October 4, 2004

To: Board of Health

From: Dr. David McKeown, Medical Officer of Health

Subject: Learning from SARS: Recommendations for Toronto Public Health Emergency Preparedness, Response and Recovery

Purpose:

To present the Toronto Public Health report "Learning from SARS: Recommendations for Emergency Preparedness, Response and Recovery" to the Board of Health.

Financial Implications and Impact Statement:

There are no financial implications directly stemming from this report. Any additional resources required to implement the recommendations contained in the attached report, will be considered in the 2005/6 Toronto Public Health Operating Budget process.

Recommendations:

It is recommended that:

(1) the Board of Health forward this report to the Ontario Public Health Association, the Association of Local Public Health Agencies, Ontario Boards of Health, The Commission to Investigate the Introduction & Spread of SARS in Ontario and the Provincial and Federal Governments for information and appropriate action;

(2) the Board of Health urge the Ontario Ministry of Health & Long-Term Care to move forward with the implementation of Operation Health Protection announced in June 2004;

(3) the Medical Officer of Health report in 2005 on progress in Toronto Public Health emergency preparedness; and

(4) the appropriate City officials be authorized and directed to take the necessary action to give effect thereto.

Background:

The Board of Health has considered a number of reports pertaining to the Toronto Public Health (TPH) response to Severe Acute Respiratory Syndrome (SARS). In particular, on September 9th, 2003, the Medical Officer of Health presented a report to the Board on "Toronto Public Health's Response to the Severe Acute Respiratory Syndrome (SARS) Outbreak, 2003". This report contained a number of recommendations to improve emergency preparedness at all levels of Government. Subsequent to this report there have been a number of developments related to improved emergency readiness. These include the announcements of Operation Health Protection by the Provincial Government in June 2004 and the creation of a Canadian Public Health Agency and appointment of Canada's first Chief Public Health Officer, Dr. David Butler-Jones, in September 2004.

Comments:

During and after the 2003 SARS outbreak, TPH conducted a number of evaluation processes to assess the effectiveness of the TPH SARS response with a view to improving capacity for emergency preparedness, response and recovery. Front-line staff, managers and directors provided feedback and input through a formal evaluation process involving extensive interviews (both group and one-on-one), debriefings with the different SARS response teams and direct observations of response operations during the second phase of the outbreak.

Participants in this evaluation process were assured that their feedback would be confidential and that the findings would be presented in a manner where people could not be individually identified. People were therefore encouraged to speak out freely and honestly.

In addition to this more formal evaluation research, a series of Town Hall meetings were organized in Fall 2003, to provide staff an opportunity to meet with the Medical Officer of Health and the TPH Divisional Management Team (DMT), to ask questions and express their views and concerns. Managers also provided feedback through managers' debriefing sessions and the DMT participated in a facilitated SARS debriefing session. The information and analysis emerging from all these sessions was integrated into the overall evaluation research. The recommendations detailed in the accompanying report "Learning from SARS: Recommendations for Emergency Preparedness, Response and Recovery" are based on all these sources of information.

Some of the recommendations contained in the report have already been implemented. For example, in order to prevent and control hospital outbreaks in the future, in June 2003 TPH established a dedicated Hospital Infectious Diseases Unit (now called the Communicable Disease Liaison Unit) for enhanced disease surveillance, liaison and public health response to hospital-based infectious diseases. This helps Toronto Public Health to carry out its provincial mandate for infection control and control of infectious diseases in hospital settings. The unit is 100% provincially funded. In addition, TPH continues to implement Incident Management System (IMS) training for managers and some staff to ensure that TPH is prepared to respond to emergencies.

There are a number of other related activities underway in TPH to improve the division's state of readiness for an emergency. The first phase of the TPH Review of Emergency Preparedness, Response and Recovery identified priority areas to improve emergency readiness. The second phase of the review will examine longer term organizational and resource requirements and challenges. The TPH Emergency Services Review team will review all the recommendations in the attached report with a view to integrating them into an implementation plan.

In addition, since 2002, TPH has brought together senior officials from the Coroner's office, police, fire, Emergency Medical Services, the provincial public health laboratory, the Canadian Red Cross, Toronto District Health Council, hospital infection control specialists and the Ontario Hospital Association, to develop a pandemic influenza plan for the City of Toronto. The purposes of the plan were to reduce morbidity and mortality associated with the detection of a novel and virulent strain of influenza; to minimize social disruption during an influenza pandemic in the City of Toronto; to develop a plan that can be adapted for other public health emergencies (e.g. smallpox epidemic); and to develop community linkages that improve TPH's preparedness for any public health emergency. The relationships and networks built through this process were extremely useful during the SARS response and have given greater impetus to the work of this committee.

