Are We Ready? Evidence of Support Mechanisms for Canadian Health Care Workers in Multi-jurisdictional Emergency Planning

Tracey L. O'Sullivan, PhD[1,2]
Carol A. Amaratunga, PhD[1,3]
Jill Hardt, BA[1]
Darcie Dow, MSc[1]
Karen P. Phillips, PhD[1,2]
Wayne Corneil, ScD[1,4]

ABSTRACT

Background: Federal, provincial and municipal leaders in Canada have adopted a culture of preparedness with the development and update of emergency plans in anticipation of different types of disasters. As evident during the 2003 global outbreak of Severe Acute Respiratory Syndrome (SARS), it is important to provide support for health care workers (HCWs) who are vulnerable during infectious outbreak scenarios. Here we focus on the identification and evaluation of existing support mechanisms incorporated within emergency plans across various jurisdictional levels.

Methods: Qualitative content analysis of 12 emergency plans from national, provincial and municipal levels were conducted using NVIVO™ software. The plans were scanned and coded according to 1) informational, 2) instrumental, and 3) emotional support mechanisms for HCWs and other first responders.

Results: Emergency plans were comprised of a predominance of informational and instrumental supports, yet few emotional or social support mechanisms. All the plans lacked gender-based analysis of how infectious disease outbreaks impact male and female HCWs differently. Acknowledgement of the need for emotional supports was evident at higher jurisdictional levels, but recommended for implementation locally.

Conclusions: While support mechanisms for HCWs are included in this sample of emergency plans, content analysis revealed few emotional or social supports planned for critical personnel; particularly for those who will be required to work in extremely stressful conditions under significant personal risk. The implications of transferring responsibilities for support to local and institutional jurisdictions are discussed.

MeSH terms: Communicable diseases; occupational health; public health; health personnel; health services administration; disease outbreaks; health policy

La traduction du résumé se trouve à la fin de l'article.

1. Women's Health Research Unit, Institute of Population Health, University of Ottawa, Ottawa, ON
2. Health Sciences Program, Faculty of Health Sciences, University of Ottawa
3. Project Principal Investigator, Department of Epidemiology and Community Medicine, Faculty of Medicine, University of Ottawa
4. Gap Santé, Institute of Population Health, University of Ottawa

Correspondence and reprint requests: Dr. Carol Amaratunga, Director, Women's Health Research Unit, Institute of Population Health, University of Ottawa, 1 Stewart St., Ottawa, ON K1N 6N5, Tel: 613-562-5225, E-mail: carol.amaratunga@uottawa.ca

Acknowledgements: The authors gratefully acknowledge the funding support of the Canadian Chemical, Biological, Radiological and Nuclear Research Technology Initiative (CRTI), Defence Research and Development Canada. Special thanks to our colleagues Lynn McCrann, Heather Smith Fowler, Bob Clarke, Daniel Krewski, Louise Lemyre, and Eileen O'Connor, from the research team for the project titled: Caring About Healthcare Workers As First Responders. Thank you also to several project partners, including the Bureau for Women's Health and Gender Analysis, Health Canada; the Canadian Federation of Nurses Unions; Victorian Order of Nurses; and the Canadian Women's Health Network.

The vulnerability of Canada's public health system was exposed during the 2003 global outbreak of Severe Acute Respiratory Syndrome (SARS), with 251 confirmed cases in Canada, and 44 deaths including three health care workers (HCWs).[1] Human resources were stretched as many HCWs were quarantined and/or asked to work extra shifts to manage patient loads.[2]

It is now widely recognized that mitigation and preparedness are necessary for effective disaster management.[3] National, provincial, municipal, and institutional emergency plans are being developed or updated in anticipation of different types of disasters; many specifically focus on pandemic influenza.[3-5]

The Public Health Agency of Canada published the Canadian Pandemic Influenza Plan (CPIP, 2004)[5] based on, and in accordance with, the World Health Organization (WHO, 2005) Global Influenza Preparedness Plan,[6] which defines the responsibilities of national authorities in the event of an influenza pandemic, and provides guidelines for pandemic planning. CPIP requires that all provinces and territories develop their respective pandemic influenza contingency plans based on CPIP and WHO guidelines. Furthermore, in Canada, six provinces and three territories now have legislation requiring municipalities to file official emergency plans, although few plans were complete or available at the time of this study.[7-19]

In Canada, the provision of health services is a priority in pandemic planning.[5,20] Emergency plans include strategies to enhance human resource pools by drawing on employee rosters, retirees, students and professionals from relevant health disciplines. However, to ensure effective implementation and adequate response capacity, these reserve HCWs must have the necessary skills and training, and they must be available and willing to work.

