ministry should establish a process to develop Regional Infection Control networks across Ontario, with a designated hospital and Public Health Unit as joint leads in the development process. The networks should include but not be limited to Public Health Units, hospital infection control practitioners, Emergency Health Services, long-term care, and community-based healthcare providers.

Standards, Accreditation and Monitoring

11. The Ministry should immediately establish a standing Provincial Infection Control Committee that would report to the Chief Medical Officer of Health. The Committee would have the following functions:

    a. Supervise audits already underway of hospital infection control policies, programs and resources, and undertake additional audits in remaining Ontario healthcare facilities and organizations, to be completed by the summer, 2004.
    b. Informed by the results of these infection control audits, develop comprehensive provincial infection control standards for all healthcare facilities in Ontario, including acute and non-acute care hospitals, long-term care facilities, and primary care/community settings. Guidelines should be completed by October 31, 2004.
    c. Develop standards in collaboration with Health Canada.
    d. Develop appropriate mechanisms to ensure compliance for both existing infection control standards and new comprehensive provincial infection control standards.

12. The Ministry, together with the Provincial Infection Control Committee, and in conjunction with the Ontario Hospital Association, the Institute for Clinical Evaluative Sciences (ICES), and the Community and Hospital Infection Control Association, should develop core indicators for monitoring facility-acquired infections. This data should be reported as part of the annual status report on public health.

Facility Design

13. To ensure the appropriate supply and distribution of negative pressure rooms between and within hospitals, the Ministry should immediately undertake an independent evidence-based needs assessment, reporting back to the Minister by March 1, 2004. Informed by the results of this assessment, the Ministry must ensure that there is a sufficient supply of negative pressure rooms on a regional basis.

14. The Ministry must initiate a collaborative process with the Ontario Hospital Association to identify hospital physical plant barriers to

effective infection control and develop a multi-year implementation plan for their removal. Emergency rooms should be examined as a first priority, to be followed by intensive care units and wards.

Training and Orientation

15. The Ministry, in conjunction with the Ministry of Training, Colleges and Universities, should ensure adequate funding for the expansion of existing courses in infection control so that they can be made more widely available and accessible to all health professionals. This funding should encompass the:

    a. development of an online format for the existing course
    b. development of distance education initiatives
    c. provision of adequate reimbursement for the costs of attending or participating in such a course.

    Such funding should be in place April 1, 2004.

16. The Ministry must immediately develop strategies to achieve a minimum target of one infection control practitioner per 250 acute care and long-term care beds, and to work toward achieving a target of one infection control practitioner per 120 acute care and long-term care beds within three years. These strategies must include mechanisms for recruitment and retention of infection control practitioners.

17. The Ministry should support the development of 'train the trainer' initiatives by providing adequate funding to allow existing experienced and qualified infection control practitioners to act as educators of other healthcare professionals in infection control principles. The necessary level of such funding should be determined and made available by April 1, 2004.

18. The Ministry should actively engage and support regulatory bodies and professional associations in their review and updating of standards for the infection control education and maintenance of core competencies of all healthcare workers. The Ministry should also work to develop standardized educational programs that reflect these principles. The development of such standards should be complete by June 30, 2004.

19. The Ministry, the Ministry of Training, Colleges and Universities, the Council of Faculties of Medicine, the Canadian Association of Schools of Nursing, and other relevant bodies should work together to define core curricular elements of infection control education for all healthcare education programs and begin steps to establish these elements within such programs. The Ministry should establish a working body to

accomplish these goals by February 1, 2004, and curricular outlines should be in place by June 30, 2004.

Funding of Infection Control Programs

20. The Ministry, in collaboration with the Ontario Hospital Association, the Ontario Long Term Care Association, and the Ontario Association for Non-Profit Homes and Services for Seniors, should develop mechanisms to provide targeted funding for infection control programs within facilities and organizations, such as the development of a hospital Priority Program for infection control. This funding should provide for necessary human resources, such as infection control practitioners and infectious disease specialists. A status report on the development of these mechanisms should be provided to the Minister by June 30, 2004.