The findings of the TPH Emergency Services Review, together with progress to date regarding the development of the Pandemic Influenza plan for the City of Toronto and the status of the recommendations from the Learning From SARS report will be the subject of a report to the Board of Health in 2005.

TPH's emergency preparedness activities will benefit from the new and important initiatives currently underway in the Federal Government, through the creation of the Canadian Public Health Agency, and the appointment of Canada's first Chief Public Health Officer, and the Provincial Government's June 2004 announcement of Operation Health Protection. While the specifics of these initiatives have yet to be determined it is crucial that TPH works in close collaboration with any newly established federal and provincial public health agencies. In addition, any recommendations that have human resources implications will be pursued in consultation with City of Toronto bargaining agents.

Conclusions:

The crucial role of Toronto Public Health in responding to emergencies became clear through the SARS experience. While the division was able to mobilize considerable resources and expertise to respond to the crisis in a timely manner and successfully controlled an outbreak of a new, emerging disease, there is much to learn from the experience in order to be prepared in the future. The recommendations contained in the "Learning from SARS" report are based on an analysis of honest, frank and professional feedback from numerous TPH managers, staff and key stakeholders from other agencies who participated in the TPH SARS response.

The development of Toronto Public Health's emergency preparedness is continuing. Much progress has been made but much remains to be done. The attached report provides valuable

information and guidance for future service development, and should be shared with other stakeholders who may benefit from the TPH experience with SARS. TPH will continue to work closely with our partners in the community, the health sector and with other levels of government to ensure effective emergency planning, response and recovery.

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Attachment:

Learning from SARS: Recommendations for Emergency Preparedness, Response and Recovery, Toronto Public Health, June 2004

LEARNING FROM SARS

Recommendations for Emergency Preparedness, Response and Recovery

September 2004

Introduction

The first case of SARS was reported to Toronto Public Health (TPH) on March 9, 2003 as a case of possible tuberculosis. Five days later, on March 14, TPH convened a media briefing with Ministry of Health and Long-Term Care and hospital officials to advise the community that we were dealing with a cluster of atypical pneumonia cases possibly linked to a World Health Organization alert issued the previous day. At this point TPH initiated its emergency response plan, established a public information hotline and assigned staff full-time to the outbreak investigation. TPH's role included investigation and management of possible cases, identification and quarantine of contacts, disease surveillance and reporting, and provision of infection control advice to institutions, schools, workplaces and community organizations. Health risk assessment, public communications and community relations were critical functions as the outbreak progressed and it became clear we were dealing with a crisis situation.

The SARS outbreak was an international public health emergency of significant proportions. It triggered the first ever declaration of a health emergency by the Province of Ontario and required the immediate mobilization of public health staff, infectious disease specialists and infection control practitioners from across Toronto, Ontario and Canada. Over 700 TPH staff were dedicated to the SARS outbreak response from mid March to the end of June, 2003.

During and following the outbreak, TPH conducted a number of evaluation processes to assess the effectiveness of its own SARS response with a view to improving capacity for emergency preparedness, response and recovery. Front-line staff and managers provided feedback and input through a formal evaluation involving extensive interviews, compilation of survey data and discussions within the teams that played key roles during the emergency. The honest, frank and professional feedback received from staff through this process is an invaluable input as TPH works to be better prepared for future emergencies. The Divisional Management Team (DMT) wishes to formally acknowledge the dedication and hard work of the research team. The findings from this research have been instrumental in shaping the recommendations contained in this report.

There was also a series of regional Town Hall meetings where all staff were able to meet with the Medical Officer of Health and members of the Divisional Management Team. Additional input was generated through a managers' evaluation meeting, a number of Critical Incident Stress Management sessions and from discussions at DMT. These contributions were integrated with the evaluation research into one set of recommendations that is intended to provide a comprehensive overview of actions required to improve TPH emergency planning and response.