Support mechanisms for HCWs are essential to enable them to stay healthy and perform their roles as critical personnel during disasters, while simultaneously coping with personal loss and trauma.[21] Emotional, informational and instrumental supports have a protective health effect by buffering the negative effects of stress.[22] They can be categorized according to the type of emotional, informational or instrumental aid for the recipient.[23]

Many studies have explored best practices for infection control and workplace supports to protect against physical exposure to contagions.[2,24] However, few studies have focused on formalized informational and emotional support for HCWs. The purpose of this study was to examine current emergency plans from national, provincial and municipal/regional jurisdictional levels to identify which support mechanisms have visibly been incorporated into official emergency plans.

METHODS

Twelve emergency plans from national, provincial and municipal levels were selected for content analysis. The Canadian Pandemic Influenza Plan (2004);[5] and the Ontario (2005),[20] British Columbia (2005),[25] Manitoba (2006),[26] Alberta (2003),[27] New Brunswick (2005),[28] and Quebec (2006)[29] pandemic influenza plans were selected for content analysis and obtained from jurisdictional websites. Plans were obtained from multiple regions for national representation. The Ontario and British Columbia pandemic influenza plans were selected because of the provinces' experience with SARS.

A small sample of capital region (or municipal) plans were selected for review based on availability at the time of the study. It was beyond the scope of this study to review a large sample of municipal pandemic plans, and many pandemic plans were not available. The Vancouver Island Health Authority Pandemic Influenza Plan and the City of Edmonton all-hazards plan were accessed online. The Calgary Health Region Pandemic Influenza Response Plan was obtained electronically through contacting the Calgary Health Link. The City of Toronto pandemic plans were obtained from jurisdictional websites, while the City of Ottawa Interagency Pandemic Plan was obtained by contacting the Emergency Management department. These plans were accessed online, based on the assumption that, as public citizens, many HCWs would turn to the Internet for this type of information. A member of our research team confirmed the plans were the most current version by phoning the departments responsible for each plan.

The emergency plans were coded using NVIVO™ software through the classification of sentences/paragraphs as meaning units. The plans were coded based on the following categories: 1) informational, 2) instrumental, and/or 3) emotional support mechanisms for HCWs and other first responders. Subsequent theme categories were developed inductively.

Informational supports were defined as any activity designed for adequate and appropriate dissemination of information to HCWs in pre-disaster planning, response and/or post-disaster follow-up (e.g., communications, resources, education). Instrumental support mechanisms were defined as tangible aid to protect workers from physical exposure to infectious disease, and policies/procedures which could enable HCWs to perform their roles during a disaster (e.g., personal protective equipment, training, infection control protocols). Training activities were double-coded as informational/instrumental supports with the rationale that training includes education and relates to disseminating information. It also included skill development, which facilitates performance and effective use of infection control procedures. Segments of text were labeled as emotional support if they focused on reducing anxiety, exhaustion,

TABLE I

Informational Supports

Clarification of worker roles and responsibilities
[The plan] is designed to ensure that all agencies, which may become involved in an emergency, are fully aware of their respective roles and responsibilities during that emergency. (TPIP, p. 3)

Training exercises to enhance readiness
Attend bi-annual preparedness practical sessions for health care workers working in hospitals and public health units/agencies. (BCPIPP, p. 146)
Conduct a simulation of antiviral distribution based on the priority groups and based on available quantities. (QBPIP, p. 70)

Timeliness, adequacy and clarity of communication
Communications has produced a pandemic influenza video, with accompanying supportive material. The purpose of this video is to assist medical professionals… to better understand influenza pandemics. (BCPIPP, p. 184)
For people who are infected, sick and staying at home, particularly those who live alone, fast, easy access to Info-santé and Info-social are certain to play a major role during the pandemic, [however], they could quickly become overwhelmed. (QBPIP, p. 61)

