

Resource Management Guidelines For Health Care Facilities During an Influenza Pandemic

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Note:

- This annex may not contain up-to-date information on the antiviral strategy. Refer to the Preparedness section of the Plan and Annex E for this information.
- See Background section of the Plan for information on the latest pandemic phase terminology.
- This annex may be out-of-date with respect to other planning activities and policy decisions.
- This annex is expected to be updated in 2007.

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Introduction

During influenza epidemics and pandemics when the overall attack rate is relatively high, even a low frequency of complications will result in marked increases in rates of hospitalizations. Pandemic influenza usually occurs in waves lasting 6 to 8 weeks in any one location. Therefore the demand on health care services provided at health care facilities can be expected to increase, peak and decline during the weeks in which any one location is affected.

It is estimated that between 34 thousand and 138 thousand people will need to be hospitalised in Canada during the next pandemic if the attack rate is between 15% and 35%. This will put enormous stresses on all aspects of the medical system and medical resources will be stretched beyond capacity.

This document is divided into a background section and two main guidelines sections - guidelines regarding the management of resources in health care facilities, and guidelines on the need for and identification of additional human resources as part of pandemic planning activities involving health care facilities. These guidelines identify activities for the interpandemic, pandemic and post-pandemic periods.

Although these guidelines focus on resource management in health care facilities, health services are delivered in many other settings, including: triage centres; telephone health support; physician clinics; ambulance/paramedical services; patient transport services; home care; long term care facilities, and public health. In addition, “non-traditional” health care sites may be set up for the pandemic response (e.g., mobile health units, acute /subhealth care facilities). Regional and local planners will need to address resource management issues for all health services settings. Guidelines for resource management in non-traditional sites are considered in another annex of the *Canadian Influenza Pandemic Plan – Annex J - Guidelines for Non-Traditional Sites and Workers*.

1.0 Background

1.1 Planning Assumptions

Current disaster plans primarily address multi-casualty, short-term, localised emergency situations. In a pandemic the impact is virtually world-wide and the duration of the “emergency” will be longer. Since multiple jurisdictions will be affected simultaneously, the sharing and exchange of resources may not be possible between jurisdictions.

For the purposes of resource planning for pandemic influenza the following assumptions have been made.

a) It is unlikely that there will be a “Declaration of Emergency”.

Regional Pandemic Plans should not assume that a National or Provincial Emergency will be “declared”, as this is unlikely to occur in the event of a pandemic.

b) The health care system may be overwhelmed.

There will be an increase in physician visits, hospitalizations and deaths putting the health care system under extreme stress.

- Canadian institutions are presently running at or close to maximal bed capacity and budget cutbacks and staff shortages have meant that many jurisdictions have already reduced elective admissions.
- Increasing or even maintaining existing bed capacity requires committed human resources. During a pandemic, shortages of personnel, supplies and equipment can be expected to limit the ability of institutions to respond to a significant increase in patient volume.

c) The best use of resources will be achieved through system-wide prioritization.

A pandemic will require a regional prioritization of needs and resources, across the health care system, not just a review of resources at a single institution. For example, in terms of human resources, health care professionals may need to be moved from vaccination clinics to hospitals or from one hospital to another. Beds, ventilators and other equipment may need to be moved to non-traditional sites. This will require a review of logistical, ethical and practical issues throughout the region.

d) There will be limited transfer of resources.

The global nature of the crisis will mean that resources from other jurisdictions cannot be depended upon for meeting additional requirements during a pandemic.

e) The usual supply lines will be disrupted.

The demand for medications, medical/surgical and other supplies will increase substantially around the world and across the country. Suppliers may experience difficulties responding to increased demand, due to staff shortages, raw material shortages and transportation disruptions. Additionally, because most medications, equipment and supplies are produced outside of Canada, there will be barriers to obtaining supplies which include embargoes of medications, cross border issues and transportation issues due to staff shortages.

f) A pandemic vaccine may be unavailable.

There will likely be no vaccine available until well into the first wave of a pandemic or later, depending on the time necessary to find a suitable vaccine seed strain, and for development, testing and production. When a vaccine does become available, immunization clinics targeting health care workers may need to be established inside health care facilities.

g) Anti-influenza drugs will be in short supply.

Currently no raw materials for anti-influenza drugs are produced in Canada. Existing supplies are very limited and insufficient to form the basis for an effective antiviral response strategy. Stockpiling of these medications is being considered.

When and if antiviral drugs are made available, treatment and prophylaxis for people seeking health care services at health care facilities will need to be prioritised according to national recommendations.

h) The number of essential service workers will be reduced.

The availability of health care workers, and service providers essential to limiting societal disruption during a pandemic, may be reduced due to illness in themselves or family members.

i) The pandemic will occur in waves.

The pandemic will likely occur in successive waves of approximately 6 to 8 weeks duration in any one community followed by a recovery period of unknown duration. Between the waves substantial resources will be required to “catch up” with elective procedures, delayed treatments for cancer or cardiac care and other treatments. Maintenance on equipment, restocking of supplies, and other activities necessary to recover and prepare for another pandemic wave will need to occur during this time frame.