This work has been occurring while a number of other related activities have been underway. In particular, the first phase of the TPH Review of Emergency Preparedness, Response and Recovery was completed. This project has identified priority issues to improve readiness in the event of an immediate emergency arising. It is being followed up by a second phase, examining longer term organizational challenges and requirements. TPH is also continuing the work of establishing the Communicable Disease Liaison Unit, created immediately after SARS to strengthen links with the hospital sector. Work is also moving forward at a significant pace behind TPH leadership in the related area of pandemic influenza planning through the Toronto Pandemic Influenza Planning Steering Committee.

All this activity will benefit from the important initiatives being undertaken at the federal and provincial levels in response to the various investigations initiated by the senior levels of government. It is hoped that the increased awareness of the crucial role of public health in responding to the SARS emergency will result in increased resources to improve coordination and strengthen the overall public health infrastructure. Toronto Public Health will continue to implement improvements in emergency planning and will be working closely with our partners in the community and health sectors and governments at all levels to ensure enhanced capacity for emergency response.

What follows is a composite list of recommendations emerging from a number of related internal evaluation initiatives. The recommendations are presented in the following categories:

- General,
- Communications,
- Logistics,
- Human Resources,
- Information Systems,
- Emergency Planning & Preparedness,
- Financial,
- Operations and
- Evaluation.

Some recommendations have already been implemented, others will be acted on in the near future and the remainder will require additional resources for implementation. The feasibility of each recommendation will be assessed during the implementation process. DMT will follow up to ensure a monitoring mechanism is in place to determine the implementation status of all recommendations.

General

Toronto Public Health must integrate lessons learned from the SARS outbreak into all emergency planning activity. This includes the coordinating role assigned to TPH on pandemic influenza planning for Toronto, the building of capacity in the Emergency Services Unit and across the Division, and the strengthening of partnerships with community health care workers, agencies and other levels of government. As the senior levels of government move forward on commitments to strengthen overall capacity in public health, TPH has acquired significant real world experience from the SARS emergency that must be shared with others in the common goal of ensuring improved emergency readiness to protect the health of the population.

Recommendations

1. TPH refer these recommendations to the Emergency Preparedness Response and Recovery Review for integration into an implementation plan.

2. TPH ensure that all staff are aware of their potential roles in the event of an activated emergency response, using the Incident Management System model adopted by the City of Toronto.

3. TPH ensure that guidelines for fair and respectful treatment of all employees, which are in place, are met before, during and after a public health emergency.

4. TPH work with municipal, provincial, and federal authorities to clarify roles and responsibilities with a view to building more effective communications and working relationships before and during emergencies affecting public health.

5. TPH recommend to the provincial and federal government that they assign liaison people to work on site during an emergency involving public health.

Communications

(Internal, External with Partners and Media Messages)

The experience of working to establish functional lines of communications within TPH and with partner agencies, hospitals and other levels of government during the SARS crisis produced many lessons on building more effective systems for information sharing and communicating with the public. Of all the control measures put in place during the outbreak, the delivery of clear risk communications was widely seen as a critical measure of an effective public health response. Plain language and accessible communication to the public, and to the many sub-populations in a large and diverse urban environment, was dependent on decisions and information from a wide range of external partners and stakeholders, as well as the teams of TPH staff. The timely flow of this information was one of many challenges in the communications process. For example, in de-briefings with staff, many people expressed frustration about hearing of new developments in the outbreak from the media, before receiving an update from TPH channels internally. This presented various difficulties, particularly for staff responding to incoming inquiries on the hot line.

Recommendations

1. TPH develop an ongoing liaison with hospitals to allow for improved information exchange. Staff should develop protocols for communication with each facility to ensure effective two-way communication in a crisis. These protocols must be updated regularly and kept accessible to TPH staff.

2. TPH develop a plan for community outreach during an emergency involving public health that will address target audiences and specific community needs, using all appropriate techniques (for example, TPH must develop multiple vehicles, including e-mail distribution, to ensure consumer information is easily available to agencies and community groups).
   TPH establish communications protocols for dissemination of key information regarding roles, reporting relationships and updates during an emergency to all

staff. TPH must develop infrastructure support such as group e-mail, use of the intranet and auto-voice messaging broadcast to provide information to staff in a timely manner.