Infectious disease surveillance
Federal communications on influenza currently focus on… surveillance, through FluWatch bulletins, which are directed to the public health professionals but available to the public through the Health Canada website. (CPIP, p. 43)
The province, in collaboration with local public health units and other stakeholders, will educate both health care providers and the public about their role in identifying signs of influenza and preventing its spread. (OHPIP, p. 20)

Policies, priorities, and contraindications related to antivirals/vaccines
Communication with health care professionals and the public on the appropriate use of antivirals is needed during the pre-pandemic and pandemic periods. Clinical guidelines on the use of antivirals in the hospital and the community will be developed as part of the clinical care guidelines. (CPIP, p. 108)

Widespread dissemination of educational materials
During a pandemic, it will be essential to inform both the pubic and health professionals about the symptoms and treatment of influenza, as well as when to seek advice and referrals. Fact sheets … have been developed to assist health care providers with diagnosis, and the general public with self-treatment. (CPIP, p. 38)

Stakeholder satisfaction with level of communication
Ensure that all audiences, including media, key opinion leaders, stakeholders, employees are satisfied with the level of communication… (CPIP, p. 425)
Because staff in the health care sector will be overburdened, communications tactics must be effective and simple, and require minimal staff to implement. (OHPIP, p. 22)

Staff and volunteer training for unfamiliar tasks
Professionals may need training or refresher courses in tasks they don't normally perform, including supervision and management. Due to the limited number of health care professionals that will be available… volunteers and other non-medically trained staff will likely be needed to perform direct patient care. (CPIP, p. 412)
There is serious concern about the practicality of training community volunteers as alternate care providers. In most cases, volunteers will not [have] that background necessary to assume responsibility for administering medications, applying medical equipment, or assessing the severity of cases – even with just-in-time training. (BCPIP, p. 55)

Enhancing compliance to directives through informational support
… the MOHLTC will achieve good compliance with the recommendations… if : staff have the information they need, understand the scientific basis for the standards, understand their roles, and know what protection/precautions they should use. (OHPIP, Appendix A3, p. 18)

TABLE II

Instrumental Supports

Provision of adequate and effective supplies/equipment
During an influenza pandemic the health system must have access to adequate equipment and supplies, and a system for purchasing, storing and distributing those supplies. (OHPIP, p. 57)

Concierge assistance for quarantined workers
…activate plans to provide food, medical and other essential life-support needs for persons confined to their homes by choice or by direction from P/T/L health officials. (CPIP, p. 67)*
* This quotation represents acknowledgement for the need for this support, not the actual provision of this assistance.

Mobilization of additional human resources
During an influenza pandemic, vaccination will be provided at mass vaccination centres under the responsibility of health and social services centres. …The model involves a minimal number of nurses, since several tasks usually performed by nurses will be handled by other resources trained to do so…(QBPIP, p. 45)

Plan B: Instructions of what to do in the event of insufficient resources
A pandemic will likely result in shortages of medications, medical supplies and potentially operational supplies. Since other jurisdictions… will potentially be affected by these shortages, the response plan should NOT rely heavily on outside assistance in terms of the provision of supplies and equipment. (BCPIPP, p. 171)

Special provisions for health care workers working in rural and remote areas
Additional staff must be trained and dedicated to these designated areas in advance of the pandemic, because one or two nurses constitute all the health-care personnel available in these communities. (CPIP, p. 323)

Plans for non-traditional sites for medical services
Plans to extend support programs for health care workers (including trainees, volunteers and retirees)… at NT sites should also be included in overall plan for the management of human resources. Support should include: provision of food and drink, grief counseling, support for families and job protection. (CPIP, p. 415)

Regulatory support for additional human resources
Review liability protection/malpractice insurance coverage to see how it will extend to cover workers in NT sites, professionals, [and] those taking on tasks not usually part of their scope of practice. (CPIP, p. 416)

Adequate screening and security to protect health care workers
Security will be needed to maintain public order …crowd control, traffic control, and ensure protection of site. (CPIP, p. 408)