1.2 Projecting the Impact

No one can predict how serious the impact of the next influenza pandemic may be. Current Canadian estimates have been calculated based on attack rates for symptomatic illness of 15% and 35%, however, higher attack rates are possible. Local estimates of the potential impact of a pandemic (the number of ill persons, the number of hospitalisations, number of deaths, etc.) can be projected using software programs, e.g., the “FluAid” software developed by the Centers for Disease Control and Prevention in the U.S. (<http://www2.cfd.gov/bd/fluaiHlt13977776d Hlt13977776/default.htm>).

This software presents some challenges and has some limitations based on the fact that it is geared to the U.S. health care system and health seeking behaviours, which may be quite different from Canada. Currently there are no reliable tools for estimating rates of intubation, which would assist in planning for equipment such as ventilators. An example of how one province, Alberta, has used FluAid is provided as Annex A in the Preparedness Section of the Plan.

2.0 Resource Management in Health Care Facilities

2.1 Resource Management During the Interpandemic Period

The following activities should take place during the interpandemic period. Further detail is provided below this list.

- Review emergency preparedness legislation
- Identify triggers for intervention
- Planning for increased bed capacity
- Plan for patient prioritisation
- Plan for critical equipment and supplies

2.1.1 Review Emergency Preparedness Legislation

Emergency Preparedness Legislation makes many provisions for the management of a crisis, obtaining and accessing materials, and other resources, implementation of crisis plans and also provides for a crisis management structure. This includes the recruitment of professional and other paid staff as well as volunteers, managing human resources and protection of people who volunteer. Pandemic planning should be integrated with the emergency legislation as well as emergency plans of the jurisdictions in order to make best use of existing plans and resources.

Important Note: Regional Pandemic Plans should not assume that a National or Provincial Emergency will be “Declared”, as it is highly unlikely to occur in a pandemic. Provincial and territorial planners should assess issues such as workers compensation and liability insurance, maintaining and supporting workers and other aspects of the plan that may arise without such a declaration.

The national support framework is not contingent upon a declaration of a national emergency. It is recommended that all provincial and territorial planners review both the Federal and the Provincial/Territorial Emergency legislation to determine how to integrate plans within the framework of emergency legislation.

For example it is important to identify what provisions of legislation are particularly applicable to obtaining use of property and materials in a crisis. These provisions would include but likely not be limited to:

- the ability and responsibility of authorities to requisition property for use as non-traditional sites,
- access to transportation, materials, administrative staff and other resources, and
- compensation for requisitioned property.

2.1.2 Identify Triggers for Implementation

Existing legislation and emergency plans at the government and institutional level already identify criteria that would trigger the implementation of specific plans. The *Canadian Pandemic Influenza Plan* will also describe general points of action.

In co-ordination with existing legislation and plans, provincial/territorial, regional and local authorities and institutions should identify key criteria and methodologies that would trigger the phased implementation of plans regarding resource management activities in their jurisdiction. The local medical officer of health, together with the local pandemic response team, will decide when to initiate the pandemic influenza plan for their jurisdiction.

Since it is unlikely that the pandemic will start in Canada, the first trigger may be reports of the severity and epidemiology of the pandemic from other countries. This will likely be the first indicator of what to expect when the pandemic reaches Canada in terms of demand for health care services.

Local health care resources and local disease epidemiology, for example, the number of confirmed influenza cases in the community, or data on the impact of pandemic influenza on other Canadian jurisdictions, will determine the triggers for health services emergency plans. These triggers may include:

- The proportion of emergency room visits attributable to influenza.
- The proportion of influenza cases requiring hospitalisation.
- The capacity of the hospital to accommodate influenza cases.

Other triggers may include reports from sentinel physician or walk-in clinics that they cannot accommodate all of the patients requesting appointments for influenza-like-illness. Ambulance re-routing to other acute care setting due to full emergency rooms may serve as another trigger for reallocation or acquisition of resources. The trigger points and surveillance protocols should be defined during the interpandemic period.

Federal, provincial/territorial, regional and local authorities and institutions may designate points at which the following specific actions are taken.

- Changing staffing ratios, job duties
- Reducing surgical slates, admissions
- Consolidating services
- Procuring additional supplies
- Calling on alternative staff
- Re-routing of ambulances

2.1.3 Planning for Increased Bed Capacity

In any institution a “bed” includes infrastructure support, including staffing, which is required to care for the patient in that “bed”. Therefore the requirements for a “bed” in an intensive care unit, for example, include all the support required for a patient to be cared for at that level.

Planning to increase bed capacity during a crisis includes:

- identifying the strategies in advance,
- planning for the consequences of these strategies, and
- identifying trigger points at which the options will be implemented.

Various options to increase bed capacity have been identified, including:

- reducing elective admissions and surgeries to maximise medical bed capacity, and to maximise critical care beds,
- changing protocols or requirements for early discharge,
- increase home care staffing,
- increase the number of residential beds, long-term care and hospice beds,
- re-opening capacity currently closed,
- using reserved critical care capacity,
- using emergency ventilation facilities in recovery and operating rooms,
- assessing associated sites such as clinics, extended care facilities and psychiatric facilities for use by non-influenza patients, and
- creating “flex” beds during the influenza season.

Programs that track and manage Bed Capacity such as the Ontario Critical Program and Ontario Resource Registry, British Columbia’s “Bedline” and Alberta’s Call Centre System play a key role in the transfer/placement of critical care patients across the province, thus ensuring that staffed beds are used to maximum advantage. The Resource Management subgroup has recommended that each province/territory create a centralized bed registry, call centre and centralized ambulance dispatch.