3. TPH work with organizations such as the Ontario Medical Association and the College of Physicians and Surgeons of Ontario to identify strategies to communicate effectively and on a timely basis with community physicians in an emergency situation.
4. TPH provide staff with timely access to information for dissemination to the public through the development of a regularly updated binder for all emergency response staff and the use of the "g" drive and the TPH intranet to provide up to date information on line.
5. TPH develop a secure electronic web site accessible to staff and partners working offsite (e.g. an extranet site).
6. TPH identify all internal and external stakeholders who may need to be contacted during an emergency (shelters and homeless service providers, hospital infection control practitioners and emergency room staff, transit authorities, funeral homes, school boards, etc.) and determine the means to notify these stakeholders.
7. TPH develop and maintain one-touch fax and e-mail distribution lists of all stakeholders.
8. TPH work with provincial health officials and other emergency response agencies to clarify protocols involving role and function of lead spokespersons during an emergency.
9. TPH develop and provide risk communications training to lead spokespersons.

Logistics

Logistics encompasses the complete range of infrastructure requirements necessary to carry out the functions of an emergency response, including office space, desks, phones and phone lines, computers, information technology systems and administrative templates. During the SARS outbreak, the scope of immediate infrastructure and material needs was at times overwhelming. TPH moved quickly to occupy two full floors of the main downtown TPH building along with parts of several other floors. It was sheer luck that the two floors were available, as they had been vacated by another tenant just prior to the outbreak. On the other floors of the building many staff not directly involved with the outbreak were disrupted by the urgent adjustments occurring around them. However, TPH was able to rapidly procure desks, phones, and chairs and had a phone network installed and operational within three days on the vacant floors. Other essentials such as files, cabinets, photocopiers and fax machines followed over the next week. Computers were more difficult to obtain, and it took several weeks to have a basic network in place. TPH learned the hard way that a contingency plan must be in place at all times to obtain functional space, supplies and equipment, and a communications system on an urgent basis in the event of any type of emergency.

Recommendations

1. TPH identify and secure access to space that could be used by staff responding to emergencies of various magnitudes. Wherever possible, in responding to an emergency, all staff should be in one area to facilitate communication.

2. TPH move quickly during any emergency to scale up a hotline within 12 hours to support the response. There must be an up to date inventory of existing hotlines and a plan to add additional phone lines when warranted during an emergency.

3. TPH develop emergency hotline protocols and procedures, including:

   - telephone log forms

- information on how to log on to the phone system
- information update forms
- protocols for passing information among sections of the response team, including daily updates on incoming inquiries, types and volume of calls, key issues
- forms for critical/emergency issues identified in a call
- protocols for referring callers according to their needs (e.g. transferring physicians to the physician line)

4. TPH develop a plan for access to computers, fax machines, photocopiers, etc. within 24 hours of an emergency being declared.
5. TPH have draft requisitions prepared for purchasing of equipment in emergencies.
6. TPH ensure adequate capacity for translation and interpretation services in an emergency.
7. TPH develop agreements with other City departments for after-hours support during emergencies (I.T., legal etc.).

Human Resources
(including Labour Relations, Skills Identification, Training)

Any emergency, depending on its nature and scope, could produce an environment that overwhelms existing organizational capacity. The SARS outbreak was an immediate crisis for TPH that necessitated an all-encompassing response from the entire organisation. There were many areas where enormous strain was placed, but none more than in the management of human resources. The SARS emergency taught TPH a fundamental lesson: it is the talent and dedication of many people working together that enables an organization to see its way through a crisis situation. With this as a foundational lesson, TPH must ensure it builds a structure and system that contemplates well in advance of an emergency, the need for various types of support to staff. There must be a well-developed emergency response model which staff have been trained on and understand well. Although the City of Toronto's Incident Management System (IMS) had been adopted by TPH in 2002, only a small number of staff had been trained in its application. The SARS crises showed that staff were not familiar enough with the system for it to be used effectively. TPH must have a plan to identify and use appropriately the skill sets of all staff, and key staff must be trained thoroughly on the IMS model. There must also be standing arrangements in place on the critical issues of compensation and benefits that can be activated during emergency response. The needs and expectations of staff must be addressed on all vital support issues, including hours of work, pay rates, psycho-social supports, and food and dietary provisions.

Recommendations

1. TPH identify a champion within each Directorship to ensure that staff at all levels have the necessary skills and knowledge to appropriately use the IMS model to provide an effective public health response to any emergency.

2. TPH determine generic emergency response competencies and identify a core group of staff who may be called first when IMS is activated. TPH must set up additional training modules for this core group on the IMS model to allow them to take key roles in an emergency.

3. TPH provide resources to ensure that an adequate number of key potential emergency response personnel, including but not limited to the core group, receive ongoing in-depth training on the effective and efficient use of the IMS model.

