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Sustaining Health Care Professionals during Pandemic Influenza: A Pre-incident Pilot Project

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MAIN RESEARCH FINDINGS

Quantitative Findings: The results of the STAI-s measure indicated that the pandemic information package had a large effect in terms of increasing the anxiety level of the focus group participants.

Qualitative Findings: The six overall themes and respective sub themes that summarize the findings of our research are as follows:

- **Theme 1: Relationship between work and home.** Sub themes: a) Professionalism and being mandated to work; b) Ethical dilemma of resource allocation; c) Increased shortage of health care providers; d) Morbidity and mortality;
- **Theme 2: Emotional impact.** Sub themes: a) Fear; b) Overwhelm; c) Moral Distress; d) Grief, Guilt and Anger; e) First Wave versus Respite
- **Theme 3: Psychosocial support.** Sub themes: a) Support from leadership; b) Organizational Support; c) Interpersonal or Team Support; d) First Wave Versus Respite
- **Theme 4: Leadership authority and difficult decisions.** Sub themes: a) Interface with community organizations; b) Planning for the pandemic; c) Redeployment; d) Ethical Decision Making
- **Theme 5: Communication.** Sub themes: a) General Public; b) Professional Community; c) Healthcare Workers
- **Theme 6: Supplies.** Sub themes: a) Disruption of normal supplies; b) Shortage of supplies; c) Collaborative sharing of supplies;

EXECUTIVE SUMMARY

For several years, the World Health Organization and other national and international health organizations have advised health care authorities in every country to be prepared for a pandemic outbreak of a new strain of influenza virus that is likely to occur in the near future. There is evidence that the current health care environment is already in a critical situation and the sustainability of many health care practitioners (HCPs) is at risk. [1, 2] An outbreak of pandemic influenza will result in higher levels of extreme stress for these professionals who are already overextended in their work. The research question guiding this study asks, what are the needs and concerns *that HCPs identify* as they anticipate working during a pandemic influenza? In order to answer this question we developed an information package on the predicted nature and consequences of a pandemic, as well as a format for our focus groups that allowed us to present this information, assess its impact on the research participants, and then lead them through a guided discussion. We ended the focus groups by presenting two stress management approaches (*BASICS* [3] *and HeartMath* [4]*)*. Presenting these at the end of the focus groups was useful both to elicit feedback on these approaches, and to provide participants with some means of reducing anxiety after their exposure to the detailed picture of this anticipated disaster. The information garnered through this project will be seminal to developing effective pre-incident education protocols and psychosocial interventions for HCPs in the face of a pandemic influenza.

We initially intended to recruit front-line staff from a number of program areas in the hospital; however, due to staff shortages, it was difficult to draw them into the study. Focus group participants were eventually recruited through invitations to some front-line staff as well as some mid-level administrators and operations or professional practice leaders who were responsible for front-line response in disaster situations. Participants from the following program areas joined in our focus groups: acute and residential care, occupational health and safety, human resources, scheduling, communications, and hospital and community physicians. Use of the State-Trait Anxiety Inventory

(STAI) before and immediately after the detailed pandemic information package indicated that anticipating the pandemic had a large effect on increasing participants' levels of anxiety. Transcripts of the focus group discussion were analyzed using a phenomenological analysis, and the credibility of the theme descriptions was established through member checking and expert review.

Our findings are in keeping with the current literature regarding the impact of disasters such as pandemic influenza on HCPs, and their subsequent needs for psychosocial support.[5, 6, 7, 8] The six themes listed in our main research findings relate to well recognized problems, including how to get HCPs to come in to work during a crisis where working itself poses a significant risk to personal health and safety. The findings suggest that many HCPs will sincerely want to come to work during a pandemic, and that healthcare organizations will be most successful in encouraging them to come to work by recognizing the competing need of HCPs to care for the safety and security of their own families. Other findings of this research are also important to take into consideration for planning a response to pandemic, such as recognizing the nature of the emotional impact on HCPs and the kinds of psychosocial supports they identify as useful in order to sustain them in the workplace during a disaster. The more practically oriented themes that focus on the crucial issues of communication and supplies are useful in understanding the basic concerns that arise for HCPs, that could well be addressed before a pandemic occurs, and so reduce the overall anxiety of HCPs through creating a sense of being prepared.

These research findings extend the current knowledge of the concerns of HCPs in responding to a pandemic in several ways. First, they provide an insight into the key differences between the First Wave and Respite periods of a pandemic that will need to be taken into account in the planning process. Second, the results provide a greater insight into the actions and qualities that HCPs desire from leaders in healthcare in order to work together in teams that in turn enable them to provide their best possible effort. These focus groups emphasized the need to trust in leadership and to feel included in a transparent and proactive planning process as crucial elements in their sense of loyalty and

commitment during a disaster. HCPs need to know that their individual efforts and their willingness to risk their own health and safety will be duly recognized, acknowledged and celebrated in meaningful ways.

An unexpected finding of this research was the positive impact experience by those who participated in the focus groups, *I actually feel more at ease at the end of this ... I think sometimes we all feel we're working in isolation and we're really not. When you bring people together at a table like this with diverse backgrounds—the creativity comes forward. ... I feel confident that we will get through [a pandemic]. We'll do it.* This finding has important implications for developing future training and orientation programs that work toward creating stronger relationships among team members and fostering greater trust in and loyalty towards the organization as a whole. It is our goal to incorporate this finding into a revised training program at Providence Health Care, and if possible, conduct research into the efficacy of a group-based training model that is run by experienced group facilitators. In this pilot project we also took the opportunity to introduce two psychosocial tools that we felt could help in sustaining HCPs during a pandemic (*see BASICS and HeartMath, Appendices 3 and 4 respectively*). Future research could incorporate the comments made in the focus groups to further develop BASICS, and perhaps generate stress-awareness posters that could elicit feedback from a greater number of HCPs at Providence Health Care. Positive responses to Heartmath also encourage further exploration of this approach to stress relief.

The goal of this pilot study was to help address the gap in planning that could result from a "top-down" approach to planning: the method of investigation was chosen to understand the phenomenon of the lived experience of HCP's as they anticipate the difficult front-line realities of working during a pandemic influenza. Further research is necessary in order to confirm these findings for a larger population of HCPs, and to develop and evaluate a training program that incorporates these findings. The immediate next steps for the members of this research team will be to incorporate these findings into the Pandemic Preparedness Plan at Providence Health Care, and disseminate the results

through exchanging information with other healthcare organizations and planning bodies, as well as through articles and presentations. We will also be developing future research plans and proposals based on the findings of this pilot project.

RESEARCH PROBLEM/CONTEXT

For several years, the World Health Organization and other national and international health organizations have advised health care authorities in every country to be prepared for a pandemic outbreak of a new strain of influenza virus that is likely to occur in the near future. There is evidence that the current health care environment has exacerbated what was already a critical situation in the health care sector and has placed the sustainability of HCPs and their families at even greater risk [1, 2] Nurses in Canada have almost double the rate of absenteeism and workloss due to illness as compared to the general labour force [9, 10] and recent research reports that up to 60% of physicians in Canada suffer from high levels of burnout.[11, 12] An outbreak of pandemic influenza will result in higher levels of extreme stress for these already overtaxed professionals.

While health care authorities and all levels of government are focusing their planning efforts on managing logistics of providing patient care, our research is intended to learn from HCPs what they believe will be important to their well being as they provide care for the population affected by a pandemic virus. Many groups recognize the importance of psychosocial supports for first responders, health care workers, physicians and others whose job it is to address the chaos and suffering that occurs during a disaster. A European Union Policy Paper[13] states that psychosocial interventions must be prepared in advance and effectively coordinated and structured throughout the different phases of a pandemic. While there are now some pandemic preparedness plans that include psychosocial support programs, [14, 15, 16, 17] it is generally unclear which features are essential to such programs and how these programs will be delivered.

The research question of this pilot project was the following: Given a vivid understanding of the conditions predicted to occur during a pandemic influenza, what is the lived experience of HCP's as they anticipate working during this situation, and what needs and concerns do they identify as critical to address in order to maintain their resilience at work during a pandemic influenza?

METHODOLOGY

DESIGN: This study was designed as a pilot study, intended to explore an area where there is little published research to date; namely, the experience of personal and professional stress for HCP's working during a pandemic influenza. We used a qualitative, phenomenological approach[18, 19, 20] adapted for use with focus groups, which allowed us to enhance our understanding of the needs and concerns of HCPs as they placed themselves in the anticipated context of working during a pandemic influenza. We included a quantitative component as an adjunct to the qualitative data, which entailed using the State-Trait Anxiety Inventory – state measure (STAI-s)[21] to measure the impact of the pandemic information package on the state anxiety levels of the focus group participants.

In phenomenological research the goal is to let the lived experience of a phenomenon speak for itself. This is particularly useful when the key dimensions of the phenomenon are not yet known, and individual experiences of the phenomenon can be used to guide the research into identifying the core themes or 'essences' of the experience that define its nature. A phenomenological approach was chosen for this study because of our intended emphasis on allowing the experiences of HCP's to speak for themselves. Our goal was to let HCP's identify what they see as the essential themes related to their work-related stresses and needs for support during a pandemic influenza. In order to achieve our goal we had to adapt the understanding of the phenomenon under investigation, because the experience of working during a pandemic influenza is not a 'lived experience' for most currently working HCP's. We therefore chose to present a detailed, hour long 'information package' at the start of each focus group, outlining the predicted nature and consequences of a pandemic influenza, thereby creating a

vivid, *anticipated*, lived experience, which was further elaborated as a phenomenon during our guided discussion.

The guided discussion was structured so as to address each of the predicted waves of the pandemic: First Wave, Respite, Second Wave, and Recovery. The discussion of each wave began with a brief scenario, i.e.: "Imagine that you have just heard news that the pandemic has begun to break out in the city, and you are scheduled to go into work.", and was guided thereafter by general questions that sought to elicit the HCP's anticipated experience regarding work, such as, "What are you aware of as you prepare to go to work with this knowledge? What concerns might occur for you in this situation? What do you anticipate you might need at such a time in order to sustain yourself at work?" In recognition of the vivid experience we intended to create for our focus group participants, we structured the focus group process carefully, including a group-building introductory exercise at the beginning to create safety, and introducing the two stress-management approaches (BASICS and Heartmath) to help reduce any remaining anxiety at the end of the focus group.