Appendix A of this document includes checklists to assist in evaluating bed capacity in health care facilities.

2.1.4 Plan for Patient Prioritization

During a pandemic it will be a challenge to manage high ward and intensive care unit censuses, and high emergency department volumes in the face of reduced availability of health care workers and limited respiratory support equipment.

The pandemic may have a first wave of approximately 6 to 8 weeks and there may be one or more subsequent waves. Cancellation of elective admissions and surgeries, as a way of managing limited resources, could have serious consequences for some patients, including cancer and cardiac patients. Since elective surgeries are not all equivalent in terms of necessity and risks of delay, health authorities must consider within their province/territory, region, municipality and/or facility how patients scheduled for elective admissions/surgeries will be prioritized if beds are limited.

Prioritization of health resources at times of critical shortages will also need to be considered. Local community-based centres and hospitals need to take a multi-disciplinary approach and include ethical and legal considerations when developing any prioritization processes. The Clinical Care Guidelines (Annex G in the *Canadian Influenza Pandemic Plan*) provide recommendations on the assessment and management of influenza and non-influenza patients during a pandemic, including algorithms on the triage of adults and children based on their clinical presentation and

risk factors or co-morbidities. However, if supplies, equipment, and access to intensive care must be rationed, a fair and equitable prioritization process will need to be established.

A general approach to ethical considerations will be developed by the national pandemic planning working groups. This will require further discussions including ethics and public consultations. With the ethical considerations and goal of the pandemic response in mind, each community will need to make their own decisions on prioritization, depending on the availability of resources, stage of the pandemic in the community and management decisions made up until the point that rationing/prioritization becomes necessary. Since there are so many variables and contingencies, it is highly unlikely that a nationally developed guideline would be detailed enough to meet the needs of those involved in these types of decisions at the local level.

2.1.5 Plan for Critical Equipment and Supplies

A pandemic will likely result in shortages of medications, medical supplies, and potentially, operational supplies. Since multiple jurisdictions including other countries 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. Some of the issues directly affecting Canadian supplies will be:

- **Interrupted transportation lines** — Canadian supplies travel long distances by truck train and aircraft. Supplies are often obtained from the U.S. and other nations. Difficulties at border crossings may substantially affect supply lines. In addition, a loss of up to 30% of workers, drivers, and other transportation staff may affect the production and delivery of supplies.
- **Lack of inventory**—In an effort to reduce costs, most health regions have moved to “just-in-time” inventory systems that keep minimal supplies on hand.
- **Embargoes** — The majority of medical supplies are not produced in Canada. Health Canada has made major efforts to establish a domestic infrastructure for the manufacturing of influenza vaccine and has encouraged in-Canada manufacture of some antibiotics. However in many cases supplies are provided by only one or two manufacturers worldwide, or the essential ingredients or components come from a single source. In past pandemics and health crises other nations have banned the export of critical vaccines, medications and supplies.

Recommendations for the use of vaccine and antivirals during a limited supply situation are provided in other annexes. Other resources such as the Infectious Diseases Society of America (IDSA) Guidelines lists medications considered to be critical in the treatment of influenza and pneumonia. These guidelines should be distributed to and reviewed by health care facilities during the interpandemic period since these issues will affect the management patients and resources, including medications, within the facility.

Stockpiling

Provinces/Territories and local health authorities may wish to review the possibility of rotating stockpiles of critical supplies for health care facilities within their own jurisdictions. Jurisdictions may specifically wish to keep some older equipment such as beds, which need little maintenance and have no specific “shelf life”. Appropriate assessment should be made of the maintenance and training required to ensure the safety and effectiveness of older equipment, training needed by staff to use unfamiliar equipment, etc. (See Appendix B for supply management checklist)

After such a critical assessment, institutions and health authorities may consider maintaining certain critical pieces of older equipment such as ventilators.

The stockpiling of antiviral drugs will be discussed at the national level, however, the need to and feasibility of stockpiling critical medications for the management of patients with influenza and secondary pneumonia, should be addressed at the P/T and local levels. In addition, provinces and territories will have to discuss with local pandemic planners the need to stock larger quantities of medications and equipment to manage persons with co-morbidities, e.g., chronic cardiac and respiratory disease, diabetes, renal failure, that may be exacerbated by influenza infection. The Clinical Care Guidelines (Annex G) provide guidance on antibiotics for the treatment of secondary pneumonia. The antibiotics currently stockpiled at the national level will be reviewed to determine whether these can be utilized in a pandemic, in addition to, further discussions on the need for additional national stockpiles.

Local Production

During a crisis some items, which are usually ordered from centralized sources, may be produced locally. Procurement specialists may wish to review which supplies could be obtained or produced locally if prior arrangements are made. Possible suppliers and suppliers of alternative products should be contacted to explore this possibility.

2.2 Resource Management During the Pandemic Period

Prior to the onset of the pandemic it not known which populations will be most affected by the novel virus, and what the prominent symptoms of the disease, and the most common complications will be. Once the WHO has identified a “Novel Virus” and confirmed “Human to Human Transmission”, this information will gradually become available. Planners should review the epidemiology of the disease in light of the demographics of their own population and in terms of their existing resources and revise plans for the allocation of resources based on this information.

The following activities, with respect to health care facilities, should occur during this phase of the pandemic when the triggers indicate the need for action.