Job protection for health care workers, spouses and volunteers
Job protection for spouses who do family care to allow workers to work in health care. (CPIP, p. 419)
Protection of the jobs of workers who take leave to assist during the crisis. (CPIP, p. 409)

National stockpile, priority grouping, and strategic options for vaccines/antivirals
Antivirals…are anticipated to be in limited supply during a pandemic. Consequently, a national stockpile has been established and guidelines regarding their use and priority groups have been developed and are currently under review. Depending on the… influenza virus strain, the priority groups may change to target the most affected groups. (NBPIP, p. 7)
If deemed necessary, offer antivirals to close contacts of initial cases. (QCPIP, p. 43)

Governmental guidelines for infection control
… additional barrier precautions to prevent health care worker contact with a patient's blood and body fluids, non intact skin or mucous membranes… The full description of routine practices to prevent transmission of nosocomial pathogens can be found on the Health Canada website (http://www.hc-sc.ge.ca/pphb-dgspsp/dpge.html#infection). (OHPIP, p. vi)

Training and equipment for personal protection (PPE)
Agencies and practices have a responsibility to ensure workers have the knowledge, skills, equipment and support to protect themselves in the workplace. Agencies who are sending one or more workers to provide services to a client with respiratory symptoms should note the need for appropriate precautions on the file and ensure all workers are informed and have the appropriate protective equipment. (OHPIP, Appendix A2, p. 11)

Mechanisms to identify and report cases
Provincial medical officers of health, healthcare practitioners and regional health authorities report significant influenza developments to Manitoba Health, such as outbreaks …in hospitals, nursing homes and schools. (PPIM, p. 21)

and work-family role conflict, or enhancing feelings of self-worth.

Coding reports and emergent themes were reviewed and discussed by four researchers until consensus was reached. The research team includes several researchers with extensive expertise in occupational health, psychosocial aspects of disasters, and gender-based analysis, as well as a former senior public health official with extensive experience in public health policy formulation and management of public health services at multiple jurisdictional levels.

RESULTS

Content analysis of these emergency plans revealed 28 types of identified supports for HCWs across the plans, which have been divided into three categories (informational, instrumental, and emotional supports). Evidence of these supports is presented as quotations from the emergency plans in Tables I, II and III. The themes for each support category are summarized here.

The following informational supports were identified in one or more plans: 1) clarification of worker roles and responsibilities; 2) training exercises to enhance readiness; 3) timeliness, adequacy and clarity of communication; 4) infectious disease surveillance; 5) policies, priorities, and contraindications related to antivirals/vaccines; 6) widespread dissemination of educational materials; 7) stakeholder satisfaction with level of communication; 8) staff and volunteer training for unfamiliar tasks; and 9) enhancing compliance to directives through informational support.

Identified instrumental supports include: 1) Provision of adequate and effective supplies/equipment; 2) concierge assistance for quarantined workers; 3) mobilization of additional human resources; 4) instructions of what to do in the event of insufficient resources (plan B); 5) special provisions for HCWs working in rural and remote areas; 6) plans for non-traditional sites for medical services; 7) regulatory support for additional human resources; 8) adequate screening and security to protect HCWs; 9) job protection for HCWs, spouses and volunteers; 10) national stockpiling, priority grouping, and strategic options for vaccines/antivirals; 11) governmental guidelines for infection control; 12) training and equipment for personal protection; and 13) mechanisms to identify and report cases.

The last category of support focuses on alleviating the emotional impacts of the crisis. The identified emotional supports include: 1) counseling for staff; 2) provision of family care; 3) fostering trust with the public and workers; 4) provision of information and/or instrumental supports; 5) offering a choice to use higher levels of precautionary measures than directed; and 6) mechanisms to identify vulnerable HCWs.

DISCUSSION

This study shows evidence of supports for HCWs, however several gaps are apparent and worth consideration. It was encouraging to see informational supports in several plans, as communication was cited as a key problem during the SARS outbreak,[1] and feeling informed is associated with higher confidence in infection control measures.[30] Effective communication can help alleviate fear,[31] and broader public awareness of preventive measures enables HCWs to concentrate on patient care and occupational safety.