PARTICIPANTS: We ran into numerous difficulties in recruiting participants for our focus groups. The situation we encountered was that, while our study generated a great deal of interest, the number of front-line staff responding to our invitations was low. Staff shortages and high workload appeared to reduce the number of available participants. We came to see this situation as the first finding of our study, which was later confirmed repeatedly in the focus group transcripts. As one participant put it, *In actual fact, a lot of times we are in disaster mode [today], we just don't call it that. ... If we know today that we can't manage, then how are we going to plan for tomorrow?* This evidence of critically low staffing levels poses serious questions about the resources available to manage a prolonged disaster such as pandemic influenza. We were, however, eventually able to run eight focus groups over a space of seven months, from July 2006 to February 2007 with a total of 52 participants overall. The participants in our focus groups worked primarily in the area of acute care, with some representation

from residential care, as well as a number of Family Practice physicians. The majority of our participants worked either currently as front-line staff or had worked as front line staff prior to taking leadership positions. All of them had worked in the healthcare field for a minimum of three years.

DATA COLLECTION: The data collected from each focus group included the STAI-s measure, notes written in-session by the researchers, participant notes written on handout sheets provided for this purpose; and flip chart notes taken by one of the group facilitators during the guided discussion. The focus group guided discussions were also audio-recorded and transcribed.

DATA ANALYSIS

QUANTITATIVE ANALYSIS: The results of the STAI-state anxiety measures were calculated using "Cohen's d,"[22] a statistical measure of effect size, in order to assess the effect of the pandemic information package in terms of the change in state anxiety for the focus group participants. Cohen's d was calculated by subtracting the mean score for each focus group on the STAI-s before the pandemic information package, from the mean for the group after the information package and then dividing the result by the combined standard deviation of both groups. The values of Cohen's d for the eight focus groups ranged from 0.73 to 2.57, with the value of Cohen's d for all of the groups combined being 1.116.

The statistical calculation of Cohen's 'd' identifies a value for a small effect size as d = 0.2, a medium effect size as d = 0.5, and a large effect size as d = 0.8. The value of d = 1.116 for all of the focus groups combined clearly indicates a very large effect size; i.e., a large increase in anxiety as a result of the pandemic information package. This finding is important in that it indicates that care should be taken in delivering this information, and consideration should be given to providing opportunities for HCPs to process the information they receive concerning the predicted impact of

pandemic influenza and find ways to reduce the anxiety that may result. For more information on the STAI and the values of Cohen's 'd' for each of our focus groups, please see Appendix 2.

QUALITATIVE ANALYSIS: The audio recordings of the focus group guided discussions were transcribed and thematically analyzed using a phenomenological approach.[18, 19, 20] A full thematic analysis was conducted for each of the transcriptions. The thematic analysis of the transcripts was divided among the three principal co-researchers for the project, with one researcher analyzing six of the transcripts with the aid of MaxQDA, a qualitative analysis software package, while the other two co-researchers analyzed one transcript each. The three co-researchers kept their findings separate from one another, comparing their independently derived themes only once all of them had completed their initial analysis.

All three researchers used a phenomenological approach for identifying the relevant themes in the focus group transcripts. This approach utilized the following steps:

a. Separation of the original transcript into individual statements or meaning units.
b. Organization of these meaning units into larger groupings or 'clusters' that center on a core theme.
c. Comparison and incorporation of flip-chart notes and other relevant material gathered from the focus group discussion with the core themes generated through transcript analysis.
d. Development of a set of phenomenological descriptions of the essential themes expressed in the focus group transcript.

ESTABLISHING THE CREDIBILITY OF THE THEMES: The theme descriptions that were generated through the analysis of the focus group transcripts were validated through several methods. First, the independent analysis of 3 transcripts by the three researchers resulted in somewhat different but mutually confirmatory theme summaries. There were differences that arose simply from the

inherent differences in the content and detail of the three groups, however, the essential features of the themes, the main foci of the concerns and the needs of healthcare workers facing a pandemic were similar. The findings of the three independent analyses therefore provided a convergent form of credibility check.

Second, the theme summaries were adapted to arrive at a consistent format, and a process for contacting the focus group participants was initiated. The purpose was to have them review the theme summaries and use their comments to either confirm or modify the themes. A number of attempts were made to contact each of the focus group participants to have them engage in member checking of the theme descriptions in order to strengthen the credibility of the study. We were successful in contacting 21 participants, from six of the eight focus groups. The theme descriptions were endorsed by the majority of the focus group members who responded, providing support for the credibility of the findings.

Third, several leaders in healthcare who have particular expertise in the field of communicable disease control and community disaster response were asked to review the theme summaries from two of the focus groups. These experts evaluated whether the theme descriptions made sense and fit with their experience of the needs and concerns of healthcare workers in disaster situations. All three of the experts found our theme descriptions in keeping with their experience of the needs and concerns of HCP's in responding to a pandemic influenza. One expert wrote, *No surprises for me. ... All of the views that were documented have been heard before.* While another expert wrote, *In the general pandemic planning I've participated in ... many of these issues are being addressed, but the fact that staff carry this cross-section of concerns and potential psychological and emotional impact of these concerns, are not considered in the overall planning.* This expert credibility check was provided by Dr. Garey Mazowita, Chair of the Department of Family and Community Medicine at Providence Health Care, Shelagh Weatherill, Director of Communicable Disease Control at Vancouver Coastal

Health, and Heleen Sandvik, Provincial Coordinator of the Disaster Psychosocial Project, BC Ministry of Health, Emergency Management Branch.

RESEARCH FINDINGS

In analyzing the data of the focus groups, six themes emerged:

1. Relationship between work and home
2. Emotional impact
3. Psychosocial support
4. Leadership authority and difficult decisions
5. Communication
6. Supplies

Each of the themes will be presented with quotations presented in italics, followed by implications for practice and for future research.

Theme 1: Relationship between work and home.

No one is exempt from the potential impact/consequences of a pandemic. Members of all the focus groups spoke about the tension between staying home during the pandemic versus going to work. *You have to start to think, is my time committed to work vs. my time committed to my family?* Their desire to stay home was based on their love and care of family members, *I'm not going to come in, I know it's an emergency, but my family is more important* while their sense of responsibility to their professions had to do with a deep commitment to providing care to those who would be affected by the pandemic. *Health workers are drawn into health care because they want to help other people.* Participants were prepared to make a commitment to going to work provided family members were receiving the care they needed. *I would be totally willing to put my own life at risk, but I don't want to*

put my kid's life at risk…you have to be able to know that you're not putting your family at risk by being heroic and doing your job by going to the front line.

Professionalism and being mandated to work: Participants struggled with the notion of professionalism, being mandated to go to work, and flexibility. *I realize that people have obligations to their home life and such but at the same time when you elected to become a medical professional, you also accepted some of the risks that go along with it.* Participants had very strong feelings about this, *We can say, "the contract says you have to come to work. If you don't we're going to discipline you' and they'll say 'Screw you, I'm outta here, my family is still more important.* They made suggestions about a possible approach, *Try to draw people in by saying out of the goodness of your heart can you please come and work and not you are required to work." Give the staff the confidence that their families are safe and that you are going to try to do whatever you can to help them.*

Ethical dilemma of resource allocation: Concern for the well being of family members included the ethical dilemma of who would get vaccinated, *there are questions as to whether or not there will be enough vaccine* or receive anti-viral medications, *that would be probably the first thing that will be done—giving the anti-virals. But what happens if it is given to you but not your husband or your kids. How do you prioritize this kind of stuff?*

Increased shortage of health care providers: Health care workers recognized that there would be a prolonged period of time during which they would experience the tension between their work and their home. During that time the shortage of health care professionals able to come to work would increase as colleagues would be affected by the pandemic, not only with regard to their families but with regard to themselves as well. *How do we carry on if 30% of our workers are sick, and probably another 10% don't want to be at work because they are scared of either getting more sick or they are looking after their families?* From another participant, *we are over capacity, we don't have enough people to man the stations, so there does hit a point where we hit that wall resource wise. It's almost like we're*

trying to go up hill in fourth gear in the middle of an ice storm. You know we are going to start to slide backwards.

Morbidity and mortality: Concern about issues pertaining to mortality was also present, *once we get into this you're going to have a lot of dead people and very upset families and a lot of these people are young people…they are not going to be dying in hospital.*

IMPLICATIONS FOR PRACTICE: As the effects of the pandemic will be evident throughout our communities, the implications for practice are best considered in the context of a 'workplace without walls.' Individuals will be affected locally and will also bear the consequences of family members and friends who are sick and may be dying in other parts of the province, country and world. In this context participants were articulate about wanting to come to work and to be certain that their family members would receive the care they needed. They were very interested in working with authorities in developing plans that would be flexible, inclusive and collaborative as opposed to authoritative and punitive. Every group expressed a preference of home/work issues to be regarded as both/and rather than either/or. It was their sense that it would be a both/and approach that would result in an environment of the highest degree of trust and therefore bring optimal numbers of health care providers into the work place.

Theme 2: Emotional impact

A pandemic influenza will be an extremely difficult emotional experience for HCPs. A number of emotional consequences and dynamics were identified as likely to occur during a pandemic. *When I think of the first wave I think of drowning - thrashing around when you are under water and you don't know what is going on and you know it is not good, but when you get up and take a gulp of air and you look around ... there is no boat.* The emotional dynamics will differ in each of the waves of the pandemic. According to the participants, a pandemic influenza will result in the following emotional experiences:

Fear: In various ways the focus groups expressed a fear of being exposed to this unknown and unpredictable disease through their work, and a fear of its impact on their lives at home. In particular, they expressed a fear of being personally infected and of infecting others, especially family members and colleagues. A fear was also expressed concerning the level of social unrest or *mass hysteria* and possible violence being directed at healthcare workers by an angry and demanding public.

Overwhelmed: Physical, emotional and mental exhaustion was anticipated as characterizing healthcare workers during a pandemic. *You are tired now…. It is going to be double and you still have things to do at home, so your stress level is going to go way up.* They also anticipated that the anxiety of healthcare workers will be heightened due to working in such a chaotic and uncertain situation, and being surrounded by extreme levels of illness and death. Several groups referred to the idea of a *double workload,* which meant several things, including working twice as much and twice as hard as normal, and being 'on duty' both at work and at home or in the community.