4. TPH develop training guidelines and content for responders that would be adjusted for a specific emergency and specific teams. These should be implemented using a train-the-trainer model during an emergency.

5. TPH determine skill sets required during an emergency and maintain an inventory of skills and training of all TPH staff.

6. TPH use personnel at the highest levels of their skills relevant to the particular emergency while recognizing licensing limitations and operational needs.

7. TPH negotiate with bargaining agents and prepare plans for staffing during emergencies. These plans must address:

   - hours of work
   - compensation for shift work/work during an emergency
   - benefits, including overtime as pay or lieu, provision of food, parking/transportation cost reimbursement, provision of breaks
   - provisions for staff to do work outside their normal scope of duties

8. TPH meet with City of Toronto Human Resources, CUPE Local 79 and 416, occupational health and safety representatives, and professional associations early in an emergency response to ensure HR policies and protocols are followed correctly.

9. TPH work with City of Toronto Human Resources to develop an EAP support plan for addressing the complex emotional and mental health challenges that affect staff during and after an emergency. This plan must include support for weekend and evening work.

10. TPH establish the role of the mental health team during emergencies to include: (1) provide support to staff who are dealing with the complex emotional issues of clients as well as their own personal stress during an emergency response and (2) provide opportunities for staff to de-brief during the emergency if such support is not available through EAP.

11. TPH further develop the psychosocial emergency response and recovery services network recently initiated by the TPH Emergency Services Unit.

12. TPH develop a recruitment strategy for emergency response including, but not limited to, standing agreements with other divisions and departments in the corporation, and agreements with the union and external agencies to augment existing staff skills as necessary during an emergency. These arrangements may include mutual aid agreements with other health units and prearranged professional licensing agreements.

13. TPH develop staff scheduling templates to assist in efficient and effective staff assignments during an emergency.

14. TPH develop and maintain, through regular testing, emergency callout lists with current contact information.

15. TPH review and modify skill requirements, staffing requirements and staffing schedules on an ongoing basis during an emergency. This should include assessing the need to go to a 24 hour-day, 7 day-a-week schedule to provide emergency response over a prolonged period of time.

16. TPH ensure that all staff who might be recruited during an emergency will receive necessary training and skill development. Required skill sets identified in the SARS emergency include, but are not limited to, investigation, counselling, documentation and records management (including clinical charting, reporting, rationale for decisions taken, etc.).

17. TPH develop a basic outbreak training module for all managers as part of a comprehensive emergency preparedness plan.

18. TPH identify and develop training module templates and establish protocols for staff training to be used in emergency response. These modules should be reviewed and updated periodically and made accessible to all staff prior to an emergency.

19. TPH ensure all data analysts and epidemiologists in the division receive enhanced epidemiology training related to communicable disease outbreak investigation, analysis and reporting.

Information Systems

The management of any communicable disease outbreak requires a database that tracks the status of all cases and their contacts to monitor the progress of the outbreak, assess the effectiveness of control measures and ensure that all cases and contacts have been reached and are being managed appropriately. At the time of SARS, the provincial Reportable Disease Information System (RDIS) had not been designed to accommodate this type of new infection. In addition, because quarantine restrictions had not been used to contain infectious diseases in Ontario for decades, the existing system did not have the capability to record or track individuals in quarantine. As a result, at the start of the outbreak TPH developed a Case and Contact Management System (CCMS) database quickly to track all cases. The information was used to monitor the early stages of the outbreak and to report required information to the Ministry of Health and Long-Term Care.

While a basic contact database was initially created, it could not be sustained because of the high volume of contacts and the changes in documentation that were required as the outbreak progressed. Tracking of contacts had to then be carried out manually, a very labour-intensive process. A full contact database was developed within three weeks and all contacts were entered by the end of Phase one of the outbreak. This database was then ready to be used when Phase two occurred, as groups of staff had been trained on the use of the system. As the contact follow up database was developed, the case component of the database was being enhanced to meet TPH, provincial, federal and World Health Organization requirements. Testing of this part of the system was a complicated technical task and delayed the proper working of the case component of the database until the end of Phase two.

As these systems were developing, TPH was meeting on a regular basis with provincial representatives to identify the requirements for a provincial communicable disease

information system that would accommodate SARS reports and the associated quarantine requirements. TPH was required to provide a large amount of data on the status of cases and contacts. Daily reports were being issued to TPH's incident management team, the Provincial Operations Centre, a provincial epidemiology team, a federal epidemiology team and to the public through the media. The demand for current, relevant information issued on a timely basis is a critical challenge of any emergency response.