Trust, a contentious issue among HCWs, management and government authorities,[1,32] is fostered largely through careful communication.[1,2] Inadequate or inappropriate communication may foster irrational behaviour. A pertinent example occurred in the United States during the anthrax attacks in 2001, with public use of potentially ineffective or even harmful preventive antibiotics in response to inconsistent information from authorities and the media.[33] Informational supports within the plans are comprehensive, although crisis communication should begin in advance of a disaster and include long-term follow up.[34]

Instrumental supports dominated the content of the plans. They encompass diverse policies/procedures, such as ensuring availability of physical resources and mobilizing human resources for response, including mechanisms to ensure employees are appropriately compensated for their risks and contribution.

Instrumental supports also include offering physical protection for staff and volunteers through vaccination and/or antiviral therapy, the provision of personal protective equipment (PPE), and extend to functional isolation rooms, job protection, departmental security, and sufficient case identification and reporting. While the need for stockpiling adequate equipment and supplies was acknowledged in federal and provincial plans, responsibility was largely deferred to the institutions. It was unclear if adequate resources to implement these recommendations followed.

The plans did not include recommendations for structured opportunities to practice routine tasks while donning full PPE or recommendations related to fatigue from PPE and additional shifts. Viable supports include shorter work shifts for HCWs, or frequent, enforced breaks to reduce discomfort and fatigue, and enhance safety and work performance.[24,30,31,35]

Another noted gap was the unanimous decision not to prioritize the families of HCWs for vaccination, with rationale focused on logistics and ethical justification of defining *family members.*[5,20] Notwithstanding the difficulty of making this policy decision, it remains that HCWs cannot be assured their families will be protected, given the HCW's occupational role. It prompts the question of how willingly they will respond to the next large-scale outbreak.

Few emotional support mechanisms were formally acknowledged in the plans, with the exception of the Québec Pandemic Influenza Plan.[29] This plan recognizes HCWs to be particularly vulnerable to anxiety, depression, exhaustion, and problems related to post-traumatic stress resulting from their direct involvement in pandemic response, and emphasizes providing post-pandemic psychosocial services during the process of returning to normal daily life.

A visible support at local levels was the provision of grief counseling and pastoral services for hospital staff to manage post-traumatic stress.[36] This support is valuable for staff who feel vulnerable and those who are angry about perceived or actual levels of available protection.[35]

Another emotional support recommendation was that child/elder care be provided by local jurisdictions; although substantial resources are required for implementation. The provision of these services fosters a sense of security from the knowledge that loved ones are cared for by trained individuals.

The necessity of addressing the physical needs of quarantined persons was acknowledged, however supports to mitigate the emotional impacts of quarantine were absent. Quarantine is a lonely, psychologically intense circumstance,[37] and emotional support by phone or other means has potential to alleviate distress and enhance compliance with infection control measures.[38] Moreover, as experienced during SARS, regardless of whether they are quarantined, HCWs can expect to encounter stigma,[38] which may persist long after the outbreak has ended.[38-40]

Finally, our analyses revealed an absence of gender-specific supports in the plans. Unfortunately this finding aligns with the

TABLE III

Emotional Supports

Counseling for Staff
Support provided to health care workers may include: Emotional support/grief counseling (aimed at permitting workers to continue to work and reduce loss of staff due to grief or traumatic stress). (CPIP, p. 364)*
* NB: This is a recommendation, not an implemented support.

Provision of family care
...functions that may be required at a non-traditional site: Care for children/family members of workers [by persons] with training or experience in child care, care for elderly, home care/criminal records check. (CPIP, p. 407)
During a pandemic, the availability of health care workers… could be reduced by up to one-third due to illness, [and] concern about disease transmission in the workplace, and caregiving responsibilities. (OHPIP, p. 21)

Fostering trust with the public and workers
Decision-makers will enter into a covenant with the people of Ontario to be transparent and to provide the best available information. (OHPIP, p. 20)

Provision of information and/or instrumental supports
Ontario will make use of various communications channels… to provide health care workers with information that can be useful for their own protection and for their patients/clients. (OHPIP, p. 22)