Chapter Three: Emergency Preparedness

21. The Ministry should immediately create an Office of Health Emergency Preparedness (OHEP) with appropriate staffing and authority and with a formal link with the Ministry of Community Safety and Correctional Services. The office should be established by April 1, 2004 and should:

    a. report to the Deputy Minister through a Health Emergency Preparedness Committee. The Committee should oversee the establishment of the office and its mandate, and provide ongoing advice and strategic direction for the OHEP
    b. provide leadership with respect to the Ministry's emergency preparedness activities
    c. ensure implementation of the recommendations below within the timelines stipulated. Until such time as the OHEP is operational, the Ministry must act on these recommendations in its place.

22. Once established, the OHEP should act as Ministry liaison with Health Canada, Emergency Management Ontario, and other relevant organizations regarding public health emergency preparedness. Specifically, the OHEP should begin to work closely with Health Canada in three areas:

    a. Ensuring the relevance and readiness of any emergency stockpile system and of appropriate provincial linkages and protocols as required for the purposes of coordination.
    b. Developing the Health Emergency Response Team program.
    c. Harmonizing federal and provincial emergency preparedness and response capacities for public health emergencies.

23. The Ministry should move promptly to review and assess specific areas of emergency preparedness, and create action plans and recommendations through advisory committees with clinical and operational expertise. The key areas for review and assessment are:

    a. The development of emergency protocols for patient transfer, including an objective evaluation of the Patient Transfer Authorization Centre system.
    b. A review of the accuracy and utility of the CritiCall Program. This should include an analysis of the role that the CritiCall Program and Central Bed and Resource Registry could play in the management of future outbreaks and the checks or mechanisms required to ensure data accuracy.
    c. The development of formal emergency protocols for rapid discharge of hospital Alternate Level of Care patients from hospital to alternative sites, specifically long-term care facilities. This should include a review and analysis of the use of the category 1A crisis designation under the regulatory provisions governing the placement coordination system under long-term care legislation.
    d. Provincial, regional, and institutional capacity to obtain and distribute supplies and equipment during infectious disease outbreaks and other public health emergencies.

    The Ministry should report the results of the review and present the accompanying action plans to the Minister by March 1, 2004.

24. Once the OHEP is established, it should have a dedicated website to raise public awareness and promote the transparency of the Ministry's preparedness activities. The OHEP should use this website to post reference documents, appropriate contingency plans, and promotional materials concerning Ministry and health sector emergency preparedness. Until the OHEP is fully operational, the Ministry should immediately post all contingency plans on the Ministry website.

25. The Ministry, and with the OHEP in a coordinating and monitoring role once it is established, should immediately update and test a generic plan or standard operating protocol for the provincial response to infectious disease outbreaks and public health emergencies, including bioterrorism. This plan should be complete by June 2004 and should be posted on the OHEP or Ministry website as soon as it is complete. As an interim measure, the Ministry should post on its website a summary of the main roles and responsibilities of government and independent organizations in planning and responding to public health emergencies by February 1, 2004.

26. The Ministry, and with the OHEP in a coordinating and monitoring role once it is established, should broadly disseminate contingency plans for pandemic influenza and smallpox by March 15, 2004. These plans should be posted on the Ministry website.

27. a. The Ministry, together with professional associations, regulatory colleges, and the OHEP in a coordinating and monitoring role once established, should continue to develop provincial registries to provide rapid deployment of healthcare personnel. An action plan for developing these registries should be presented to the Minister by February 1, 2004. Registries should be tested and evaluated within 12 months of their inception.
    b. The Ministry should initiate the ongoing development of cross-jurisdictional mutual aid agreements with other provinces and territories that provide for appropriate health human resources deployment, inter-jurisdictional licensing of professionals, compensation and remuneration agreements, and provision of supplies and equipment. The Ministry should provide a status report on this review by April 1, 2004.

