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A Review of the Management of the SARS Outbreak at the University Health Network:

Lessons for the Future

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A Review of the Management of the SARS Outbreak at the University Health Network:

A. Executive Summary

On Friday, March 28th, the province issued the first directives and on Sunday, March 30th a Code Orange alert took effect province-wide. That same afternoon Tom Closson, CEO of the University Health Network contacted Colin Smith, Director of Corporate Services, and asked him to set up a Corporate Command Centre for UHN, to be staffed 24/7. By the following morning, the centre and command centres at each site were fully staffed and the communications infrastructure fully operational.

The goals of this investigation are to describe and then evaluate the extent to which UHN was able to harness its organizational capacity in the face of SARS and provide recommendations for management practices for future outbreaks.

Data for the study came from 28 interviews with key informants as well as an organization-wide survey[1]. Results from both clearly indicate that, in general, UHN managed itself effectively during the SARS crisis, although certain areas require changes in management practices. Staff, management, and physicians came together and worked tirelessly to cope with the problems raised by the disease.

One comment, taken from an interview, captures the overall sentiment:

> "So I would say overall… our experience here was very, very positive within a situation that was very challenging. So, we have a great deal to be proud of."
> - Mary Ferguson Pare VP, Professional Affairs and Chief Nurse Executive

Highlights from the Analysis and Conclusions

A: The management response to SARS at UHN emerged in four phases:

- Phase One (Mar 26-Mar 30): Reactive
  UHN responds to Ministry instructions; no command centre structure.
- Phase Two (Mar 31-May 11): Proactive
  UHN sets up command centre structure; establishes communication lines and decision making processes.

[1] The survey was distributed through the UHN payroll and via the internet. The response rate was an impressive 28%.

- Phase Three (May 12-Aug 10): Push Back
  UHN is assertive with the Ministry; adapts directives based on management judgments.
- Phase Four (Aug 11-ongoing): Preparation for the future
  UHN discontinues screening at the door and begins reviewing performance during SARS to prepare for next outbreak.

B: The responses to the survey were overwhelmingly positive

The survey responses indicate that sentiment surrounding the management of SARS at UHN is positive. The question with the highest results in terms of agreement was question 6 ("I was told what I needed to do to protect myself from SARS") with 87% of respondents indicating either "Agree" or "Strongly Agree". At the other end of the scale, question 13 ("I was adequately recognized for my efforts during SARS") still had 60% of respondents indicating either "Agree" or "Strongly Agree".

C: The following four themes have been used to organize our findings about UHN's response to SARS

1. ***Leadership**: The actions and mind-set of key leaders throughout the crisis evoked strong support from staff at all levels and all sites. Visible and effective leadership was displayed at many levels. As a calm, reassuring yet decisive leader, the CEO set the example for the sites and also provided direction externally.
2. **Structure**: Internally, the corporate and site command centres and their staff were seen to be responsive and decisive. Knowledge exchange was effective, particularly between the command centres and key decision makers within each site, and there were few competing sources of information at UHN. However, we detected some areas for improvement. In particular, burn-out became a problem once the crisis entered its 6th and 7th weeks, and coordination with some external organizations was challenging at times.
3. **Systems and Processes**: UHN used existing systems and developed new processes as needed to manage the risk of SARS. Generally speaking these were effective; UHN excelled in the areas of screening, infection control, and supply procurement and distribution. We noted some areas for improvement, in particular the recognition and compensation of staff.
4. ***Communication**: UHN's SARS leadership team performed exceptionally well in the area of communication. Of particular note is the phenomenal success of "Tom Talks" (an almost daily email-format message from the CEO to all staff) as a tool to distribute information, reassure staff, and build morale. The major challenges in this area

derived from the fact that directives sent by the Ministry were convoluted and frequently changing.

*Overall, participants in the interviews and surveys were proud of UHN's response to SARS. Leadership and communication emerged as highlights.