Offering a choice to use higher levels of precautionary measures than directed
Because some recommended infection control standards represent a change… it may take time for staff to understand the basis for the change, become comfortable with the new surveillance methods and infection control precautions, and adopt new practices. … they should have the option of continuing to use higher levels of precautions. However, the setting should discourage the use of any precautions …that, if misused, increase the risk of exposure to FRI [febrile respiratory illness]. (OHPIP, Appendix A, p. 9)

Mechanisms to identify vulnerable health care workers
[During] influenza pandemic, clinical supervision will pay particular attention to the phenomenon of compassion fatigue or stress, the perception of personal performance, the feeling of competence and the means of providing services. (QBPIP, p. 80)

disaster management literature.[41] Further research is required to understand how disasters are experienced differently by men and women,[42] and to ensure adequate supports are in place to strengthen resiliency and address respective vulnerabilities.[43]

Several limitations of this study are acknowledged. Municipal and regional plans are at various stages of development, and many were not complete at the time of this study. Furthermore, supports available through employee assistance programs were not reviewed. The broader plans outline some responsibilities for smaller jurisdictions, so future studies could explore how those responsibilities are addressed within communities.

CONCLUSION

The support mechanisms identified serve to enhance personal and collective resiliency among health professionals. Several support gaps exist in the emergency plans analyzed. The lack of structured training opportunities and drills, priority vaccination to protect the families of HCWs, and emotional supports such as child/elder care are notable. There is also a need for understanding the importance of gender-based analysis and policies at the institutional level to address the varying needs of female and male responders.