28. The Ministry, in conjunction with the Ontario Hospital Association (OHA), Canadian Hospital Association (CHA), and other appropriate organizations, should immediately examine the development of a specific code for Infectious Disease Outbreaks. Ideally, this code would be adopted nationally and be reflected in appropriate contingency planning at the provincial and federal levels.

29. The Ministry, along with the Ministry of the Attorney General and other appropriate Ministries, should conduct a thorough review of existing emergency powers and related legislation with a view to establishing a graduated system for responding to health emergencies. A status report on this review should be submitted to the Minister of Health and Long-Term Care and the Minister of Community Safety and Correctional Services by March 1, 2004.

    As a second phase, the Ministry and the federal government should work together to ensure harmonization of emergency powers legislation by October 2004.

Chapter Four: Communications

30. By February 15, 2004, the Ministry should ensure that a health sector communications infrastructure is in place to reach all key stakeholders in a health emergency. This infrastructure should enable use of e-mail, facsimile, Internet and other technologically advanced modalities. It should be two-way, multi-functional and enable the Ministry to reach healthcare practitioners, healthcare organizations and institutions, support staff, educational institutions, emergency medical services, professional associations, licensing bodies and unions. This infrastructure should be tested and evaluated by March 31st, 2004.

    a. This infrastructure should facilitate the development of a formal Public Health Alert Network (PHAN), to provide communications concerning infectious disease outbreaks and public health threats to all healthcare providers.
    b. As critical to enabling this infrastructure, electronic literacy should be established as a basic standard of practice for all newly graduated healthcare practitioners within two years. Methods of ensuring the electronic competency of existing healthcare providers should be explored in collaboration with professional regulatory colleges within three years.

31. By January 15, 2004 the Ministry should review and update provincial crisis communications protocols to support the dissemination of information during a health emergency. These protocols should ensure:

    a. Early designation of a credible and consistent source of spokesperson(s) at the provincial level so as to deliver uniform and clear messages.
    b. Mechanisms are in place for two-way communications, which allow recipients to ask questions and receive clarification.
    c. Key personnel have specific communications training.
    d. Communications approaches are rapidly available in diverse languages and formats.

32. By March 1, 2004, the Ministry should develop a provincial public health risk communications strategy as part of overall contingency planning for a health emergency. This strategy should be based upon international best practices in risk communications, and should be shared with local and federal governments, and healthcare organizations to aid in the coordination of efforts and understanding of respective roles. The basis of this communications strategy should:

a. Build on and upgrade the use of proven effective communications vehicles, such as the use of web-based systems during SARS.
b. Include targeted approaches and tools for different audiences, such as healthcare providers and patients.
c. Be based upon strong links with Public Health Units.
d. Encourage and build upon public health risk communications networks.
e. Clearly identify provincial spokeperson(s) in a health emergency, building on trust and credibility.
f. Ensure that communications methods used during a health emergency are practical in nature. If directed to healthcare workers, communications should include proper techniques and best practices.
g. Incorporate effective means of educating the public about necessary screening measures, changes to visitor policies, and temporary restrictions of healthcare services. This should include the production of standardized material and notices to distribute to patients.
h. Make provisions for briefing sessions between the Ministry and healthcare providers, in the form of a webcast or other real-time communication mechanism, *shortly before* any public broadcast on urgent matters of public health.
i. Clarify, update and streamline policies and procedures regarding the use of the media in an emergency. This should include the continued use of effective media buying services to deliver public service messages.
j. Optimize use of health information hotlines for the public as part of overall contingency planning.
k. Include mechanisms to evaluate performance.

33. The Ministry should continue to liaise with Health Canada to ensure consistency and to clearly designate points of contact regarding risk communications plans. Formal memoranda of understanding should be reviewed and updated by March 1, 2004 so that they clearly outline roles and responsibilities. The Ministry should commit to review and update such agreements on a regular basis. Such reviews should include appropriate public health expertise and representation from OHEP.