Moral Distress: All of the focus groups expressed concern about the emotional impact of making difficult ethical decisions during the pandemic. The groups clearly identified that there would be inadequate resources to care for patients in many areas, and that decisions would constantly need to be made about how these limited resources would be distributed. There was also concern about the ethical implications of quarantine, and the possibility of separating patients from families in the moment of greatest need. A sense of moral distress was also expressed concerning the dilemma of conflicting desires – the difficult internal conflict between the desire to go to work, and the desire to stay home to take care of family.

Grief, Guilt and Anger: Common themes of grief, guilt and anger came up consistently in the focus groups. Grief for healthcare workers due to the personal loss of friends and family compounded by the feeling of not being present for these significant losses because of being at work. Grief may also arise because of witnessing the deaths of many patients and colleagues at work. The competing demands of work and home might appear impossible to fulfill for HCPs, while attending to their own needs at

work by taking breaks, etc., could result in feelings of letting colleagues and patients down. Both of these experiences could evoke strong feelings of guilt. Survivor guilt was also mentioned in a number of groups, and was linked in one group to the priority accorded healthcare workers in receiving protection through anti-virals and vaccination. Anger was mentioned in a number of contexts, ranging from anger at leadership if planning proved to be inadequate, anger at the impossible demands of the situation and the expectations of the public, to anger at those colleagues who choose not to come in to work.

First Wave versus Respite: Several groups noted that there will be a difference in the nature of the emotional impact between the first wave and the respite period. *Life is going to be different, even if we are healthy. The world has changed.* The respite period will be different because it will allow HCPs to reflect. *Somehow I think it will be a time of mourning, because during the first wave we might not have the opportunity to do that.* As one participant put it, *During the first wave you're kind of on autopilot, and you're just doing what you have to do. If that means working 20 hrs a day, and watching family and friends die, okay – you just keep moving. But then you have the downtime, and you think, I can't do this again… Your inner morale just disappears.*

IMPLICATIONS FOR PRACTICE: The implications for practice resulting from this theme include emphasizing the safety of staff and their families, and communicating with staff about how safety will be promoted in the workplace. If healthcare workers see their organization as working to keep them and their families safe during a pandemic, it will reduce their sense of fear and anxiety. It will be important to identify and familiarize staff with the psychosocial supports that will be in place. One key implication for future practice and research lies in the distinction between the first wave of the pandemic and the respite period. The interventions that are appropriate to the more reflective Respite Period are not the same as those for the acute and task-focused First Wave, and vice versa. For example, interventions that address grief and loss, survivor guilt and residual anger will be especially important during the respite period, while efforts to mitigate HCP's sense of being overwhelmed and

help them to manage their fear of infection will be important during the acute first and second waves of the pandemic.

Theme 3: Psychosocial support

There was a great deal of discussion concerning what forms of support could benefit HCPs most in terms of sustaining them at work, managing the stresses of work and home, and dealing with the difficult emotions mentioned in theme 2. The responses fell into three general areas.

Support from leadership: The qualities of leadership identified as being most supportive and helpful for the morale of staff were trust, honesty, transparency and flexibility. Leaders who could lead by example with these qualities would be able to inspire resilience and morale in these healthcare workers. The role of leadership in planning ahead for the pandemic was identified as very important; however, it became clear that *how* this planning was done was key in providing a sense of support and preparedness for healthcare workers. HCPs want to know about, and be included in, the process of planning. Transparency in planning, and creating avenues for feedback from staff, were deemed to be important in fostering a sense of trust and credibility. *We need the communication, we need to know that there is a plan in place, and we need not to be forgotten.* Working to create realistic expectations of the healthcare response to pandemic influenza was identified as another key role for leadership, both in terms of the public's expectations of the healthcare system, and healthcare providers' expectations for themselves. *The message needs to get out to the public*, - 'w*hat can be expected of us realistically*?' – *And the same thing for the staff, right?* The physical presence of leaders on the front lines is essential to the sense of emotional support of staff, *the top people have to show their faces and take their share in some of the scunge work.* Emphasis was placed on leadership's recognition and appreciation of staff's efforts. *The people need to be thanked verbally by their leaders.* Leaders also need support, *If you're the leader leading this and you're still well … you are tired. So you need acknowledgement – not only for the staff, but also the leadership team as well.*

Organizational Support: Practical support was often seen as equivalent to emotional support for HCPs. These 'practical' issues included enhancing the safety of HCPs at work and in going to and from work (*staff need to feel safe coming to work … you need to have things in place for people so that they can safely enter the building and be in the building, working)*; clarifying payment and benefits procedures; and establishing respite areas for healthcare workers that could provide various supports such as supplying food and drinks, opportunities for communicating with family, beds to rest or sleep on, stress management supports, and opportunities for individual or group interventions. *A real concern for me and other health care workers is wondering if you are at work, how is your family doing, or are you going to get to see your family? What if they are getting sick while you're not there?* That there be some form of support for emotional debriefing of staff came up in almost all of the focus groups. W*e are talking about a lot of death here … I think there has to be some kind of support.*

Some groups identified the importance of having a chance to defuse emotional experiences on site, in an immediate or spontaneous way, *listening to the fears that they have at the time they have them and … not having to wait four or five hours.* Another whole range of comments concerned the importance of organizational support for ensuring the safety of families and for maintaining the connection between staff and their families, including providing daycare facilities, temporary housing to allow families to be close by, and options for communicating with family. *A real concern for me and other health care workers is wondering if you are at work, how is your family doing, or are you going to get to see your family? What if they are getting sick while you're not there?*

Interpersonal or Team Support: Support between colleagues, or support within the working team is important, *It is facing something that you are all facing together, and there is an unwritten support…we are here together and we're not just caring for patients but also for each other.* Being part of a team helps HCPs define their roles during a crisis, and get a sense of motivation by being part of a larger effort. *You want to feel that you are a member of a family and you are part of a bigger*

project. Being part of a team helps staff look after each other by keeping them involved with and observant of each other. *The biggest thing is we need to support one another through this experience.*

Respite: A number of comments were made regarding the different nature of support needed during the respite period. Some comments indicated that the respite period would provide an opportunity to evaluate the supports given in the first wave. *I would be thinking whether I was supported as an employee or not - how well, say, the organization looked after my needs - to decide if I'm going to be coming around for the second wave.* The focus groups identified that an important form of support during the respite period would be to address issues related to the death of colleagues. Several groups suggested that organized ceremonies needed to be put on by the institution, and the city, that would honour the healthcare workers who had died. Another aspect of 'practical support' that was mentioned in connection to the respite period was the importance of bringing healthcare workers together for 'operational debriefs' or 'lessons learned.' Having an opportunity to provide feedback and be part of a process of learning from difficult experiences was identified as very important to these healthcare workers as part of making sense out of what they had gone through.

IMPLICATIONS FOR PRACTICE: Some of the practice implications suggested by this theme include creating greater transparency and inclusion in the process of planning for disasters, providing a leadership training that emphasizes the need for leaders to be aware of their own needs during a crisis as well as those of their staff and the organization. Leadership training could also build upon the skills of leaders in providing emotional support by identifying skills and tools to a) recognize distress in their staff members, b) validate emotional responses, and c) refer distressed staff to identified resources for psychological support. Establishing and training leaders in approaches to staffing difficulties, especially regarding the conflict between work and home, would help to reduce the anxiety of all staff by establishing clear and consistent guidelines. Preparing staff ahead of time for the physical, mental and emotional consequences of a pandemic may well reduce some of their impact. A pre-incident training and orientation program that prepares staff for the prolonged nature of a pandemic, the

possibility of emotional and physical fatigue, and the plans and supports that will be in place to help sustain them will give healthcare workers a greater sense of being prepared, knowing their role, and having realistic expectations. Another implication of these findings is that the first wave and respite periods require different forms of support.

Theme 4: Leadership/authority and difficult decisions

People who participated in the focus groups expressed their need for leadership in planning for a pandemic, in developing protocols and in implementing the plan during the pandemic.

Interface with community organizations: Public health organizations, community services and health care facilities will necessarily be involved in organizing and providing services to those who are affected by the pandemic. *It's more than the health system, its that whole social* [component]-*the Municipal Government, the Municipal Services, including the police, the RCMP and all of the others that have to be brought into it.* There was a sense of urgency with regard to pre-pandemic planning, *I agree with the idea of having a set of guidelines already in place that people can have in their offices. As well, you can have interim equipment in place before hand (e.g. protective masks). If that's already in place there won't be so much of a struggle or panic to get all this equipment organized when things happen.*

Planning for the pandemic: Participants felt strongly that people in authority take a leadership role in developing a plan for a pandemic as soon as possible and hopefully well in advance of an actual pandemic. *We need strong leadership. And we need some leads from our Senior Leadership. We need to know that Senior Leadership has a role and what their roles are and that they are here.* They want leaders who *lead by example* and leaders who could say, *as an employer we're taking the steps to keep our staff as safe as possible, so I am here putting myself in the situation.* Those features would ensure a greater likelihood of people coming to work during a pandemic. People stated that a plan

initiated and designed by appropriate authorities in collaboration with front line health care providers would serve to diminish anxiety.

Redeployment: That people would likely be reassigned to areas of service that might be new was well understood in the focus groups. *What should be designed right now is like an essential services plan much like we would get when preparing for a strike, just to know where we would all be going if something like this was to happen.* There were questions about redeployment, *if you are going to re-deploy non-contract staff what sort of functions will they do? And you may be redeploying contract staff too.* There was also a recognition that the pandemic would truly have a global effect, *it's going to be happening globally so I am thinking of redeployment of staff globally, say in Australia they are just coming to the end of their two month wave and we are just gearing up to go into our worst, so maybe globally we bring in nurses from Australia and help spell each other around the globe, if it is hitting different places at different times.* Working in jobs other than their usual work would mean people would need support. *I think there has to be some kind of support for them. If this is prolonged it can become pretty depressing.*

Ethical Decision Making: A question at the core of a pandemic, *what can we do that is going to sustain and to help the most people survive the epidemic? What about the ethical issues for doctors and nurses, where Mrs. Jones gets the ventilator and Mr. Smith doesn't because of whatever factors (age, general health, whatever) determine who gets it. We have all these lofty aspirations but when the rubber hits the road we have to make tough decisions.* Ethical decisions will not only be made with regard to caring for people with influenza. These decisions will pertain to triage and general allocation of resources. *I can certainly see from our end of things that there would even be a rationing of care, and you know, say people at work who were prescribed dialysis three times a week would get it once or twice a week.* There is a need for *a strategic plan for the length of this pandemic. You know, someone has got an arthritic knee and needs that done, well that might not happen, you know. Transplants, kidney transplants might not happen you know.*

IMPLICATIONS FOR PRACTICE: We are unable to predict the unknown. Surprises will occur. Proactively creating and developing a plan that incorporates a process to address surprise, the unknown and uncertainty would serve to diminish features of anxiety, anger, blaming and shaming that can be present in providing health care. To include staff in the planning process is an investment in the future with regard to decreasing the anxiety people experience in relation to pandemic issues and to people coming to work during the pandemic. It is important to build capacity now with regard to guidelines for services pertaining to pandemic and non pandemic health needs, equipment, an ethical decision making process, cross training, body disposal, limitations to delivery of health services, and dealing with the consequences of established guidelines.