REFERENCES

1. Naylor D, Basrur S, Bergeron M, Brunham R, Butler-Jones D, Dafoe G, et al. Learning from SARS: Renewal of Public Health in Canada. Ottawa, ON: Health Canada, 2003.
2. ONA/OPSEU. Final Recommendations to Justice Campbell Regarding: Occupational Health and Safety Matters Arising from SARS. 2004.
3. Wisniewski R, Dennik-Champion G, Peltier JW. Emergency preparedness competencies: Assessing nurses' educational needs. *J Nurs Admin* 2004;34(10):475-80.
4. Ruef C. A new influenza pandemic - Unprepared for a big threat? *Infection* 2004;32(6):313-14.
5. Public Health Agency of Canada. Canadian Pandemic Influenza Plan. Ottawa: Public Health Agency of Canada, February 2004.
6. WHO Global Influenza Preparedness Plan [homepage on the Internet]. World Health Organization, March 2005. Available online at: http://www.who.int/csr/resources/publications/influenza/WHO_CDS_CSR_GIP_2005_5/en/index.html (Accessed March 28, 2006).
7. Emergency Program Act [homepage on the Internet]. Victoria, BC: Queen's Printer, 2004. Available online at: http://www.qp.gov.bc.ca/statreg/stat/E/96111_01.htm#section6 (Accessed February 9, 2006).
8. The Emergency Measures Act [homepage on the Internet]. Winnipeg, MB: Queen's Printer, January 2006. Available online at: http://web2.gov.mb.ca/laws/statutes/ccsm/e080e.php#8 (Accessed February 9, 2006).
9. Civil Protection Act [homepage on the Internet]. Quebec, QC: Quebec, December 1, 2005. Available online at: http://www.canlii.org/qc/laws/sta/s-2.3/20060614/whole.html (Accessed February 9, 2006).
10. Emergency Measures Act [homepage on the Internet]. New Brunswick: Queen's Printer, July 15, 2005. Available online at: http://www.gnb.ca/acts/acts/e-07-1.htm (Accessed February 9, 2006).
11. An Abridged Guide to Emergency Response Roles [homepage on the Internet]. Whitehorse, YK: EMO, March 2004. Available online at: http://www.community.gov.yk.ca/pdf/abridgedguide2004.pdf (Accessed February 9, 2006).
12. Emergency Preparedness and Planning [homepage on the Internet]. Edmonton, AB: Queen's Printer, 2003. Available online at: http://www.ocipep.gc.ca/ep/legisla/ep_ab/e_p_p_e.asp#local (Accessed November 2, 2005).
13. The Emergency Planning Act [homepage on the Internet]. Regina, SK: Queen's Printer, 2003. Available online at: http://www.qp.gov.sk.ca/documents/English/Statutes/Statutes/E8-1.pdf (Accessed February 9, 2006).
14. Emergency Management Act [homepage on the Internet]. Toronto, ON: Queen's Printer, 2003. Available online at: http://www.e-laws.gov.on.ca/DBLaws/Statutes/English/90e09_e.htm (Accessed February 9, 2006).
15. Emergency Measures Act [homepage on the Internet]. Charlottetown, PEI: Queen's Printer, March 31, 2000. Available online at: http://www.gov.pe.ca/law/statutes/pdf/e-06_1.pdf (Accessed February 9, 2006).
16. Emergency Measures Act [homepage on the Internet]. Nova Scotia: Office of the Legislative Counsel, House of Assembly, June 5, 1998. Available online at: http://www.gov.ns.ca/legislature/legc/statutes/emergmsr.htm (Accessed February 9, 2006).
17. Civil Emergency Measures Act [homepage on the Internet]. Yellowknife, NT: Canarctic Graphics, December 19, 1998. Available online at: http://www.justice.gov.nt.ca/Legislation/..%5CPDF%5CACTS%5CCivil_Emerg_Measures.pdf (Accessed February 9, 2006).
18. Civil Emergency Measures Act [homepage on the Internet]. Nunavut: December 19, 1998. Available online at: http://action.attavik.ca/home/justice-gn/attach-en_conlaw_prediv/Type0281.pdf (Accessed February 9, 2006).
19. Emergency Preparedness [homepage on the Internet]. Newfoundland: Queen's Printer. Available online at: http://www.ocipep-bpiepc.gc.ca/ep/legisla/ep_nfld/levels_a_e.asp#municipal (Accessed November 2, 2006).
20. Ontario Ministry of Health and Long-Term Care, Emergency Management Unit. Ontario Health Pandemic Influenza Plan. Toronto: June 2005.
21. Amaratunga CA, O'Sullivan TL, In: Walter U, Neumann B (Eds.), *Double Jeopardy of Health Professionals in Crisis Situations: Experiences of SARS and Consequences for Gender Strategies, Gender in Health Promotion and Prevention.* Vienna: Springer, In press.
22. Hupcey JE. Clarifying the social support theory-research linkage. *J Adv Nurs* 1998;27.
23. Heaney CA, Israel B. Social networks and social support. In: Glanz K, Rimer BK, Lewis FM (Eds.), *Health Behavior and Health Education: Theory, Research, and Practice,* 3rd ed. San Francisco, CA: Jossey-Bass, Inc., 2002.
24. Yassi A, Bryce E, Moore D. Protecting the face of health care workers: Knowledge gaps and research priorities for effective protection against occupationally-acquired respiratory infectious diseases. Vancouver: Occupational Health and Safety Agency for Healthcare in BC, 2004.
25. BC Centre for Disease Control. BC Pandemic Influenza Preparedness Plan. August 2005.
26. Manitoba Health. Preparing for Pandemic Influenza in Manitoba. March 2006.
27. Alberta Government. Alberta's Plan for Pandemic Influenza. November 2003.
28. New Brunswick Department of Health. New Brunswick Pandemic Influenza Plan: For the Health Sector. December 2005.
29. Gouvernement du Québec. Quebec Pandemic Influenza Plan: Health Mission. 2006.
30. Moore D, Gamage B, Bryce E, Copes R, Yassi A, & members of The BC Interdisciplinary Respiratory Protection Study Group. Protecting health care workers from SARS and other respiratory pathogens: Organizational and individual

continues...

RÉSUMÉ

Contexte : Les dirigeants fédéraux, provinciaux et municipaux du Canada ont adopté une culture de préparation à diverses catastrophes en élaborant et en actualisant des plans d'urgence. Comme on l'a constaté en 2003 pendant la flambée mondiale de syndrome respiratoire aigu sévère (SRAS), il est important d'offrir de l'aide aux travailleurs de la santé qui seraient vulnérables en cas d'épidémie. Le présent article porte sur le repérage et l'évaluation des mécanismes de soutien déjà intégrés dans les plans d'urgence aux trois ordres de gouvernement.