34. The Ministry should immediately ensure that any written communication to healthcare providers during a health emergency is:

    a. clear, concise, and operationally viable
    b. based upon scientific evidence

c. supported by mechanisms for two-way communications and clarification.

35. By March 1, 2004, the Ministry should develop an enhanced plan to educate the public about possible or actual threats to public health and appropriate infection control measures. Healthcare organizations and professional associations should be engaged in developing and implementing this plan to ensure coordination of effort and to identify the most effective tools for healthcare providers to use in communicating with the public.

Chapter Five: Surveillance

36. The Ministry should build on work undertaken to-date and develop a comprehensive, provincial infectious disease surveillance plan by June 30, 2004. This work should:

    a. be carried out by a multi-disciplinary group, which includes scientific, government, information technology and healthcare partners, and which is accountable to the Minister of Health and Long-Term Care
    b. involve aligning and clarifying the roles of all post-SARS provincial advisory committees with working groups examining the issue of disease surveillance
    c. examine any opportunities or barriers to using existing tools such as Telehealth and Telemedicine
    d. include province-wide surveillance for facility-acquired infections.

37. The Ministry must ensure that an appropriate information technology infrastructure is in place to fully support the provincial infectious disease surveillance plan by June 30, 2004.

38. The Ministry should expedite the full implementation of the Integrated Public Health Information System (iPHIS), together with any required design modifications, across all Public Health Units in the province by June 30, 2004.

39. The Ministry must move rapidly to fully implement the necessary information technology supports to allow for contact tracing and quarantine management by Public Health Units by June 30, 2004. If this cannot be accomplished through design modifications to iPHIS, other suitable information technology platforms must be used.

40. The Ministry should establish a working group with representation from healthcare stakeholders, researchers, and the Ministry to review on an urgent basis all data access and data sharing protocols between Public Health Units, the Ministry, municipalities, and the federal government. This review should identify how and to whom identifiable personal information is authorized to flow in the event of an outbreak. The working group should submit a report to the Minister by March 31, 2004 outlining the common data sharing structure, reporting relationships, and other common requirements of the data access and sharing protocols.

41. The Ministry should undertake a detailed legislative review of the *Freedom of Information and Protection of Privacy Act* and the *Municipal Freedom of Information and Protection of Privacy Act* in the context of:

    a. the reporting requirements set out under the *Health Protection and Promotion Act*
    b. identifying potential barriers to the sharing of information in appropriate and timely manner
    c. ensuring appropriate protections for personal information.

    This review should be completed by March 31, 2004.

Chapter Six: Health Human Resources

Enrollment

42. The Ministry, together with the Ministry of Training, Colleges and Universities and professional bodies, should continue to support new initiatives to increase the enrollment numbers of key health professions, including medicine, nursing, and respiratory therapy. In addition to work already underway, attention should be given to enhancing training opportunities in epidemiology, medical microbiology, occupational health and safety, community medicine, critical care, emergency and public health. Plans for increased training capacity in these key areas should be in place for the 2005/2006 academic year and reported publicly.

Staffing Strategies

43. The Ministry must immediately fund a minimum of two additional Medical Microbiologist positions for the Ontario Public Health Laboratory.

44. The Ministry, in collaboration with professional regulatory colleges and professional associations, should begin to develop new models for the efficient utilization of existing health human resources during a health emergency. As part of this process, consideration should be given to

creative staffing models, and using professionals to their full scope of practice.

45. The Ministry should continue to establish sustainable employment strategies for nurses and other healthcare workers to increase the availability of full-time employment. Progress reports should be issued on an annual basis with a final goal of greater than 70% full-time employment across all healthcare sectors by April 1, 2005.

Occupational Health and Safety

46. The Ministry, together with the Ministry of Labour, should initiate a joint review of current Occupational Health and Safety (OHS) policies, procedures, and resources in the healthcare sector. This should be completed by June 30, 2004.