Theme 5: Communication

Preparation and communication prior to a pandemic influenza outbreak is important. *If we're really prepared ahead of time and have thought through some of the things that might happen what we would do in that particular situation…discussed it with others, then I think that would go a long way towards being able to cope.*

In terms of the delivery and quality of communication, participants emphasized the need for timely, clear and current information prior to and during an outbreak. This communication needs to be delivered in a consistent, honest, accurate and effective manner in order to establish credibility: *Accurate information at every level…because otherwise you could have the whole thing kind of breaking down and you are going to panic even more*; foster trust: *I'd feel so used if they didn't tell me the truth just to keep me working*; and establish realistic expectations: *saying that it's 'business as usual' when it's not – for a lot of people that leads to false expectations and that puts us in a position of potentially failing people's needs*. Different target populations were identified: the general public, the professional community, and the Health Care Professional (HCP).

General Public: Dissemination of information in a non-technical language to the general population (changes in service delivery, ethical decisions reflecting society as a whole, virus status, quarantine, information on infection control measures etc). *Prepare an at home kit- home care package and family care package* A multi-language and multi-media approach was thought to be important in terms of respecting diversity and the needs of special populations. *The reality is a lot of these people are not English native speakers; to have a web site to get information so people would keep up to date as people like to feel informed and know what to do.* Each health care facility should communicate directly with admitted patients and their families on matters specific to the site (acute/residential care). Concerns were expressed about the potential impact (scapegoating, anger, hysteria, violence) of unrealistic expectations of the health care system and the limited opportunity to deliver usual services. *A possibility of a lot of anger being directed at health care people because if a lot of things don't go right, a lot of people are going to be saying, you guys didn't do this, you didn't do that and, you know, overpaid bunch of good for nothings and that kind of stuff; because obviously everything is not going to come out perfect and if they've had people that didn't make it in hospital that really creates anger and if they know you work for a hospital they'll dump it all on you.* Conversations regarding these matters and the process of ethical decision-making with community input should occur prior to the outbreak, *that decision should not be ours alone but reflect society as a whole.*

Professional Community: The preparatory interface with the professional community was considered to be important (local community resources such as first responders, primary care physicians, public health care systems, and municipal and provincial governments). Again emphasis was placed on credible, realistic and reliable information. *Do we really believe what the politicians and the people in authority are saying… and what's coming out in the media?* Many HCP's referred to experience or lessons learned from SARS, Norwalk, HIV/AIDS. It was suggested that the PHC SARS clinic experience could provide some insights into planning for Pandemic Influenza, *Because we had all the communities coming together.* The need for a collaborative approach to ensure more seamless service

between primary care and hospital care was raised. *One of the things that concerns me is that there has been very small liaison between primary care practices and the hospital, it really has to work together; In a pandemic situation family physicians are primary care providers and we get people phoning us for the initial point of care.* HCP's and physicians discussed the need to explore the reconfiguration of service delivery using terms such as *one center*, *contained environment,* and *mobile assessment unit.*

Health Care Practitioners: Considerable attention was given to the need for trustworthy, reliable, current and honest communication with staff. *I think that part of trust in that information comes from within the organization before people are hearing it in the media and on the street; Staff, they want to know the goods, they want to know that you are not just trying to make them feel better; Clarify the pathogenicity of a mode of transmission for this particular illness and what staff can do to protect themselves and their families.*

This would include the need for the following:

- updated information: *The pre-information and the early days are going to be one thing but, you know, once people start dying it is going to be different; the information changed every day, there were updates…continually changing, you just kept on top of it* (the latter quote pertains to participants experience with PHC SARS facility)
- safety huddles: *Little huddles…It doesn't have to be a long time, if you have an issue just bring it up or I will just update you with what's happening*
- evolving changes: *I think that people will be assessing their situation day by day because it really depends on what is happening in your whole environment; work and home.*
- changes to or integration of service delivery systems: *Because we don't want resources being wasted on testing that's not going to be done and how are we going to communicate that to the*

different care areas? what are we dealing with- how will this impact our day to day operations and can we do business as usual or will business as usual be suspended?

- expectations of staff regarding workload / redeployment: *I think that needs a lot of conversations about redeployment, what does it look like, what can we do; So what is the Union collaboration, the inter-hospital collaboration and do we take that further and ask what is the health Authority collaboration. This has got to be Provincial, it's also community and staff resources. Will there be a sharing of resources?*

The opportunity to maintain a "feedback loop" on an ongoing basis was stressed. *Are they really telling me the truth…I mean they were given very good medical information but at the same time there was little time to listen to what their fears were… they didn't feel their fears were listened to, and it worked on them and it overruled what they were hearing* (related to participant's experience during unknown infection source). The latter would take into consideration a recognition of HCP's concerns, assessment and acknowledgement of the efforts/impact of their work. *Yeah, even for co-workers to remember to tell each other, You're doing a good job or acknowledge that it's difficult whatever they've just gone through; not just co-workers, but I think that should be from the top down; hey, the employer really cares, they're making sure that we are safe and people won't fear to come whereas in the beginning it was like nobody wanted to go there* (related to participant's PHC experience with SARS).

Finally, arrangements for staff to communicate with families during shifts was considered very important, *this whole period they'll be living with stress and so will you.*

IMPLICATIONS FOR PRACTICE: The strongest implication for practice with regard to this theme pertains to the need for honest, consistent and reliable information. The need is not only for the content of the communication to be consistent and reliable, but also that the delivery of the information be trustworthy, honest and evolving. That is, the way in which critical information is delivered during a

pandemic will influence the trust that HCPs place in that information. These HCPs indicated that trustworthy information, even when it indicates uncertainty or bad news, is essential to their sense of confidence and willing participation in the overall effort of healthcare to manage the crisis. How such information is delivered will need to be carefully considered, so that it can provide a sense of transparency and inspire trust, while also emphasizing the importance of HCPs' efforts and the hope of managing through the crisis as successfully as possible. The information communicated to HCPs will need to be comprehensive, including changes that are occurring with regard to the virus, its impact, and the services that are needed and available for those affected by the virus. Conflicting expectations and information must be addressed. Acknowledging a "knowledge vacuum"[20] that provides for informational and emotional feedback may be essential to the perception of honest, transparent and reliable information.

Theme 6: Supplies

Maintaining and managing the supply of critical resources during a pandemic influenza outbreak is important to HCPs. The requirement of planning and preparation prior to the outbreak was emphasized especially in view of the anticipated shortage of supplies, potential competition and/or hoarding of vital supplies and the potential delivery problem given the likelihood of changes to the transportation/manufacturing infrastructure that may occur. *Because that border will close faster than anything, and we've already seen how quickly they'll shut that border down.* The topic of supplies was related to the ability to do one's job, to the safety of patients and to the safety of staff and their families. The preventive and intervention needs pertaining to supplies were related to the three main concerns common to the groups: disruption of normal supplies, shortages of supplies and collaborative sharing of supplies.

Disruption of normal supplies: It was expected that the disruption in the larger infrastructure would create major problems for individual hospitals as well as for the interface between hospitals and

community. Supplies were defined as medical (masks, gloves, ventilators, dialysis and I/V fluids etc) and personal (food, water, electricity etc). Back up plans for the infrastructure necessary to manage key supplies within the institution and the community should be in place, and several pathways to access supplies should be created especially as suppliers may become ill or refuse usual work duties. *If I lost 30-40% of my staff there is no way we could keep up with the demands for equipment; I'm the only one for eleven departments and so if the scenario is that I'm not here then who's going to tally where all the supplies are, that's pretty scary when you think about it!*

Planning for the potential disruption of international flow of supplies and it's impact must also be anticipated. *I think this is where government also needs to be part of the process, the infrastructure in the city and in the country itself.*

Shortages of supplies: HCP's noted a current degree of difficulty of getting extra supplies during "normal" times, *We already have problems with…supplies,* and raised the question of fast access during a pandemic. *Okay, so now the folks we use for our supplies, 50% of their staff are sick, all the hospitals are scurrying for supplies.* The need to review increased storage areas for supplies at the present time was emphasized. *You almost wonder what's the point of having a plan if we don't have the funding, the resources to make the plan happen.*

Collaborative sharing of supplies: Given the expected disruption and shortage of supplies, protocols concerning ethical decision making for critical supplies need to be made ahead of time and stated as policy so that individual staff are not making decisions or holding the ethical responsibility on their own. There should be discussion about the need to prepare for rationing. *The fact that we won't have enough to go around. Who really gets what?* Protocols that ensure fair collaboration for having supplies within the hospital system, between hospitals and with community services were noted as essential planning elements. *Even if we have an ethical framework or some principal that looks quite logical, how things are being allocated so staff will understand.*

IMPLICATIONS FOR PRACTICE: Health care providers have a strong task focus as part of their sense of professional practice in the workplace. In order to be effective and feel safe in the workplace, they require specific supplies, and the provision of these supplies is associated with a reduction in emotional distress. Plans of purchase, storage and equitable/ethical distribution are important. The perception of equitable sharing of supplies is essential. Protocols and opportunities for innovative approaches will be necessary.

DISCUSSION

One of the strongest themes emerging from this research is that HCPs already feel 'stretched to their limit' under current, 'normal' conditions, a finding that has been confirmed in other research studies.[5, 25] This means that there are severe limitations to surge capacity in today's healthcare system, a feature that could undermine the ability of health care organizations to manage disaster situations such as a pandemic influenza. Multiple factors may be implicated in the current situation, and while there is an urgency to address these factors, it may be difficult to change them in the near future. For that reason it will be increasingly important to have the ability to provide psychosocial support that enhances the efficacy of an overall disaster response. This pilot research project has clearly identified several critical themes in regard to providing psychosocial support for HCPs during a pandemic influenza. The six themes identified through this research, 1) Relationship between work and home, 2) Emotional impact, 3) Psychosocial support, 4) Leadership, authority and difficult decisions, 5) Communication, and 6) Supplies, indicate that, in the context of an overall healthcare response during such a crisis, the provision of psychosocial support will be a determining factor in the commitment, resilience and efficacy of HCPs.