Méthode : Nous avons procédé à l'analyse qualitative du contenu de 12 plans d'urgence nationaux, provinciaux et municipaux à l'aide du logiciel NVIVO[MD]. Les plans ont été numérisés par balayage et codés en fonction de leurs mécanismes de soutien 1) informationnel, 2) instrumental et 3) affectif aux travailleurs de la santé et autres secouristes opérationnels.

Résultats : Les plans d'urgence comprenaient surtout des mécanismes de soutien informationnel et instrumental, mais peu de mécanismes de soutien affectif ou social. Aucun plan ne comportait d'analyse sexospécifique de l'incidence des flambées de maladies infectieuses sur le personnel masculin et féminin. Le besoin de mesures de soutien affectif était pris en compte par les administrations fédérale et provinciales, mais on en recommandait l'instauration à l'échelle locale.

Conclusion : Des mécanismes de soutien des travailleurs de la santé figurent dans l'échantillon de plans d'urgence étudié, mais l'analyse de leur contenu montre que l'on ne prévoit pas assez de mesures de soutien affectif ou social pour le personnel essentiel, particulièrement les employés qui devront travailler dans des situations extrêmement tendues et prendre des risques considérables pour leur propre santé. Nous présentons aussi les conséquences d'un transfert des responsabilités de soutien aux administrations municipales et à celles des établissements.

factors that affect adherence to infection control guidelines. *Am J Infect Control* 2005;33(2).
31. Yassi A, Moore D, Fitzgerald JM, Bigelow P, Hon CY, Bryce E, et al. Research gaps in protecting healthcare workers from SARS and other respiratory pathogens: An interdisciplinary, multi-stakeholder, evidence-based approach. *J Occup Environ Med* 2005;47(1):41-50.
32. Taylor-Clark K, Blendon R, Zaslavsky A, Benson J. Confidence in crisis? Understanding trust in government and public attitudes toward mandatory state health powers. *Biosecurity and Bioterrorism: Biodefense Strategy, Practice, and Science* 2005;3(2):138-47.
33. Hobbs J, Kittler A, Fox S, Middleton B, Bates D. Communicating health information to an alarmed public facing a threat such as a bioterrorist attack. *J Health Commun* 2004;9(1):67-75.
34. Reynolds B, Seeger M. Crisis and emergency risk communication as an integrative model. *J Health Commun* 2005;10(1):43-55.
35. Rosen P. Coping with bioterrorism is difficult, but may help us respond to new epidemics. *BMJ* 2000;320(7227):71-72.
36. Office of Emergency Management. City of Toronto Emergency Plan. Toronto: City of Toronto, 2004.
37. Wynn F, Peter E. Editorial: Nurses and quarantine: Reflections upon the SARS crisis in Toronto. *Nursing Inquiry* 2003;10(4):207-8.
38. Cava M, Fay K, Beanlands H, McCay E, Wignall R. The experience of quarantine for individuals affected by SARS in Toronto. *Public Health Nursing* 2005;22(5):398-406.
39. Ohara R. 'Interminable hell': Hiroshima's nurses remember the atomic bomb. *Nursing Inquiry* 2005;12(4):303-5.
40. Barbera J, Macintyre A, Gostin L, Ingelsby T, O'Toole T, DeAtley C, et al. Large-scale quarantine following biological terrorism in the United States: Scientific examination, logistic and legal limits, and possible consequences. *JAMA* 2001;286(21):2711-17.
41. Enarson E, Morrow B. *The Gendered Terrain of Disaster: Through Women's Eyes.* Westport, CT: Praeger Publishers, 1998.
42. Amaratunga CA, O'Sullivan TL. In the path of disasters: Psychosocial issues for preparedness, response and recovery. *Prehospital and Disaster Medicine* 2006;21(3):139-44.
43. Chunkath S, Sherratt D, Chotani R, Smyth I, Burns K, Hidayat M. Panel 2.3: Gender dimensions and human rights aspects to responses and recovery. *Prehospital and Disaster Medicine* 2005;20(6):404-7.

Received: April 3, 2006
Accepted: January 22, 2007