    Informed by the results of this review, the Ministry, the Ministry of Labour, healthcare providers, and relevant professional organizations should look to developing best practices in OHS, with a view toward defining the role of OHS during an infectious disease outbreak and the most appropriate interface between OHS and infection control programs.

47. The Ministry, together with the Ministry of Labour and professional associations, should support the ongoing development of best practices for the use of personal protective equipment by December 31, 2004. The Ministry should also ensure that, in conjunction with healthcare provider organizations, adequate vehicles are in place to educate appropriate groups of healthcare workers as to the proper use, and the associated evidence behind such uses, of personal protective equipment. In addition, Ontario should support both public and private sector research initiatives with respect to the efficacy and adverse effects of personal protective equipment.

Psychological support

48. The Ministry, in collaboration with professional associations and relevant experts, should develop a plan for the development and use of psycho-educational programs in emergency preparedness training. These programs should address the following:
    a. Preparing staff to deal with the consequences of emergency situations, including anxiety and depression.
    b. Developing coping skills.

    The programs should be developed by summer, 2004.

49. The Ministry, in collaboration with professional associations and healthcare employers, should ensure the availability of psychological support programs for healthcare workers as part of a robust plan for

emergency management. These programs should:

a. support all frontline workers
b. allow clear access to Employee Assistance Programs and other resources such as psychiatry
c. deal with issues of isolation and stigmatization
d. contacts and proactive approaches to manage work fatigue and workload stress.

Coordinated planning in this area should be initiated by February 2004.

Compensation

50. The Ministry should formalize, as part of its contingency planning for health emergency plans, mechanisms to quickly put into place programs, such as the SARS Compassionate Assistance Compensation Program for Healthcare Workers, to provide compensation for income lost as a result of being unable to work while ill, quarantined, or restricted to one facility as the result of a health emergency.

Process Recommendations

To ensure accountability and to facilitate a coordinated approach to implementing this Report, the Panel offers the following recommendations:

51. The Ministry of Health and Long-Term Care should establish a single coordinating body to oversee implementation of the recommendations contained within this report, within the stipulated timelines.

52. The work of this coordinating body should be guided and supported by a multidisciplinary Expert Advisory Group with representation from healthcare facilities and organizations, healthcare professionals and their associations, and the scientific community.

53. In recognition of those affected by SARS and to ensure accountability to the public with respect to the implementation of these recommendations, the Minister of Health and Long-Term Care should table a progress report in the Legislature no later than December 2004.

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1. Ellacott K. Behind the mask. *Regist Nurse J.* 2003;15(4):12-6.

2. SARS Expert Committee. *SARS in Hong Kong: from experience to action*. October 2003. [Online] Available at: http://www.sars-expertcom.gov.hk/english/reports/reports/reports_fullrpt.html . Accessed October 19, 2003 ; Hong Kong Hospital Authority. *Response to the Report of the Hospial Authority Review Panel on SARS Outbreak*. October 16, 2003. [Online] Available at: http://www.ha.org.hk/sars/ps/report/reviewpanel_e.pdf. Accessed October 20, 2003; Kanof E. *Severe Acute Respiratory Distress Syndrome: established infectious disease control measures helped contain spread, but a large-scale resurgence may pose challenge*. Testimony before the Permanent Subcommittee on Investigations, Committee on Governmental Affairs, U.S. Senate. July 30, 2003. [Online] Available at: http://www.gao.gov/new.items/d031058t.pdf. Accessed November 15, 2003.

3. Office of the Provincial Auditor of Ontario. *2003 Annual Report. Chapter 3: Report on value for money (VFM) audits: Section 3.09; Public health activity*. 2003. [Online] Available at: http://www.auditor.on.ca/english/reports/en03/309en03.pdf. Accessed November 6, 2003.