The themes reflect the concerns of the HCPs who took part in our focus groups, which included professionals who work in both institutional and community settings (community physicians). The results of our research are in agreement with a number of other recent studies,[5, 6] indicating that HCPs feel a distinct obligation to respond during times of crisis, and that, for the most part, they accept this

obligation as part of their professional role. However, in order for HCPs to retain their commitment to their professional obligation when it conflicts with personal or family safety, an additional element is needed; namely, an acknowledgement of the reciprocal relationship between HCPs and their employers, or in the case of professionals in the community, the reciprocal relationships they have with the healthcare system as a whole. According to this study, this is the essential ingredient of a psychosocially supportive work environment. The needs of individual staff and community practitioners must be balanced with the organizational needs of the healthcare system in order to provide a sustained and resilient response to pandemic influenza. It is imperative that the professional and personal concerns of HCPs are taken seriously, and that they truly have that experience in the workplace. It is essential that their personal integrity and autonomy be respected and balanced in relation to organizational demands in times of crisis. Respecting personal autonomy in this situation means acknowledging the individual perspectives of HCPs and their corresponding right to self-determination, even within the context of a disaster situation when incident command measures such as HEICS III [26] may require some limitations on that right. A sincere reciprocal relationship between HCPs and leadership requires flexibility on all parts, e.g., under certain conditions staff may need to be released from professional duties in order to attend to personal issues, such as the safety and well-being of their own families and/or significant others. It is important to be aware that staff without families may have personal issues to tend to that are equally important to them, and that caution is needed not to overwork staff who do not identify personal needs that would otherwise balance their time at work. Psychosocial supports that work toward a reciprocal relationship can foster ongoing commitment from HCPs and their leadership by providing key elements such as: an atmosphere of mutual trust and support, an environment where the safety of HCPs and their families and/or significant others is a priority, and a culture of recognition where the efforts and sacrifices made by front line workers and administrative staff are acknowledged.

The theme of balancing such individual and systemic needs was recently addressed in the World Health Organization's paper *Ethical Considerations in Developing a Public Health Response to Pandemic Influenza:*

> The moral obligation to work during an influenza pandemic is not unlimited. Judgments about the scope of any particular worker's moral obligations must take into account factors such as the urgency of the need for that individual's services and the difficulty of replacing him or her, the risks to the worker and indirectly to his or her family, the existence of competing moral obligations, such as family care-giving responsibilities, and his or her duties to care for other (present and future) patients. … Policies outlining healthcare worker's obligations should be developed by or in consultation with those who will be directly affected by these policies.[26]

In a similar vein, the Worker's Compensation Act states that employers have the duty to ensure the health and safety of their workers, and that workers have a corresponding right to refuse work that they have a reasonable cause to believe is unsafe[24]. The legal ramifications of attempting to mandate staff to work during a pandemic are not clear. Working with HCPs to identify and address concerns in order to encourage them to report to work voluntarily, might therefore circumvent the conflict that could arise from this issue, and simultaneously support resilience on many levels. The essential quality of a psychosocial perspective is to recognize that individuals will be balancing a range of personal choices, responsibilities and emotional responses in addition to their professional obligations. Without this recognition, mistrust and resentment may increase toward government and healthcare administrators who may be seen as taking advantage of front-line HCPs during the different waves of the disease outbreak. This study provides a strong indication, however, that *with* sincere psychosocial supports that acknowledge personal efforts, sacrifices and emotional impacts, HCPs are likely to provide service far beyond the call of duty even in very uncertain and personally dangerous situations.

The themes that have emerged through this study also indicate that psychosocial supports can take many forms. Key practical resources can have strong psychosocial impacts. For example, professional resource allocation (such as job site supplies) and personal resource services (such as family day care) can have a profound impact on HCP's sense of being supported in their work.

However, one of the strongest implications of this research is that while the provision of specific resources is important, *how* these supports are developed and delivered is equally, if not more, important. In terms of providing daycare services, for instance, our study identified that HCPs would greatly benefit from having a forum where they could address concerns regarding issues such as the staffing and safety of the facility, the ability to communicate with children, and the flexibility of parent's access to the daycare. In terms of resource allocation, our study identified that the distribution of supplies, personal protective gear, etc., must be seen to be equitable at all levels within the hospital, between hospitals, and in the community.

The "how" of psychosocial support speaks to the quality of the relationship between HCPs and their leadership at all levels. A supportive, reciprocal relationship needs to emphasize issues such as transparent and credible communication, sincere acknowledgement of the emotional costs of caring during a disaster, validation and support for the emotional impact of grief and loss, and recognition of the impact of professional dilemmas such as ethical decision-making and redeployment. According to our research the single most important quality that leaders can provide in creating a supportive relationship with HCPs during a pandemic is being visibly engaged and present in the disaster work itself. When their leaders are present HCPs have a sense that their experience is understood, and that provides a foundation for believing that their concerns and their feedback will be listened to and taken into account. Amaratunga et al., in their 2008 article, *Caring For Nurses in Public Health Emergencies*,[5] noted that the credibility of leadership is a key ingredient in supporting the morale and resilience of HCPs during a crisis, and requires "not just being present, but being visible, accessible and willing to work face to face with staff." Similar findings regarding the importance of the honesty and visibility of leadership have also been reported in other research.[5, 6, 7] In terms of communicating with, and incorporating feedback from HCPs during a crisis, Amaratunga et al., noted that "communications need to be bi-directional between management and front-line first responders." Retrospectively, the SARS Commission Report[20] also identified that a key component of the effective

crisis response to SARS at Vancouver General Hospital was that decision-making during the crisis incorporated feedback from front-line workers: "An integral component of Vancouver General's safety culture is listening to nurses." These findings of other research efforts support our emphasis on the reciprocal relationship between HCPs and the organizations for or with which they work, and indicate a conclusion that is in concert with our own; namely, that HCPs' willingness to report for work, as well as the efficacy of their efforts during a crisis, will be enhanced if they feel they are part of an overall disaster response in which they are also valued and respected as individuals.

IMPLICATIONS FOR FUTURE RESEARCH

- The HCP's in our research clearly indicated the importance of preparation ahead of time and the benefit in their inclusion in this pre-planning, or at least their awareness of planning activities in advance of the disaster itself. Useful and relevant research into the efficacy of current on-line preparation programs versus a training program for pandemic preparedness that includes online information, group process, and table-top exercises. This format for a training program was implicated by an unexpected finding of our research that indicated the focus groups themselves enhanced mutual support between and among participants, and also created a sense of inclusion and collaborative team building. A review of the web-based pandemic preparedness plan at PHC indicated that it had only received 98 visits between December 2006 and August 2007.
- Research into the best practices for psychosocial interventions related to the prolonged nature and different waves of a pandemic influenza outbreak. This would include an examination of what interventions are best delivered when and by whom.
- Development and evaluation of a collaborative planning and communication model focused on the interface between 1) the professional healthcare community and the hospital institutions and 2) hospital sites and their local communities. Exploration of the role of community / family physicians as part of the professional health care community would be a critical component of this model.

- An in-depth review of the experiences of the PHC staff involved in the planning and staffing of the SARS clinic situated on the St. Vincent's – Heather site, in order to enhance the 'lessons learned' in the SARS 2007 Final Report.
- A retrospective study exploring the nature of sick leave for PHC staff delivering care of patients during time-limited disease outbreaks such as SARS, Norwalk, and Pneumococcal disease. Given the results of recent research[28, 29] that indicates many health problems (physical illness or injury and psychological problems) can arise immediately after a disaster and can persist for many years.

POLICY AND PREVENTION

Some of the policy and prevention implications arising from this research include:

- Policy that addresses the difficult staffing situation during a pandemic influenza outbreak needs to include guiding principles at the institutional level regarding 'report to work' issues: sick leave, legitimate leaves of absence, benefits, overtime tracking and workplace flexibility in the day-to-day operations of hospital units. Clarifying the unique roles of independent health care providers, i.e., family physicians in the community, and identifying the particular challenges they face in the potential reconfiguration of their service delivery model during pandemic, also needs to be addressed through guiding principles at a healthcare administrative level. This should include the exploration of local, provincial, national and international (global) discussions on ethical issues related to staffing during a disaster and result in a Canadian standard for all healthcare workers (professionals and contracted staff) in both the private and public healthcare delivery system during a pandemic influenza outbreak.
- The process of planning policies in preparation for a pandemic influenza outbreak should include the input from front-line staff. The benefits of front-line inclusion in day-to-day planning during the SARS outbreak were cited in the SARS 2007 Final Report. The interest that was expressed by the participants of our focus groups would suggest that their input into the planning process would

also result in enhanced day-to-day operations during an outbreak, as well as contributing to a heightened sense of trust, commitment and support.

- A psychosocial plan should be incorporated into all pandemic influenza emergency preparedness plans. (Note the work in progress: *Pandemic Influenza BC Psychosocial Support Plan for Healthcare Providers and Other Responders*)
- Policies and procedures for a pandemic influenza outbreak should include a coordinated and collaborative plan among primary care physicians, community health centers and healthcare institutions in order to provide a streamlined and effective response to patient care.

RELEVANT USER GROUPS

- Emergency Preparedness Department: Providence Health Care.
- Provincial Pandemic Influenza Psychosocial Task Group
- Disaster Stress and Trauma Support Services Provincial Council
- Providence Health Care Cumulative and Critical Incident Stress Management and Centre for Practitioner Renewal

POLICY RELATED INTERACTIONS

- We will provide the psychosocial response plan for employees of Providence Health Care as part of the Emergency Preparedness Plan for Pandemic Influenza.
- We will provide ongoing consultation to the Provincial Pandemic Influenza Psychosocial Task Group.

DISSEMINATION / KNOWLEDGE TRANSFER

The following individuals and groups have expressed interest in the results of this pilot research project:

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REFERENCES

1) Firth-Cozens, J., & Payne, R. L. (Eds.). (1999). *Stress management in health professionals: Psychological and organizational causes and interventions.* New York: John Wiley & Sons.

2) Sotile, W. M., & Sotile, M. O. (2002). *The resilient physician: Effective emotional management for doctors and their medical organizations.* Chicago, IL: American Medical Association.