- Implementation of emergency plans.
- Increase bed capacity.
- Review critical equipment and supplies.

2.2.1 Implementation of Emergency Plans

Based on the previously identified triggers for action and existing legislation and plans, the phased implementation of pandemic response plans will be initiated at this time.

2.2.2 Increase Bed Capacity

To increase bed capacity, based on the plans made during the interpandemic period, the following activities may occur during the pandemic:

- re-open closed wards and hospitals,
- cancel elective surgeries and admissions based on the prioritization process determined earlier,
- centralize the tracking of bed capacity,
- use of reserved critical care capacity,
- preparation and use of emergency ventilation facilities in recovery and operating rooms,
- cohorting infectious and non-infectious patients in alternative sites such as clinics or extended care facilities, and
- discharge as many patients as possible based on revised criteria for discharge.

Provinces and territories should review and consider any existing legislation that may put restrictions on patient and staff movement.

2.2.3 Review Critical Equipment and Supplies

Review and revise supply needs and plans based on WHO and Health Canada epidemiologic projections.

- Order additional supplies.
- Establish alternate transportation/distribution arrangements if required.
- Establish domestic production of supplies where possible.

Health Canada or other authorities will notify jurisdictions of the status of stockpiles, embargoes, and emergency production facilities. Vaccine and antiviral supplies and recommendations on their use in times of shortages will be co-ordinated at the national level.

2.3 Resource Management During the Post-Pandemic Period

Activities at health care facilities during this pandemic phase will focus on the implementation of recovery plans to return the facility to its normal, interpandemic, operating state. Beds may be closed and additional supplies acquired during the pandemic may be returned or put into storage. The pandemic response should be reviewed and evaluated so that plans may be revised as necessary during this or the interpandemic period.

3.0 Guidelines for Human Resource Management in Acute Care Settings

3.1 Introduction

During an influenza pandemic there will be an increased need for people with health care training to deal with the increased demands on the health care system. This may involve the re-locating of health care workers to different settings within an acute care facility or expansion of the services usually provided at these facilities (e.g., to include immunization clinics for health care workers). In addition, non-health care workers or retired health care workers may need to be hired/contracted to provide supplementary services essential to meet the demand for services at health care facilities. Volunteers will also be a potentially vital source of human resources to facilitate the management of health care services during a pandemic.

During an influenza pandemic the shortage of trained medical staff will be one of many barriers to the provision of adequate care. A significant proportion of the workforce may be unable to attend work for a period of time due to illness in themselves or family members. Communities and health care organizations will need to have specific guidelines in place to address what will be done if the health care system is overwhelmed and non-traditional sites must be established or current service sites expanded. Human resource management at non-traditional sites during a pandemic is addressed in the Guidelines for Non-Traditional Sites and Workers, Annex J of the Plan. This section of the document will therefore focus on human resource issues in acute care settings.

3.2 Human Resource Management During the Interpandemic Period

Health authorities may make preliminary estimates of staffing needs based on estimates of the impact of a pandemic and the demographics of the region (see Section 2.1).

The following list of activities is provided to assist with planning for the optimal use of human resources, including health care workers, trainees, retirees and volunteers, at health care facilities. Further details are provided in the following sections.

- Plan for optimal use of health care workers and volunteers
- Review emergency legislation pertaining to health care workers and volunteers
- Provide training
- Consider insurance and licensing issues
- Immunization of health care workers, including volunteers
- Plan for support for health care workers, including volunteers

3.2.1 Plan for Optimal Use of Health Care Workers

The work involved in identifying current health care workers who could be re-located within an institution and recruiting additional health care professionals, other health care workers and volunteers that could offset some of the increased demands on health care workers that will occur during a pandemic, should be initiated during the interpandemic period.

a) Appoint a human resource management team

Identifying current health care workers; recruiting additional professionals, non-professionals and volunteers; and managing the training, assignment and support of health care workers to various locations and tasks will be some of the most important pandemic preparedness tasks. Establishment of a team or subcommittee that could take on these responsibilities in each jurisdiction is an important first step. A combination of professionals with expertise in human resource issues, pandemic planning, health care administration, infection control, occupational health and safety, and volunteer organizations would be desirable for this planning team/ subcommittee.

b) Placement of personnel

During a pandemic, health care workers may need to be reallocated from their usual roles and settings. For example, trained health care professionals, may be required to expand their role to include the supervision of volunteers and other staff in the acute care settings, affiliated clinics and non-traditional sites.

While it is likely that all health care workers will be needed at their usual acute care facility, consideration should be given as to the source of staff for other sites including:

- Triage Sites – community triage sites: at clinics, non-traditional sites, attached to an existing hospital.
- Non-Traditional Sites – including emergency care centres, emergency hospitals, support hotels, nursing stations, etc.
- Vaccination Clinics –clinics in acute care sites, etc.

The Guidelines for Non-Traditional Sites and Workers (Annex J) address many of the human resource issues involving these sites. However, it is important to recognize that the expertise needed for the clinical management of influenza patients predominantly resides within the health care facilities. Positioning some staff at these sites may offset the demands on the health care facilities and ultimately lead to the optimal use of human resources.