Recommendations

1. TPH continue to work with the Ministry of Health and Long-Term Care and Health Canada to develop flexible, robust information technology (IT) systems for surveillance and case management.

2. TPH develop protocols with other health units in Ontario, particularly Greater Toronto Area (GTA) health units, and the provincial government for data sharing during an emergency and for confirmation of data receipt.

3. TPH continue to support the Case and Contact Management System (CCMS) for use during major outbreaks and other emergencies and encourage other health units to use the system as an intermediate database until the Integrated Public Health Information System (iPHIS) is fully developed and implemented.

4. TPH ensure a core group of data entry staff are familiar with CCMS (and iPHIS when appropriate) and are able to use the system in an emergency.

5. TPH explore with Corporate I.T. the development of more efficient remote access to TPH LAN drives and e-mail for staff.

Emergency Planning and Preparedness

TPH has been engaged in an emergency planning and preparedness initiative, in co-operation with other City departments, since 2001. The Emergency Services Unit in TPH developed a public health Incident Management System and was in the initial stages of training on this model when the SARS outbreak occurred. As well, a revised plan for response to emergencies and agreements with other City and external agencies was under development. TPH had also initiated a process of health sector emergency planning with City of Toronto partners and had begun a Toronto pandemic influenza planning process involving key stakeholders from a broad cross- section of the community. These initiatives were all in early stages when the SARS crisis arose. While there were some immediate benefits resulting from this work, particularly in establishing a network of key contacts among external agencies, it was very clear that a lot more work was necessary to minimize the chaos that an emergency brings and to ensure efficient and effective rapid response.

Recommendations

1. TPH develop a mechanism to assess a situation as it nears or exceeds the capacity of staff to respond to or to contain an incident, including specific criteria to identify the circumstances under which TPH will activate its emergency response. TPH develop a plan for the timely communication of the activation of an emergency response to all TPH staff.

2. TPH develop, with other departments in the corporation, an emergency response redeployment strategy to be activated when a city emergency is declared.

3. TPH prepare protocol, procedure, policy and guideline templates in anticipation of future emergencies. These templates should be evaluated and updated following any emergency.

4. TPH update and revise policies and procedures for SARS using the guidelines from the Ontario Ministry of Health and Long-Term Care, Health Canada and the World Health Organization. These protocols should be kept on a common drive for on-line access.

5. TPH develop templates for orders under Sections 22 and 13 of the Health Protection and Promotion Act in consultation with the Legal Division and templates on quarantine and active surveillance that can be used in an emergency.

6. TPH incident manager ensure personnel are assigned to the planning function as early as possible in the emergency in order to use previously prepared templates to develop the required written protocols and guidelines for the response

7. TPH assess the effectiveness of incident management meetings during an emergency to ensure all necessary decisions are being made and communicated effectively.

8. TPH evaluate the protocols and guidelines used during any emergency and refine them as necessary for future use.

Financial

The health aspects of emergency preparedness were highlighted in Toronto during the anthrax scares in 2001 and subsequent events such the mass vaccination clinics held by TPH in response to an outbreak of Hepatitis A, and preparations for World Youth Day in 2002. Following these events, TPH applied to the federal government for shared funding from the Joint Emergency Preparedness Program (JEPP) to begin a health emergency planning and preparedness initiative. While a small amount of money was received on a one-time basis in the fiscal year 2001/2002, budget restrictions at the City of Toronto allowed only a small commitment to this project. The SARS emergency demonstrated the crucial importance of this function and exposed the scope of work that must be undertaken to ensure TPH and the City of Toronto can manage in an efficient and co-ordinated way for the next emergency.

Recommendations

1. TPH, in consultation with the City of Toronto Office of Emergency Management, explore the possibility of acquiring additional funds and resources from different levels of government to build the capacity and infrastructure to fulfil emergency preparedness requirements according to the Emergency Management Act.

2. TPH estimate the resources required for staff training and build these requirements into the base TPH operating budget to enable the required surge capacity in the division.