3) Whitehead, P. & MacNutt, L., (unpublished document). *BASICS: A stress self-awareness and management guide.* Adapted from Lazarus, A. A., (1976). *Multimodal behaviour therapy.* New York: Springer, and Slaikeu, K. A., (1990). *Crisis intervention: A handbook for practice and research, 2nd Ed.* Needham Heights, MA: Allyn and Bacon.

4) Childre, D., Martin, H., Beech, D. (1999). *The heartmath solution*. New York: Harper Collins.

5) Amaratunga, C., Carter, M., O'Sullivan, T., Thille, P., Phillips, K., Saunders, R. (2008). Caring for nurses in public health emergencies: Enhancing Capacity for gender-based support mechanisms in emergency preparedness planning. Ottawa, ON: Canadian Policy Research Networks Inc.

6) Balicer, R. D., Omer, S. B., Barnett, D. J., Everly, G. S. Jr., (2006). Local public health workers' perceptions toward responding to an influenza pandemic. *BMC Public Health. 2006, 6:99*.

7) O'Sullivan, T. L., Amaratunga, C. A., Hardt, J., Dow, D., Phillips, K. P., Corneil, W. (2007). Are we ready? Evidence of support mechanisms for Canadian healthcare workers in multi-jurisdictional emergency planning. *Canadian Journal of Public Health.* Vol. 98, No. 5, 358-363.

8) Robertson, E, Hershenfield, K, Grace, S. L., Stewart, D. E. (2004). Psychosocial effects of being quarantined following exposure to SARS: A qualitative study of Toronto health care workers. *Canadian Journal of Psychiatry*. 49: 403 – 407.

9) Advisory Committee on Health Human Resources (2000b). *The Canadian nursing advisory committee.* Ottawa, ON: Author.

10) Bourbonnais, R., & Mondor, M. (2001). Job strain and sickness absence among nurses in the province of Quebec. *American Journal of Industrial Medicine.* 39(2): 194-202.

11) Shanafelt, T.D., Sloan, J.A. & Habermann, T.M. (2003). The well-being of physicians. *The American Journal of Medicine.* 114: 513-519.

12) Goldberg, R., Boss, R.W., Chan, L., Goldberg, J., Mallon, W.K., Moradzadeh, D., Goodman, E.A., & McConkie, M.L. (1996). Burnout and its correlates in ER physicians: Four years experience with a wellness booth. *Academic Emergency Medicine.* 3: 1263-1269.

13) Ministry of Public Health, (2001). *Psychosocial Support in Situations of Mass Emergency*: *European Policy Paper*. Brussels, Belgium: Author.

14) BC Provincial Pandemic Influenza Psychosocial Task Group (Work in Progress). *BC pandemic influenza psychosocial support plan for health care providers and other responders.* Vancouver, BC: Author.

15) Centers for Disease Control and Prevention, US Public Health Service, (2006). *Pandemic influenza preparedness: Adaptive responses to an evolving challenge.* Journal of Homeland Security and Emergency Management, vol 3, issue 2, article 13.

16) Public Health Agency of Canada, (2007*). Planning guide for the psychosocial impacts of pandemic influenza*. Ottawa, ON: Author.

17) US Department of Health and Human Services, Pandemic Influenza Plan, Supplement 11, (2007). *Workforce support: Psychosocial considerations and information needs.* Author.

18) Moustakis, C. (1994). *Phenomenological research methods*. Thousand Oaks, CA: Sage Publications Inc.

19) van Maanen, M. (1990). *Researching lived experience: Human science for an action sensitive pedagogy*. New York: SUNY Press.

20) Polkinghorne, D. E. (1989). Phenomenological research methods. In R. S. Valle & S. Halling (Eds*.), Existential-phenomenological perspectives in psychology* (pp. 41-60). New York: Plenum.

21) Spielberger, C.D., (1983). *State-Trait Anxiety Inventory for Adults*. Menlo Park, CA: Consulting Psychologists Press, Inc.

22) Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

23) SARS Commission (200?). SARS commission final report, Volume Two: Spring of fear – the story of SARS.

24) Worker's Compensation Act: Part 3, Division 3, Section 115 [RSBC 1996]

25) Committee on Oversight and Government Reform, US House of Representatives, May 2008. *Hospital emergency surge capacity: Not ready for the "predictable surprise."*

26) Hospital Emergency Incident Command System III (HEICS III) https://www.emsa.ca.gov (5/21/2008). California Emergency Medical Services Authority.

27) World Health Organization, (2007). Ethical considerations in developing a public health response to pandemic influenza. Geneva, Switzerland: Author.

28) Dirkzwager A.J., Yzermans C.J., Kessels F.J. (2004). Psychological, musculoskeletal, and respiratory problems and sickness absence before and after involvement in a disaster: a longitudinal study among rescue workers. *Occupational and Environmental Medicine.* 61(10): 870-2

29) Morren, M., et al., (2007). The influence of a disaster on the health of rescue workers: a longitudinal study. *Canadian Medical Association Journal*, 176(9), 1293-1294.

Resource Bibliography

Pandemic Plans, General:

BC Centre for Disease Control, BC Ministry of Health, (2005, August). *British Columbia pandemic influenza preparedness plan: Guidelines for planning, response and recovery.*

New Brunswick Department of Health and Wellness, (2005, December). *New Brunswick pandemic influenza plan for the health sector.*

Providence Health Care, (2005). *Pandemic influenza preparedness plan: Guidelines for planning, response, and recovery.*

Public Health Agency of Canada, (2006). *The Canadian pandemic influenza plan for the health sector.*

Security and Prosperity Partnership of North America, (2007, August). *North American plan for avian and pandemic influenza.*

US Department of Homeland Security, (2006, Sept 19). *Pandemic influenza preparedness, response, and recovery guide for critical infrastructure and key resources.*

Vancouver Coastal Health, (year ?). *Pandemic preparedness: Look after yourself. How to care for yourself and the people you care about.*

World Health Organization, (2005). *WHO global influenza preparedness plan: The role of WHO and recommendations for national measures before and during pandemics.* Department of Communicable Disease Surveillance and Response. Global Influenza Programme.

World Health Organization, (2007, May). *WHO interim protocol: Rapid operations to contain the initial emergence of pandemic influenza.*

World Health Organization, (2005). *Asia Pacific strategy for emerging diseases.* Regional Offices for the Western Pacific and South-East Asia

Pandemic Plans, Psychosocial:

BC Provincial Pandemic Influenza Psychosocial Task Group (Work in Progress: Draft 19). *BC pandemic influenza psychosocial support plan for health care providers and other responders.*

Centers for Disease Control and Prevention, US Public Health Service, (2006). *Pandemic influenza preparedness: Adaptive responses to an evolving challenge.* Journal of Homeland Security and Emergency Management, vol 3, issue 2, article 13.

Public Health Agency of Canada, (2007*). Planning guide for the psychosocial impacts of pandemic influenza*.

US Department of Health and Human Services, Pandemic Influenza Plan, Supplement 11, (2007). *Workforce support: Psychosocial considerations and information needs.*

Disaster Plans, Psychosocial

BC Ministry of Health, (2007, May). *Psychosocial Response Workbook: Disaster Stress and Trauma Response (DSTRS)*, 2nd Ed..

Ehrenreich, J., (2001). *Coping with disasters: A guidebook to psychosocial intervention*. New York, Center for Psychology and Society.

Health Canada, Environmental and Workplace Health (year?). *Preparing for and Responding to Workplace Trauma: A managers handbook.*

Seynaeve, G. J. R. (Ed.) (2001). *Psychosocial Support in Situations of Mass Emergency*. European Policy Paper, Ministry of Public Health. Brussels, Belgium.

Personal Services, Chapter III: *Emotional Aftermath of Disaster*. Ottawa, ON: Minister of National Health and Welfare – Emergency Services Division (1992).

Young, B., et al., (1998). *Disaster Mental Health Services*. Palo Alto, CA: Department of Veterans Affairs, National Center for Post-Traumatic Stress Disorder.

Articles, Reports and Books

Ehrenstein, B., et al., (2006). Influenza pandemic and professional duty: Family or patients first? A survey of hospital employees. *BMC Public Health*, 6:311,

Macklar, N., et al., (2007). Will first responders show up for work during a pandemic? Lessons from a smallpox vaccination survey of paramedics. *Disaster Management Response*, 5(2), 45-48.

Morren, M., et al., (2007). The influence of a disaster on the health of rescue workers: a longitudinal study. *Canadian Medical Association Journal*, 176(9), 1293-1294.

O'Keefe, B., & MacDonald, I., (2004). *Dr. Fred and the Spanish lady*. Surrey, B.C.: Heritage House Publishing Co.

Phillips, C.B., et al., (2007). Australian general practice and pandemic influenza: models of clinical practice in an established pandemic. *Medical Journal of Australia*, 186: 355-358.

Providence Health Care Diversity Services, (2007). *Huddle for Diversity: Health Care Tips for Raising Cultural and Religious Awareness.* Volume 1, 2nd Ed.

Ruderman, C., et al., (2006). On pandemics and the duty to care: Whose duty? Who cares? *BMC Medical Ethics*, 7:5.

The SARS Commission – Final Report, (2007). Online.

Upshur, R., (2006) Draft Paper: *The role and obligations of healthcare workers during an outbreak of pandemic influenza*. World Health Organization Project on addressing ethical issues in pandemic influenza planning.

Yassi, A., et al., (2004). Globalization and the health of the healthcare workforce. *International Journal of Occupational and Environmental Health*. 10(4), 355-359.