Health authorities must review the needs of their own communities to determine whether more emphasis should be placed on supporting community care options and which staff will be needed where.

c) Review scopes of practice

Even in acute care settings, delegation of tasks and authority will, by necessity, change during a pandemic. A shortage of staff and increase in the number of patients may necessitate cancellations of surgery, tests and other procedures. Staff may be reassigned from their usual roles to make best use of their skills. Retired and foreign-trained personnel may be asked to step in.

Negotiations and planning must take place within each province and territory, with existing colleges, associations and insurers in order that the process of reassignment and delegation may take place quickly and as smoothly as possible. (See the section on Emergency Preparedness Legislation.) Prior negotiation with licensing bodies and bargaining units to facilitate changing of job descriptions and the use of alternative workers during a pandemic will ease the transition and make the process more efficient. In the interpandemic period we recommend the jurisdictions take the following actions:

- Establish a process, in conjunction with existing emergency plans, to assess the work needed and skills required for each task. Jurisdictions need to look at the process of intake, reception, triage, clinical care, clean up, etc. and assess additional workers or sources of workers who already have the skills to be slotted into these jobs.
- Review the recommendations on patient assessment and management in the Clinical Care Guidelines which will indicate the needs for various skills at various points in patient care, and determine who may provide those during a pandemic.
- Communicate with health care professionals about pandemic needs.

d) Recruit professional staff for the pandemic response

Within facilities, consideration should be given to reassigning medical and nursing personnel with administrative, research and educational assignments to clinical duties.

Alternate sources of HCW would include, but are not limited to:

- retired physicians/nurses (need to be assurance that work during a pandemic would not affect their pension plans)
- physicians/nurses currently not working in clinical health care (i.e., working in education, administration, research, private industry)
- trainees (i.e., medical students and nursing students)
- registered nursing assistants
- patient care assistants
- emergency medical technicians
- veterinarians
- pharmacists
- therapists (respiratory/occupational/physio)
- technicians (laboratory, radiography)
- health care aides

Consider how best to recruit persons with health care qualifications but not currently working in the health services. Work with professional associations to determine how to communicate with their members prior to the pandemic about pandemic issues, and how they might communicate during the pandemic.

Provinces/territories may work with professional associations to ensure that persons with health care qualifications but not currently working in the health services maintain their qualifications and competencies. It is also important to establish a method for assessing professional qualifications and competence during the pandemic when people are being hastily recruited.

Developing and maintaining databases of staff is a time consuming and expensive task. Databases are only useful if kept up to date with licensing, skill set and contact information.

Most health care facilities will already have some type of database of their staff. Local facilities or authorities may wish to develop databases of workers with specific training (through licensing bodies and associations) or establish a co-operative arrangement with licensing bodies, associations or volunteer agencies that already maintain these lists.

Provinces/territories are encouraged to review professional and privacy legislation to determine how best to maintain such lists. It may be most appropriate both legally and effectively to ask professionals to volunteer their names as pandemic workers. It may also be appropriate to provide some form of incentive in the form of free training, subsidized license fees etc. to encourage professionals to volunteer their names.

Develop methods to ensure:

- Qualified workers can be contacted quickly and easily,
- Workers are placed where they are needed most, and
- Workers' training and qualifications are on record to ensure people have appropriate qualifications.

3.2.2 Review Emergency Legislation Pertaining to Health Care Workers

Emergency Preparedness Legislation makes many provisions for the management of workers during a crisis. This includes the recruitment of professional and other paid staff as well as volunteers, managing human resources and protection of people who volunteer. Pandemic planning should be integrated with the emergency plans of the jurisdictions as much as possible, in order to make best use of existing plans and resources. There is no assurance that a national emergency will be declared; jurisdictions should be prepared to operate under either condition. Therefore human resource planning should be based on existing plans without a declaration.

The following provisions of legislation are particularly applicable to human resource issues including:

- authority regarding licensing and scope of practice issues, and the ability of government to make unilateral changes during a crisis;
- safety and protection of workers, (one of the primary responsibilities);
- fair compensation;
- insurance, both site insurance, workers compensation and other forms of insurance;
- training;
- provision of clothing and equipment;
- protection of the jobs of workers who take leave to assist during the crisis.

Compelling Workers

Under Emergency Legislation provinces/territories may have the authority to designate "Essential Services" and workers and have the ability to compel people's time or property with due compensation as a last resort.

This issue has been raised both because of the existing shortage of health care workers and concerns that health care workers and others may refuse to work during a pandemic due to

changed job responsibilities, fear of infection, family responsibilities or other reasons. However, the Subgroup notes the extreme difficulty of enacting or enforcing such legislation and would strongly encourage the jurisdictions to review all other methods of obtaining health care workers, in advance of a pandemic.

3.2.3 Provide Training

Health care professionals, both those currently working in their fields and those working elsewhere or retired, as well as volunteers may benefit from training and communication regarding pandemic plans. As well as looking at specific skills, training and communication may focus on preparedness, changing roles and responsibilities, supervising volunteers, crisis management and emergency planning.

a) Start training and awareness building now

There will be very little time for effective training, once a pandemic is underway. Therefore, training should be incorporated into existing programs provided during the interpandemic period. By incorporating the skills needed during a pandemic into existing training, we reduce costs, improve efficiency and enhance readiness.