Introduction

Introduction

…In March I arrive for work to a changed world. I endure my first screening, fill out forms, wait in line, have my temperature checked and am chastised for not having my ID with me. Bewildered, I make my way through the emerg staff entrance and encounter the re-designation of the area to a "clean zone" where I don the now requisite gowns, gloves, masks and goggles.

I negotiate the note writing, medication mixing and a multitude of other tasks with my dexterity impaired by gloves. Nothing however compares to the mask. A pounding headache, lethargy and disorientation appear a short time into each shift and last through the remaining long hours

In late-March I assist with the difficult intubation of a health-care worker. I later learn that colleagues at another facility contracted SARS from such an intubation and it becomes apparent that current precautions are not sufficient. Our protective clothing requirement is increased to two layers and I pray that this has not come too late for those of us who struggled to save a colleague's life that night.

While carrying out the labour intensive screening tests on a suspect patient, I become over-heated under all the layers, dizzy and light headed from the lack of air. As I'm drawing blood samples, the sweat begins to trickle down my face, my goggles fog over and my face shield sticks to my skin...I hope I don't faint from heat and hyperventilation. My patient is terrified. I squeeze his hand with my vinyl coated one and try to reassure him in the face of dreadful uncertainty and our mutual fear.

"My patient is terrified. I squeeze his hand with my vinyl-coated one and try to reassure him in the face of dreadful uncertainty and our mutual fear..."

...

We continue to see patients whose symptoms defy the news that SARS is done, that we are safe. We treat several members of one family who are sick with fevers and whose chest X-rays reveal the dreaded infiltrates. Red flags are raised and are countered with reassurances. Alarm bells are muted with the insistence that all is well.

And so it is, in defiance of the assertion that without a known link there can be no SARS, we find ourselves in the epi-centre of a second outbreak. The storm winds blow far more vicious this second time around.

Our workplace becomes a "level 3" facility and is transformed into what looks like the set of a science fiction movie. I am ordered into quarantine and feel as though such a restriction could apply only to some plague-threatened inhabitant of the Middle Ages. I venture out just to travel to work. Our emerg shuts down, but our ill colleagues stream in. The hospital has the feel of a ghost town - I see nurses and physicians cry.

"Our emerg shuts down, but our ill colleagues continue to stream in. The hospital takes on the feel of a ghost town... I see nurses and physicians cry."

I volunteer for the SARS intensive care unit where I encounter the very worst of this disease and its ravages. One weekend I am assigned to the care of a fellow nurse. She has a son the same age as mine and is living out what could easily be my fate.

While my experience pales in comparison to the anguish of those who have been stricken with SARS and of those who have lost the people they loved most in the world, I am nonetheless one of many whose personal and professional lives are irrevocably and permanently changed. Understanding the scope of those changes and grasping the extent of the personal impact will remain a work in progress for some time to come. [1]

To the people of Ontario, and to the healthcare providers, agencies, and institutions that serve them every day, SARS symbolizes a traumatic, yet potentially transformative moment.

If we limited our view to and judged the scale of the problem based solely on the raw epidemiological data and the mortality rate of SARS, we would see only a small part of what the outbreak illustrated for the healthcare system as a whole. Indeed, in the cold light of data, the deaths from SARS will barely register in the annual mortality and morbidity statistics.

More than anything, SARS offered us a window onto the strengths and significant weaknesses within our healthcare system. The outbreak cast in a harsh light many of our assumptions about infectious disease control. It also vividly highlighted our lack of preparedness to address health emergencies of a potentially more deadly and unpredictable nature. For thousands of healthcare providers, the SARS experience has had a profound impact on how they view their work and workplace – for SARS was a disease that attacked those whose job it is to attack disease.

[SARS] vividly highlighted our lack of preparedness to address health emergencies of a potentially more deadly and unpredictable nature.

SARS represented a frightening and immensely stressful event for all those who contracted the illness, those forced into quarantine and their families and friends, and those who as patients experienced the disruptions and challenges first-hand. Clearly, SARS was an emergency for Ontario and for our provincial healthcare system.