APPENDIX 1

The Focus Group Interview/Process Guide

a. Introduction: At the start of each focus group introduce the participants to one another and briefly establish group norms in order to create an atmosphere of trust and mutual support. Introduce the research project and review the process of participation beginning with participant consent forms.

b. STAI-s: Introduce the State-Trait Anxiety Inventory. (Spielberger, 1977) This state anxiety scale measures the level of state anxiety for participants before and after the delivery of the pandemic information package described below.

c. Pandemic information package: Denys Carrier, Leader of the Emergency Preparedness Program at Providence Health Care, makes a one-hour presentation on the nature and predicted impact of the pandemic that he developed for this project. This presentation covered the impact of the pandemic on society as a whole, as well as the impact on health care in particular (A copy of the presentation is provided in appendix 5).

d. Guided discussion: Facilitate a brief period of questions and answers clarifying specific points in the information package each participant has received. Then begin a guided discussion among the focus group participants. This may last up to 3 hours. (The discussion was guided by two of the co-researchers for this project, Linda MacNutt and Paul Whitehead, who are both highly trained and experienced group facilitators. The facilitators guided the focus group discussion by asking the participants to imagine themselves in the position of going into work at several different points in time, corresponding to the different waves of the pandemic that had been described in the information presentation.) Ask participants to consider aspects of both their personal lives and their professional experience, and invite them to discuss whatever concerns or specific

needs they become aware of as they try to imagine themselves living and working through a pandemic influenza.

e. Examples of stress awareness and management tools: At the end of the focus group ask participants to review and provide feedback on two stress management tools. The first, BASICS, is being developed by the research team as a stress awareness tool, while the second, HeartMath, is a stress management tool that uses measures of heart rate variability as part of a personal training program in managing stress. Give a brief presentation on the tool, and then invite the participants to comment on their perception of the usefulness of the tool for managing stress in the workplace during a crisis situation, such as the pandemic.

APPENDIX 2
Quantitative Findings: STAI-s and Cohen's d.

Table 1 presents the findings of the state measure of the State-Trait Anxiety Inventory[21] that was administered to all focus group participants before and after the delivery of the Pandemic Information Package.

The STAI-state is a 20 item instrument that provides an operational measure of the current level of anxiety an individual is experiencing in the moment. The validity and reliability of the STAI-s has been well documented (Spielberger, 1983).

The "mean pre" and "mean post" values listed below refer to the mean scores for the STAI-s before and after the information package for each focus group, and for all groups calculated as a whole. The "sd pre" and "sd post" values listed below refer to the standard deviations of the STAI-s scores before and after the information package for each focus group and for all groups calculated as a whole. The means and standard deviations were used in the calculation of "Cohen's d" using the following formula:

Cohen's d = M_1 (treatment or 'post' group) – M_2 (control or 'pre' group) / sd_{pooled}

Where $sd_{pooled} = \sqrt{[(sd_1^2 + sd_2^2) / 2]}$

Table 1: Calculation of effect size for STAI-s

Group #	mean pre	mean post	sd pre	sd post	Cohen's d
1	34.44	42	8.2	12.03	0.734
2	29	39.5	5.89	5.57	1.832
3	33.11	40.56	6.62	12.37	0.751
4	26.86	37.43	7.34	8.68	1.315
5	28.63	45.13	9.78	13.93	1.371
6	31	39.88	6.44	9.4	1.102
7	27.75	35	2.63	5.48	1.687
8	29.5	45	0.71	8.49	2.573
All Groups	30.57	40.65	7.3	10.48	1.116

The statistical calculation of Cohen's 'd' identifies a value for a small effect size at d = 0.2, for a medium effect size at d = 0.5, and for a large effect size at d = 0.8. All of the above values are within the range of large effect sizes.

For a discussion of the calculation of effect size and Cohen's d, see:
Becker, L. *Effect Size*. Retrieved August 31, 2007, from Effect Size Calculators. Web Site: http://web.uccs.edu/lbecker/ Psy590/es.htm

APPENDIX 3

BASICS

- The following six domains concern areas of functioning that are affected by stress. In each domain three questions have been developed to sensitize you to an aspect of that domain that requires self-assessment and monitoring.
- Only you can determine whether your current level of functioning in these domains is
  Green O (resilient = continue with present functioning)
  Yellow O (developing stress = proceed with caution)
  Red O (critically stressed = stop and take action to reduce stress)

To what extent do the following statements fit with your experience and behaviour at work recently?
O Green = very little or not at all, O Yellow = somewhat, O Red = a lot

B = Behavioural domain	**score:**	**Green**	**Yellow**	**Red**
- I have recently behaved in ways that are unusual and surprising for me.		O	O	O
- Lately I have found myself avoiding a place, person, or aspect of my job.		O	O	O
- I have been jumpy and easily startled.		O	O	O

A = Affective domain	**score:**	**Green**	**Yellow**	**Red**
- I have been unusually irritable and angry in the past few hours and days.		O	O	O
- I have felt kind of numb or as if things are unreal lately.		O	O	O
- Strong waves of feeling have been coming up unexpectedly.		O	O	O

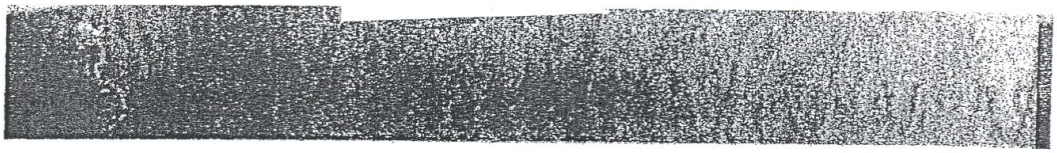
S = Somatic domain	**score:**	**Green**	**Yellow**	**Red**
- I have experienced physical symptoms of stress lately, such as headaches, stomach aches, nausea or sweating.		O	O	O
- I have had shortness of breath and a pounding heart at times lately.		O	O	O
- I have had difficulty calming myself to rest or sleep.		O	O	O

I = Interpersonal domain	**score:**	**Green**	**Yellow**	**Red**
- I've been feeling very irritable with my colleagues.		O	O	O
- I feel like my colleagues have let me down.		O	O	O
- I feel disconnected from my family and friends		O	O	O

C = Cognitive domain	**score:**	**Green**	**Yellow**	**Red**
- I have tried to avoid thinking about what's happening, and especially certain events that have occurred.		O	O	O
- Difficult pictures and thoughts have popped into my mind lately.		O	O	O
- I have had trouble concentrating or found myself stunned or 'blank' at times lately.		O	O	O

S = Spiritual / Moral domain	**score:**	**Green**	**Yellow**	**Red**
- I keep asking myself why this is happening.		O	O	O
- Given what is happening I've been questioning my beliefs		O	O	O
- I feel there is no real meaning in what I'm doing any more.		O	O	O

Appendix 4



Reduce your Stress for Better Health

What is stress?

Stress is a term used to describe the wear and tear the body experiences in reaction to everyday tensions and pressures. Career and lifestyle changes, illness or injury are some of the common causes of stress. However, it's the emotional pressure and tension we feel in response to the little everyday hassles -rush hour traffic, waiting in line, and too many emails-that do the most damage.

How does stress affect health?

Stress affects people physically, mentally and emotionally. According to the American Institute of Stress, up to 90% of all health problems are related to stress. Too much stress can contribute to and agitate many health problems including heart disease, high blood pressure, stroke, depression and sleep disorders.

How stressed are you?

Everyone responds to stress differently. Which of these warning signs do you experience?

- o I feel overly tired or fatigued.
- o I often am nervous, anxious or depressed.
- o I have sleep problems.
- o I have repeated headaches or minor aches and pains.
- o I worry about job security, financial obligations or relationships.

What can you do about it?

The first step is to understand how stress works. It's not the events or situations that do the harm; it's how you respond to those events. More precisely, it's how you feel about them that determines whether you are stressed or not.

Emotions, or feelings, have a powerful impact on the human body. Positive emotions like appreciation, care, and love not only feel good, they are good for you. They help your body's systems synchronize and work better.

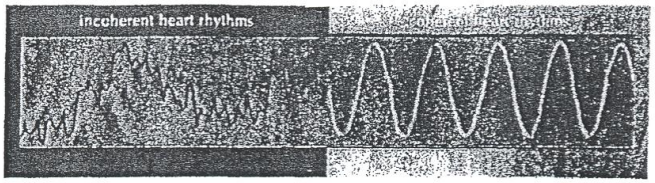
How does it work?

When you intentionally shift to a positive emotion, heart rhythms immediately change. This shift creates a favorable cascade of neural, hormonal and biochemical events that benefit the entire body. The effects are both immediate and long lasting.

Research at the Institute of HeartMath has shown that emotions are reflected in the beat-to-beat changes in the heart's rhythms. This is called heart rate variability, or HRV. The analysis of HRV is recognized as a powerful, non-invasive way to measure nervous system dynamics. New clinical research identifies HRV as a key indicator of preventable stress and shows a relationship to a wide range of health problems.

HeartMath

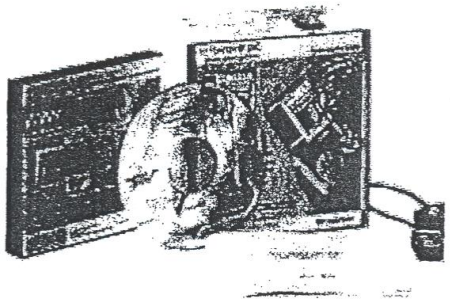
Appendix 4

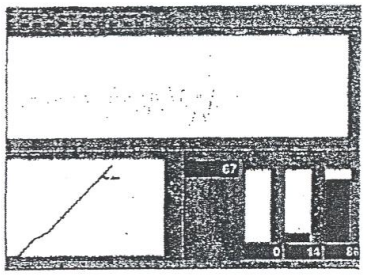


When you're stressed, your body is out of sync. Typical negative emotions we feel when stressed-like anger, frustration, anxiety and worry-lead to increased disorder in the heart's rhythms and in the nervous system. In contrast, positive emotions like joy, appreciation, care and kindness create harmony in the heart's rhythms and the nervous system. Other bodily systems sync up to this rhythm, which scientists call coherence. Because coherence leads to more mental clarity, creativity and better problem-solving abilities, it's easier to find solutions and better ways of handling stressful situations.

How do you increase coherence?

HeartMath has designed a system of tools and techniques to help you increase physiological coherence so you can prevent, manage and reverse the effects of too much stress. The emWave® PC Stress Relief System accelerates your learning by enabling you so see your heart rhythms in real time on the computer screen.





By correlating the patterns on the screen with the mental, emotional and physiological changes you experience while practicing HeartMath techniques, you learn to find and maintain physiological coherence. Your goal is to increase the amount of coherence you are able to sustain in each session. With practice you learn how to quickly change your reactions to stress, increase your energy and improve your overall health and wellbeing.

Regular use of the HeartMath System has resulted in significant stress reduction benefits for people with ADD/ADHD, anger, anxiety and panic disorders, arrhythmias, asthma, chronic fatigue, chronic pain, depression, diabetes, digestive disorders, hypertension, and sleep disorders.

Contact your Licensed HeartMath providerfor more information.