Training and awareness building will be needed in order to:

- motivate development of a response capacity, including identification of responsibilities and preparation activities, in acute care settings,
- facilitate an understanding of pandemic consequences, vaccination and ethical issues, among health care providers, prior to the pandemic,
- recruit workers willing to take on new responsibilities during the pandemic,
- encourage health care workers to maintain skills and licensing while working elsewhere, and
- develop specific skills related to pandemic influenza.

b) Identify skill/knowledge requirements

Health care workers will need to be skilled and knowledgeable in the fields of infection control, crisis management, worker supervision and working with grieving families, which may not be a significant part of their current responsibilities. In addition, it would be useful to expand and maintain the number of health care professionals and others with training in oxygen therapy and the use of ventilators and care of patients on ventilators.

Clerical skills in terms of patient tracking procedures will also be needed in overwhelmed health care facilities, as will people who can train patients and families in “self-care” thereby facilitating early discharge of patients. Ideally all health care workers should be trained in the principles of self-care, since they will be the primary conduit of information to their patients, families and communities. (See Clinical Care Guidelines and Tools Annex in the Plan for more information on self-care).

However, it is recognized that because of the difficulty of maintaining many of these skills without constant use, training programs targeting these skills should be developed for quick and efficient implementation once a pandemic is declared.

It is also advisable to develop a plan specifically for training or re-training of health care workers who are not currently working in health care, for example retirees.

c) Train the trainer

Health authorities and existing volunteer agencies, may establish programs to “train the trainers”. Through this process a pool of trained individuals can be maintained, during the interpandemic period, that would be available to implement training programs as quickly as possible at the onset of a pandemic.

To facilitate this process it would be essential to:

- identify and train those with knowledge of the tasks and adequate communication skills to act as trainers during the pandemic,
- identify training resources of use to on-the-job trainers,
- ensure there are adequate, easy to use procedures/instruction manuals for tasks such as admissions, patient tracking, etc., and
- use and share existing training programs and materials which can be adapted for pandemic influenza.

d) Plan now for training during the pandemic period

A great deal of training will have to be done once a pandemic is declared. Staff not currently working in health care and volunteers may only come forward once a pandemic is declared. In addition, it may be necessary to update training closer to the pandemic period. In order to ensure that this is done swiftly and efficiently during the pandemic, the following preparations should be made in advance:

- identify training which will take place following the declaration of pandemic,
- identify and obtain training resources which can be tested and used during the pandemic period,
- train the trainers (see above), and
- plan for where and how training will be delivered during the pandemic.

3.2.4 Consider Insurance and Licensing Issues

Insurance and liability coverage should be provided for trainees, volunteers, retirees and any other workers that are recruited to provide health care services during a pandemic. A more in-depth treatment of insurance and liability issues may be found in the annex on Non-Traditional Sites and Workers (Annex J). While these issues will be investigated at the national level, each province/territory will need to review existing legislation and policies to determine how this might be accomplished in their respective jurisdictions.

a) Liability insurance for workers and volunteers

The need to expand scopes of practice may have implications for liability protection/ malpractice insurance.

b) Workers' compensation

A Memorandum of Understanding (MOU) between the Office of Critical Infrastructure Protection and Emergency Preparedness (formerly Emergency Preparedness Canada), and the provinces/territories asserts that registered volunteers or persons compelled/ conscripted for emergency service work are protected by workers' compensation during emergency response, as long as they are registered. Some volunteer agencies, have a liability policy for their volunteers.

In some circumstances, volunteers who register with designated agencies may be covered by workers' compensation under emergency legislation. However, there are a number of issues to be resolved with workers, compensation boards at the provincial level:

- Does the policy require a declaration of Emergency and, at what level of government, or would the insurance come into effect once the Minister of Health declares a pandemic?
- Definition of health care workers for this purpose.
- Definition of volunteers for this purpose.
- Compensation is usually based on loss of income, however, in some cases volunteers may be retired, homemakers, or self-employed. Would compensation cover costs of the person's other responsibilities, such as family care?
- Would compensation be available if volunteers became ill rather than injured?
- Does this include Death and Dismemberment insurance?

Ensure such insurance is available independent of the need for a “Declaration of Emergency.”

c) Transfer of licensing between jurisdictions

(This section is under review pending discussion with provincial and territorial licensing organizations.)

Each province/territory needs to liaise with professional licensing bodies in their jurisdiction during the interpandemic period regarding licensing issues. In addition, professional licensing bodies may be asked to liaise and extend privileges to out of province professionals, based on their standing in another jurisdiction.

3.2.5 Immunization of Health Care Workers

While it is unlikely that a vaccine for the pandemic strain of influenza will be available in advance of the arrival of the pandemic in Canada, health care workers should be up-to-date with the other routinely recommended immunizations. Because immunizations require varying amounts of time and some require more than one dose for a person to develop immunity, it will likely be impossible to provide all of these once a pandemic is declared, or to provide them within an appropriate time frame given the lack of supplies and human resources.

Once a pandemic vaccine becomes available the vaccine will be distributed according to nationally agreed upon recommendations for prioritisation of vaccine recipients. A preliminary list of priority groups has been developed by the Vaccines Sub-group and is provided in Annex D of the Plan. The priority and composition of these groups may change based on the epidemiology of the pandemic. However it is widely recognized that health care workers are critical to the pandemic response and should be considered high priority for immunization during a pandemic.