An emergency, by definition, is a period of immense challenge, often marked by a degree of disorder and confusion. Recognizing the immense challenge that SARS forced on our healthcare system, the provincial Ministry of Health and Long-term Care established the Expert Panel on SARS and Infectious Disease Control in May 2003. In undertaking our work, we consciously recognized that some of the shortcomings in handling SARS highlighted in this report and in other reports were understandable. Specifically, healthcare providers on the front-lines and throughout the healthcare system had to overcome a huge lack of basic information about the nature of SARS, especially at the outset.

Those charged with managing the outbreak at the local, provincial, and national level, and those who served on the Ontario SARS Scientific Advisory Committee worked within the less-than-ideal structures used to manage and bring the outbreak under control; these people worked

relentlessly, often in incredibly difficult circumstances. They did so tirelessly and, ultimately, successfully…although at significant cost. The comments and observations offered in this Report are grounded in our acknowledgement and respect for these efforts, in a desire to harness the knowledge learned through these experiences, and in an even stronger desire that these experiences not be repeated.

The Mandate of the Expert Panel

The purpose of the Expert Panel is to advise the Minister of Health and Long-Term Care in Ontario how to re-equip our health sector to better cope with infectious disease outbreaks and to address major health emergencies.

The mandate of the Expert Panel is:

- To determine the key lessons learned in the Ontario health system's handling of the SARS outbreak and with this understanding, provide practical, focused, and forward-looking advice on all appropriate health system measures to strengthen infectious disease control on a sectoral and system-wide level in Ontario.

- To provide advice and recommendations to the Minister of Health and Long-Term Care on the design and implementation of planned and future infectious disease management initiatives; including assessing required reserve/surge capacity in the system, research, and measures to strengthen infection control, public health and system response capabilities.

Work To-date

The Expert Panel received 265 written submissions and conducted almost 150 interviews and 12 focus groups with various levels of healthcare providers, administrators, and other experts. These organizations and individuals included nurses, physicians, respiratory therapists, infection control professionals, hospital CEOs, public health physicians and nurses, laboratory staff, long-term care facilities, community agencies, and emergency healthcare providers. In addition, the Panel commissioned independent research, carried out by third-party organizations, in a number

of areas deemed critical to our analysis of the system's handling of SARS.

The submissions varied from formal, comprehensive documents to key observations and recommendations forwarded directly from frontline staff. Through a separate and confidential process, we interviewed or conducted focus groups with individuals who had contracted SARS, individuals quarantined due to SARS, and those who faced delays to their own health care as a result of SARS. Their views and words will be a central component in our final report.

Recognizing that there are other commissioned reports investigating SARS, we have chosen to focus on the systemic and policy challenges raised by SARS, and to prioritize the areas that require short-, medium-, and long-term actions. We acknowledge the immense scope of some of the key issues raised, and are therefore acutely aware of the need to produce directions and recommendations that are realistic and achievable.

The Panel approached its work by viewing SARS as more than simply one disease requiring one set of interventions. Rather, we have viewed it as a warning system, highlighting what could happen and what needs to be in place to deal with the next outbreak, be it SARS or something far more contagious or deadly.

The Expert Panel has not been mandated to act as an investigative body. This mandate more clearly falls to Justice Archibald Campbell and the Commission of Inquiry. We trust that the work and observations presented in this Report will be of value to the Commission and its staff.

Our vision is that our actions to strengthen the capacity to prevent and respond to infectious diseases become a pillar for the national public health renewal process.

Furthermore, our work complements the efforts of the National Advisory Committee on SARS and Public Health. Dr. David Naylor and his Advisory Committee have done a commendable job in articulating the organizational and capacity deficiencies that existed in preparing for, responding to, and managing SARS at all levels, as well as in documenting the chronology of events. Their Report, *Learning from SARS: Renewal of Public Health in Canada*,[2] documents specific deficiencies related to lack of leadership, resources, and preparation, and the strained and fractured relationship between the federal and provincial governments. Overcoming these divisions, which permeated the response to SARS, is a goal that is deeply shared by the Panel.