Providence HEALTH CARE
St. *Paul's Hospital*
1061 Burril"d S1reel. Vancouver. Bc V6Z 1Y6 Telephone: 604-682-2344 Ext. 63241 Fax: 604-806-8126 Pagerextemal: 604-135-0334 Pagerintemal: 54380 e-mail: bM:nUCl@providencehealth.bc.ca
Linda MacNutt
Clinical Coordinator – **Cummulative, Critical Incident Stress Management**

Appendix 5

Slide 1

Pandemic Influenza

An Overview

Slide 2

Pandemic Influenza Response Plan

The overall goal of a pandemic response plan is:

First, to minimize serious illness and overall deaths,

Second, to minimize societal disruption and economic loss as a result of an influenza pandemic.

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Slide 3

Response Goals

To reduce the probability or likelihood of serious illness and overall deaths

To minimize reduce the magnitude, severity or importance of societal and economic disruption

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Slide 4

Influenza

- **Worldwide:** Every year, 5-15% of the population affected; 3-5 million people severely ill; 250,000-500,000 deaths.
- **Canada:** Every year, millions get sick; 500-1500 deaths are reported & true number is likely much higher

Slide 5

Pandemic Influenza

- 3 pandemics last century:
  1918, 1957, 1968.
- 1918 (Spanish): H1N1
  - 20-40 million dead worldwide;
  - 30,000-50,000 in Canada
- 1957 (Asian): H2N2
- 1968 (Hong Kong): H3N2
- Pandemics occur every 10-40 years, average 25 years

Slide 6

Pandemic Influenza

- In each of those pandemics, the greatest increase in death rates was in people less than 60 years old:
  - ✓1918: almost 50% of deaths in 20-40 yr olds
  - ✓1957/58: 36% of influenza deaths in under 65 yr olds
  - ✓1968/69: 48% of influenza deaths in under 65 yr olds.

Slide 7

Pandemic Influenza

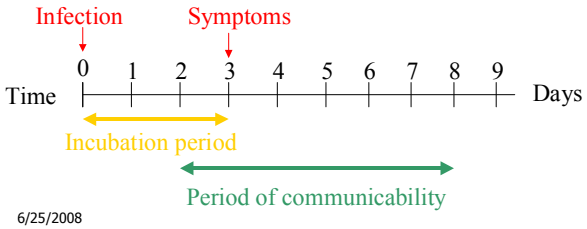
This is part of what distinguishes Pandemic Influenza:

- Influenza severely affects young, healthy adults.
- Normal influenza: 5% – 20% ill
- Pandemic: 30% to 50% (or more?) ill

Slide 8

Influenza Epidemiology

- Incubation period = Time from infection until onset of symptoms
- Period of communicability = Time a case is infectious to others



Slide 9

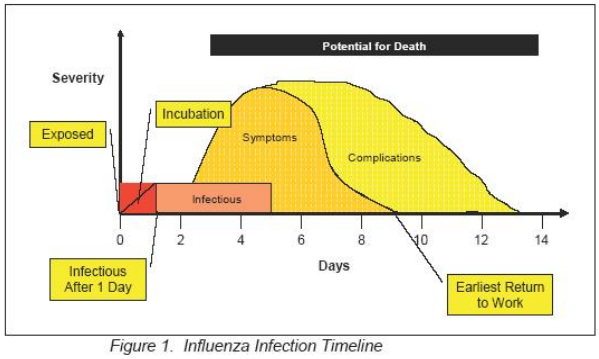


Figure 1. Influenza Infection Timeline

Exposed – Once an individual has been exposed to the virus, the flu particles make their way to the respiratory system, where they invade cells of the lining and begin to replicate. A single virus working with the resources of an invaded cell can produce millions of copies of itself during the "incubation" stage. The incubation period ranges from one to three days.

Slide 10

Consequences

Pandemic Influenza will be very different than most other Disasters by effecting population:

- Health
- Critical infrastructure
- Psycho-social structure
- Economics

Slide 11

Pandemic Influenza

- Anticipate the arrival of a pandemic influenza virus within 3 months of the first emergence.
- Expect 1st peak of illness 2-4 months after arrival; 1st peak of mortality ~1 month after illness peak.
- Expect 2nd **wave** within 3-9 months of initial outbreak. 2nd **wave** = more serious illness & greater mortality.
- When pandemic virus arrives close to usual influenza season (Nov.-Apr.), the interval between arrival and epidemic peak can be very short.

Slide 12

Impact on Canada

- 4.5 - 10.6 million Canadians (15% to 35% of population) will become ill enough to miss work/school.
- 2.1 - 5.0 million people will need outpatient care
- 34,000 - 138,000 will need hospitalization
- 11,000 - 58,000 people will die.
- It will cost the Canadian economy $10 to $24 billion.

Slide 13

Impact on Canada (cont' d)

- -35-50% of the workforce will be ill and include police, fire, bus drivers, ambulance
- Others will stay home to look after sick family members
- Who will want to come to work
- Supplies will run out
- Anxiety, fear, anger, etc.

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The Impact in Vancouver Coastal Health

- Population - 1,034,322
  - 158,176 - 369,078 will become clinically ill
  - 69,271 - 148,113 will require outpatient care
  - 484 - 4,601 will require hospitalization
  - 300 - 1,731 will die

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Challenges

- ✓There will be an unprecedented demand on medical services
- ✓Shortage of anti-viral medications and initially no vaccine available
- ✓Clear, consistent and translated messaging on how to:
  - Protect yourself and family members
  - Care for yourself and family members

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Challenges (Cont' d)

- ✓ Health care workers will become ill
- ✓ Nursing shortage already acute
- ✓ Education of health care providers
- ✓ Health care system/hospital surge capacity limited
- ✓ Worried well phenomena
- ✓ Managing public expectation of "business as usual" will require clear communication at all levels inside and outside of the organization

Slide 17

Challenges (Cont' d)

- ✓ Pressures on acute care for beds, ventilators,
- ✓ Potential lack of, or shortage of supplies
- ✓ Alternative sites for service - how to identify, ready and bring into operation
- ✓ Management of residents in long-term care facilities

Slide 18

Continuity of Operations Planning

- Identify key functions
- Cross train staff (redeployment)
- Identify telecommuting opportunities
- Review HR policies (sick leave, flex shifts)
- Identify ways to maintain payroll functions
- Make alcohol gel, disinfectant wipes available

Slide 19

National Priority Lists

- Anti-Virals
  1. Tx of persons hospitalized with flu
  2. **Tx of ill HCWs and emergency services**
  3. Tx of ill high-risk persons in the community
  4. Prophylaxis of HCWs
  5. Control of outbreaks in LTC facilities
  6. Prophylaxis of essential service providers
  7. Prophylaxis of high-risk persons in hospital
  8. Prophylaxis of high-risk persons in the community
- Vaccines
  1. **HCW, Paramedics/ambulance attendants**
  2. Essential Service Providers
  3. Persons at high-risk of sever of fatal outcomes following influenza infection
  4. Healthy adults
  5. Children 24 months to 18 years of age

Slide 20

Handling and Disposal of the Deceased

Challenges

- ✓ Identify temporary morgue space
- ✓ Determine surge capacity of crematoriums
- ✓ Shortage of supplies and resources
- ✓ Transportation of bodies

Slide 21

Local Government Considerations

Challenges

- ✓ Maintenance of essential services
- ✓ Need for education and training across sectors
  - Recognition of roles and critical contributions
  - Developing standardized processes, terminology
- ✓ Open, timely two-way communication between health sector and key government agencies

Slide 22

"The pandemic influenza clock is ticking. We just don't know what time it is."

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Slide 23

What will happen?

- ✓ Hit several areas at the same time
- ✓ Simultaneous outbreaks in each area
- ✓ Hospital visits will skyrocket
- ✓ Deaths
- ✓ Loss of public services

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Influenza Complications

- ✓ Morbidity (severe illness)
  - ✓ Infants
  - ✓ Elderly
  - ✓ Those with chronic health problems
- ✓ Mortality (death)
  - ✓ Elderly
  - ✓ Pandemics: May see mortality in young adults

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WHO Pandemic Phases

Phase	Definition
Interpandemic Phase 1	✓No new influenza subtypes in humans ✓Influenza subtype that has caused human infection may be present in animals, but risk of human disease low
Phase 2	✓No new influenza subtypes in humans ✓Circulating animal subtype poses substantial risk of human disease
Pandemic Alert ← Phase 3	✓Human infections with a new subtype ✓No human spread or rare spread to close contacts
Phase 4	✓Small cluster of human-to-human transmission ✓Still localized, virus not well adapted to humans
Phase 5	✓Large clusters of human-to-human transmission ✓Increasingly adapted to humans, not fully transmissible
Pandemic Phase 6	✓Increased and sustained transmission in general population ✓**There will be several waves**
Postpandemic	✓Return to Interpandemic period

Slide 26

Pandemic Waves

Pandemics occur in multiple waves of disease outbreaks.
The first wave in a local area is likely to last 6 to 8 weeks.
The time between pandemic waves varies and can not be easily predicted (**reprieve**).

➢The **1918/19** A/H1N1 pandemic occurred in three distinct waves: early spring 1918, autumn 1918 and winter 1919.

➢The second wave was the largest and had the highest case fatality.

➢In **1957/58** the second wave was very small in comparison to the first.

➢In contrast, the **1968/69** A/H3N2 pandemic, the second wave in 1969/70 was more severe than the epidemic wave in the winter of 1968/69.

Slide 27

Pandemic Recovery

Recovery Processes
Recovery (Post Pandemic – return to Interpandemic period)

✓Establish criteria and process for agreeing to return to business as normal.
✓Review and update risk and impact assessment.
✓Communicate internally with staff and externally with related agencies.
✓Manage return to business as normal.
✓Conduct full debrief process(es).
✓Update pandemic plan as appropriate.
✓Update Business Continuity Plan as appropriate.
✓The recovery phase also applies to those involved in response who need time to recuperate and renew themselves
✓Psychosocial needs.

Slide 28

Handwashing

- **May be the only preventative measure available during a pandemic**

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What can you do?

- ✓ Prevention is the best defense against influenza
- ✓ Protect yourself and each other by:
  - ✓ **Getting a flu shot annually**
  - ✓ **Washing your hands frequently**
  - ✓ **Staying at home when sick**
- ✓ Become familiar with IC precautions-they do work
- ✓ Get involved with the planning
- ✓ Know who to get information from

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Pandemic Influenza

Q & A

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Additional copies of this publication may be obtained by contacting:

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