3.2.6 Supporting Health Care Workers

During a pandemic, health care workers will need considerable personal support in order to keep working. During the interpandemic period, it is important to plan for how these services may be provided. Some strategies may require changes in policy, or even in legislation to ensure the availability of health care workers during the pandemic. Support provided to health care workers may include:

- Basic personal support – ensure food and services are available to HCWs on the job.
- Emotional support/grief counselling (aimed at permitting workers to continue to work and reduce loss of staff due to grief or traumatic stress).
- Family care (for children, seniors, sick family members who do not require hospitalization). This poses significant infection control concerns if gathering children or the elderly together for group care.
- Job protection for HCWs who move from other jobs during pandemic.
- Job protection for spouses who do family care to allow HCWs to work in health care.

In order to develop crisis programs, health authorities may build on existing employee support programs. This may involve:

- contacting existing support services,
- working with chaplains, counsellors and grief counsellors to develop crisis support programs including grief support and traumatic stress counselling,
- determining whether child, or family care, programs would be appropriate for the site(s) and where and how they would be set up (e.g. Contract with YM/YWCA), and
- reviewing legislation to determine if there is protection for spouses who take on child care responsibilities to permit HCWs to continue to work.

3.3 Human Resource Management During the Pandemic Period

If the pandemic arrives in other countries prior to arriving in Canada, information on the epidemiology of the pandemic strain will be circulated internationally as it becomes available. Planners will need to consider each piece of new information in terms of how this might impact their own population and potentially revise plans for the allocation of human resources based on this information.

The following steps/actions will need to occur during the pandemic period to optimise the human resource dependent response:

- organize the deployment of health care workers
- work with emergency management personnel and use emergency preparedness legislation as required
- implement training and communication plans
- manage insurance and licensing issues
- address immunization needs
- support health care workers

3.3.1 Organize the Deployment of Health Care Workers

At this point it will be necessary to activate the Human Resource Planning Team and recruit new members that may be vital to the implementation of previously developed plans. This will facilitate the coordinated management of human resource issues. Next steps are listed below.

- Identify key and supervisory positions and the people to fill them.
- Based on current staffing levels, and assuming a similar attack rate for staff as for the rest of the population, estimate additional staff needs for each region.
- Reassign staff where necessary.
- The Team, in conjunction with the local health authority, should update the inventory of current staff, number of beds, and acute care settings.
- Review worker and volunteer databases established in the interpandemic period.
- Call for staff – Communicate with the public and with health care workers that are not currently working, regarding the possible need for additional staff.
- Screen additional staff.
- Train – existing staff in special tasks and train additional staff.
- Deploy staff.

3.3.2 Coordinate Response with Emergency Management Personnel

During a pandemic the relationship between emergency measures organizations and personnel, and medical authorities and personnel will determine the overall response to the crisis. The best deployment of health care workers and other essential workers will result from well established, coherent communication between emergency preparedness personnel and health authorities.

Advance planning should focus on establishing communication strategies and protocols which will permit on-going direct, daily integrated communication during the period of the pandemic. Knowledge and implementation of existing legislation, strategies and resources and a transparent means of communicating with health care workers and other essential workers, as well as the public will permit authorities to efficiently implement adequate human resource management strategies during the crisis.

3.3.3 Implement Training and Communication Plans

During the pandemic period staff and volunteers will be identified who need additional training. This will include training such as: working with ventilated patients, and basic support skills such as sterilization procedures, management of admissions etc. to permit licensed trained health care workers to take on additional tasks. It is vital that the training be quickly and easily available in formats that are short, manageable and preferably “on-the-job” where possible.

- Identify experienced people, those with knowledge of the tasks and adequate communication skills and provide them with resources to permit them to train others. (See Train the trainers above.) Ensure trainers and experienced people remain available for consultation and training on an on-going basis.
- Review training programs and emphasize skill sets based on the epidemiology of the disease.
- Use the time between the WHO/Health Canada declaration of pandemic, and the arrival of the first wave in the jurisdiction to train as many staff and volunteers as possible in general and specific tasks.
- Call on existing agencies such as St. John Ambulance and the Red Cross to ramp up existing training programs with an emphasis on tasks required to treat influenza patients.
- Maintain records of trained individuals to ensure best deployment of those individuals.

3.3.4 Manage Insurance and Licensing Issues

It will be important to communicate any necessary changes to licensing and insurance provisions to all stakeholders. This will require a thorough review of provisions for insurance in the provincial/territorial emergency plan, a review of licensing issues and communication with licensing bodies, associations, colleges, etc. regarding this issue.

If insurance and/or licensing arrangements require activation of some form of legislation, bylaw or declaration, inform the Minister of Health and other appropriate authorities.

Inform chiefs of staff, managers, supervisors and human resource professionals in health care settings, of changes in licensing and insurance and what that will mean for flexibility in staff deployment, additional staffing, requirements for deployment, or any other provisions of legislation, licensing or insurance with which the institution must comply.

3.3.5 Address Immunization Needs

Health care facilities may have to provide qualified personnel capable of administering immunizations, under the guidance of public health authorities, to staff clinics targeting staff and volunteers at their site.

3.3.6 Support Health Care Workers

Review plans made during the interpandemic period to provide support to all health care workers including volunteers and retired persons, to enable them to continue working. During the pandemic authorities may:

- Establish personal support services providing on-site food delivery, nap rooms, etc.
- Set up counselling services (find an office, determine a schedule).
- Call in additional counsellors, grief counsellors, chaplains, clergy, clerical support.
- Set up child/family care services.
- Notify staff of how to access these services.
- Notify staff of legislated protections such as protection for job of spouse while caring for children.