Operations

(Case Management, Contact Follow Up, Hotline, Epidemiology)

During the SARS response, TPH delineated operational functions to ensure that staff were assigned a manageable amount of work. Key functions included: case management; follow up and management of contacts; staffing the hotline; data collection; and epidemiologic analysis. Because the outbreak grew rapidly and the operational teams were physically separated on different floors of the same building, issues arose in ensuring the most current information flowed properly between teams. There was some duplication of effort and in some instances data were not being forwarded to the appropriate teams. Staff expressed concern about not being able to receive timely answers to questions and consequently being ill-equipped to provide adequate support and advice to clients. It was frequently difficult to obtain current information on specific incidents. This led to some confusion and conflicting advice being offered to clients. While policies and procedures were developed during the crisis to address these problems, there are many lessons learned about the need to clarify operational functions that must be incorporated into future response plans.

Recommendations

TPH ensure the continuity of case management so that cases and their contacts are managed by a single investigator or a team of investigators. TPH develop a Quality Assurance process for all operational functions, including ongoing review and revision of forms used and mechanisms for identification of urgent issues. Staff should be assigned to this role at the start of an emergency response so that issues can be identified and addressed rapidly.

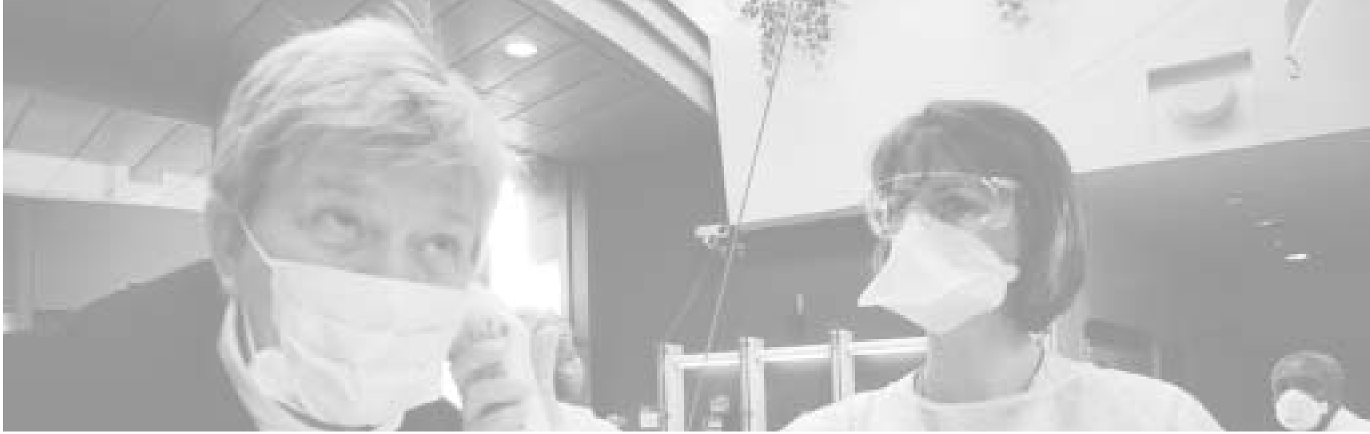
1. TPH adopt standardized documentation procedures to be implemented at the start of an emergency.

2. TPH ensure a sufficient number of physicians is available to work directly with

each case/contact management team at all times during an emergency. There should also be a clearly defined reporting structure and a floating manager assigned to respond promptly to staff questions.

3. TPH ensure an adequately resourced epidemiology team is formed at the start of an emergency, including management support to monitor the development of the incident.

4. TPH ensure adequate clerical support is deployed immediately to work in all areas of the emergency response.



Evaluation

Evaluation is a key component of learning from the experience of any emergency response. Because of the magnitude of the SARS outbreak, resources were initially focused on the containment of the outbreak. However, a team of TPH staff was established toward the end of Phase one to conduct an evaluation of the SARS response. This team conducted interviews with staff at all levels of the organization, reviewed the policies and procedures followed during the outbreak and observed various outbreak management meetings as they occurred. The work of this team formed a vital part of the recommendations contained in this overall Learning from SARS report.

Recommendations

1. TPH build capacity to ensure the evaluation of both activated emergency responses and emergency response preparedness planning activities, including the development of evaluation frameworks.

2. TPH review the processes and outcomes of all emergency responses, modify the emergency preparedness activities and evaluation frameworks in light of the results of the review, and disseminate findings as appropriate.

Conclusion

The SARS outbreak demonstrated the vulnerability of Toronto to the rapid spread of communicable diseases. It showed how vital a strong public health infrastructure is to the well being of the city. TPH has learned many valuable lessons from this event that will serve to improve future emergency preparedness, response and recovery.