Dr. Naylor and the National Advisory Committee have also outlined a conceptual blueprint for revitalizing public health in Canada. The Panel strenuously advocates for Ontario to have the courage and passion to be at the forefront of crafting a new vision and structure for health promotion and protection in this province, as well as for all of Canada. Our vision is that Ontario's actions to strengthen the capacity to prevent and respond to infectious diseases become a pillar for the national public health renewal process as a whole.

Our framing principle in compiling this Initial Report has been to work within the overall conceptual framework set out in the National Advisory Committee Report. It is our sincere belief that Ontarians and Canadians will be far better served if the work that Ontario must pursue in the areas of public health and emergency preparedness are intimately linked to the ongoing work required at the federal and provincial levels.

We want to clearly indicate to the individuals and organizations that participated that we have heard what they had to say.

Therefore, our overarching recommendation is for Ontario to play an active advocacy role in ensuring that concrete progress is made at the federal and provincial levels in implementing the work of the National Advisory Committee. Similarly, in the recent Report of the Standing Senate Committee on Social Affairs, Science and Technology, Senator Michael Kirby and his Committee established tight timeframes to hold the federal government to rejuvenating the area of public health.[3] Ontario should use all of its power to join Senator Kirby in requiring and supporting rapid progress in the national rejuvenation of public health.

Purpose of this Report

This Report constitutes the first phase of the Expert Panel's work. It has two purposes: firstly, the Report is drafted to indicate to the Minister the most urgent measures needed, including short-term measures that should be considered or initiated as soon as possible, if not already underway.

Secondly, we want to clearly indicate to the individuals and organizations that participated that we have heard what they had to say. We strongly believe that effective change will only happen by building consensus – part of achieving that consensus is listening to the experiences of those at all levels who lived through the fight against SARS.

This first Report describes the Panel's learnings and observations around six themes – Public Health Models; Infection Control; Emergency Preparedness; Communications; Surveillance; and Health Human Resources. We are conscious of the need for due diligence in all of these areas and for further research and reflection before we can make additional, definitive recommendations on specific changes required.

Our final report, to be released by February 2004, will benefit from ongoing discussions with healthcare providers and from a series of independent research projects currently underway. As well, we will actively follow discussions and debates in other forums about the future national framework for public health in the coming months. Our recommendations about how best to integrate Ontario public health into a comprehensive national framework will be a significantly detailed component of our final report.

Conclusion

The worst mistake we can make at this juncture is to refuse to look honestly, openly and without rancour at ourselves, at our own institutions, at our own professions, at our own agencies and most certainly at our own provincial capacity to address the deficiencies revealed by SARS.

During the SARS outbreak, healthcare providers demonstrated enormous effort and, in many cases, extraordinary commitment to our healthcare system and to colleagues; as a result, the disease was successfully contained at tremendous cost. However, all involved realize that change is required. We hope that the commitment to change can be as strong and powerful as was the collective commitment to overcoming the outbreak.

In the healthcare area, it is all too common for the day-to-day challenges of planning, funding, and delivering basic services to drain the energy, commitment, and resources required to make fundamental changes. Indeed, it will take time to develop an effective, rigorous system to respond to infectious disease outbreaks. It will also require investment, patience, and cooperation. But it is essential.

It will take time to develop an effective, rigorous system to respond to infectious disease outbreaks. It will also require investment, patience and cooperation. But it is essential.

Improving our collective capacity to deal with emergencies such as SARS is a collective debt we owe to those who died from the disease, to those who lost

loved ones, and to the healthcare providers who valiantly dealt with the disease.

More than a debt, however, improving our capacity to handle health emergencies is a down payment on the future. It is an investment for those who fight the next major health emergency, so that they may have access to some of the tools, supports, and processes that we lacked during Ontario's first SARS outbreak.

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