3.4 Human Resource Management During the Post-Pandemic Period

Activities during this period will focus on the demobilization of staff and volunteers. The pandemic response, in terms of human resources, should be reviewed and evaluated so that plans may be revised as necessary during this or the interpandemic period.

Consideration should be given to methods to formally recognize the efforts of all workers involved in the pandemic response.

Evaluation of Bed Capacity

These worksheets have been designed to assist facilities in planning for an influenza pandemic. It can be used to complement centralized bed management systems, or used on their own to evaluate bed capacity and how to achieve maximum bed utilization. Facilities should determine the maximum number of beds available and the numbers of hours of care needed to staff the beds. During an influenza pandemic there would most likely be a change in acuity of beds.

Who has responsibility for collecting this information? (Check your facility's emergency plan.)		
Position Title		
Who will have authority and responsibility to apply this information during a Pandemic?		
Position Title		
1. What is the total number of non-ventilated beds, without oxygen supply, which are:		
a) Currently open and staffed?		
b) Which could be available during an emergency if extra resources were available in the short term?	In 72 hours	In 7 days
What are the limiting factors (staffing, equipment, physical space, other)?		
2. What is the total number of non-ventilated beds, with oxygen supply, which are:		
a) Currently open and staffed?		
b) Which could be available during an emergency if extra resources were available in the short term?	In 72 hours	In 7 days
What are the limiting factors (staffing, equipment, physical space, other)?		
3. What is the total number of ventilated beds which are:		
a) Currently open and staffed?		
b) Which could be available during an emergency if extra resources were available in the short term?	In 72 hours	In 7 days
What are the limiting factors (staffing, equipment, physical space, other)?		
4. If a directive came to stop all elective surgery/admission:		
a) How many beds would become available?	In 72 hours	In 7 days
b) How many beds, with oxygen supply, would become available?		
c) How many ventilated beds would become available?		

5. How many extra emergency ventilatory beds could your hospital create? [NB. Consider use of all ventilator capacity, including time-cycled ventilators, anaesthetic machines, CPAP, BiPAP, and the availability of oxygen/suction and air-supply, recovery and operating rooms and neuroscience beds.]		
a) Assuming current staffing levels (redeployment of staff permitted)	In 72 hours	In 7 days
b) Assuming additional resources for staffing:		
What are the limiting factors (staffing, equipment, physical space, other)?		
6. Does your hospital have any excess capacity to assist other health care facilities or the community, such as provisions of meals, sterilization capacity?		
7. Does your hospital have an affiliation with a Health Care Facility, which may have extra bed capacity?		
Affiliation	Number of Beds	
▪ Long-Term Care Facility		
▪ Acute Detoxification Unit		
▪ Rehabilitation Facility		
▪ Crisis Unit		
▪ Other Type		

Inventory of Beds (Work Sheet)									
Type of bed	Total number of physical beds in facility	Number of physical beds with oxygen supply	Number of currently operating beds (opened and staffed)	Number of currently operating beds with oxygen supply	Estimate current proportion of elective vs emergency cases/beds	Number of beds able to be staffed using current resources	Space for beds available, with oxygen outlet, no physical bed available	Space for beds available, no oxygen outlet no physical bed available	Comments (e.g., unique equipment, special purpose)
Medical									
Special medical/stepdown									
Surgical									
Special surgical									
Coronary care*									
Intensive care*									
Paediatric									
Obstetric									
Special care nursery									
NICU									
Day ward									
Recovery room*									
Sleep laboratory									
Closed wards									
Other									
TOTAL									

* denotes areas currently used for ventilation which could be used for emergency ventilation

Inventory of Ventilators (Work Sheet)											
Types of ventilators	Intensive care	Coronary care	Special medical/step-down	Recovery room	Operating room	Emergency department	Storage	In repair	Sleep study laboratory	Physiotherapy	Other
Oxylog											
Bird											
CPAP spont. breathing											
BiPAP spont. breathing											
TOTAL											

Emergency Ventilatory Capacity Considerations (Work Sheet)									
Property	Intensive care	Coronary care	High dependency	Recovery room	Operating room	Emergency department	Neuro-science	Sleep study laboratory	Other
Suction									
Oxygen outlet									
Medical air outlet									
Airflow (negative pressure)									
Airflow (positive pressure)									
Room monitoring									
Physical bed									
Space, but no physical bed									

Example Supply Management Checklist

Operational Period:				Date Prepared:				Prepared By:			
Location required	Facility	Item and unit size	Shelf life	Have	Need	Stockpile/ location	Supplier name/ location	Issues affecting supply* & alternate arrangements			

* Issues Affecting Supply
 Interrupted transportation lines — Canadian supplies travel long distances by truck train and aircraft. Supplies are often obtained from the U.S. and other nations. Difficulties at border crossings may substantially affect supply lines. In addition, a loss of up to 30% of workers, drivers, and other transportation staff may affect supplies.
 Special storage or transportation requirements (e.g., Cold Chain).
 Just-in-time inventory — Supplies can be obtained but may take some time.
 Embargo — If the item is not produced in Canada is it an item which is likely to be embargoed.
 Single supplier or limited number of suppliers — if there are a limited number of suppliers or sources of the essential ingredient or component, note that there are no alternate suppliers.