Highlights from the Recommendations

We found that UHN's management approach during SARS was, on balance, outstanding. Our first recommendation is, therefore, that the next time an infectious disease crisis appears UHN's management team should repeat those actions that led to such exemplary results. In particular, UHN needs to:

1. Ensure the CEO leads the response personally.
2. Create a disaster-ready command centre structure, similar to the one use for SARS.
3. Be willing to question and adapt provincial directives.
4. Ensure leaders at all levels are visible to staff.
5. Provide leadership to external organizations.
6. Formalize the role of the infection control expert (i.e. Dr. Michael Gardam)
7. Adopt techniques used by Central Stores to obtain supplies.
8. Use the following principles when designing and implementing tools for communication, as illustrated in the phenomenal success of "Tom Talks":
    - Transparency
    - Trust
    - Responsiveness
    - Frequency
    - Simple Language
9. Use a variety of media:
    - Voicemail
    - Intranet
    - Video
    - Conference calls

At the same time, we found opportunities for improvement, and recommend that UHN do the following:

10. Manage the crises in a phased response structure. Strike the appropriate balance between central control and site autonomy at each phase of the crisis. Design signals to flag the organization's progress through the phases.
11. Modify the approach to the command centre structure to include:
    a. Training on conference call etiquette

   b. A new telephone fan out system
   c. Back-up communication systems.
   d. A standard set of email distribution lists
   e. A plan for re-deployment of corporate resources to the sites.
12. Establish protocols between external services and UHN, including community care agencies, EMS, and outsourced services such as TV/vending/bank machines etc.
13. Design a new staff recognition program.
14. Establish the process to be used at each site to decide which services to shut down/re-start and establish a set of UHN-wide principles.
15. Develop an alternate leadership approach for Infection Control staff.
16. Revise visitor policy.
17. Develop a policy for screening tools and processes, and provide ongoing training in infection control.
18. Redesign role of Occupational Health resources during a crisis.
19. Develop procedure for employees who work at other institutions as well as UHN.

B. Full Text of Final Report

1. Introduction

On Wednesday, March 26th, 2003 Premier Ernie Eves declared SARS a provincial emergency. That same afternoon Tom Closson, President and CEO of the University Health Network, held a meeting in the boardroom of the corporate offices to brief the management team. From the moment the premier declared the provincial emergency, UHN sprung into action. Within 48 hours the facilities management team had renovated and refurbished an abandoned unit on the 6th floor, complete with communication systems and negative pressure rooms.

On Friday, March 28th, the province issued the first directives and on Sunday, March 30th a Code Orange alert took effect province-wide. That same afternoon Tom contacted Colin Smith, Director of Corporate Services, and asked him to set up a Corporate Command Centre for UHN, to be staffed 24/7. By the following morning, the centre and command centres at each site were fully staffed and operational.

The initial responsiveness of UHN's management team spread quickly to each site. At each level of the organization, leaders came forward to execute roles and responsibilities. Using the Code Orange manual as a starting point, staff were swift to figure out what needed to be done and design systems to accomplish the goals. For example, by the 31st of March, the Western had set up large tents outside each entrance to protect those waiting to be screened from the snow and rain.

Ironically, it seems the disorganization of the Ministry of Health, clearly evident by the second week of the crisis, helped to strengthen the resolve of the management team to handle the response in a timely and efficient manner. Since the Ministry was not providing clear direction, the SARS response team at UHN quickly realized that it was effectively on its own, and would have to take responsibility for the safety of its staff, patients and visitors.

In addition to the lack of coordination at the Ministry, the motivation for the SARS response team to provide a voice of reason for its staff and patients was also reinforced by the sensationalist tone of the media. Radio, print and television news stories were fuelling widespread panic at the time. The management team, lead by Tom's example, saw the importance of providing a calm, reassuring presence to support staff and patients through the ordeal in contrast to the anxious tone of the press.

Moreover, the Ontario health care system had not experienced an infectious disease crisis of this magnitude in recent memory. The premier called a Code Orange (external disaster) because it was the closest match to the situation, but the protocols it contained were not sufficient to handle the implications of the SARS situation. For example, the Code Orange outlined how to bring people in to the hospital to respond to a disaster, when the main concern during SARS was how to keep people away from the building. Complicated procedures, such as screening, were new concepts for many of the staff. As a result, UHN (along with every other hospital in the GTA) had to fill in many gaps in protocol as the crisis unfolded. To overcome this lack of preparation and still perform adequately, UHN had to maximize its organizational capacity.

Thus, the goal of our investigation is, in essence, to describe and then evaluate the extent to which UHN was able to harness its organizational capacity in the face of SARS. What went well? What was missed? What should be done differently next time?

The evidence base for this study was a series of structured interviews with key informants at UHN as well as an organization-wide survey. Details of the methodology are presented below in the final section of this report.

It is clear from our findings that, overall, the SARS crisis was managed effectively at UHN, though there are certainly areas to improve upon. Staff, management and physicians came together and worked tirelessly to fight against the disease. The report that follows attempts to capture the exact nature of that success, and also includes recommendations on what could be done more effectively next time.

The following quote, taken from an interview, captures the overall sentiment:

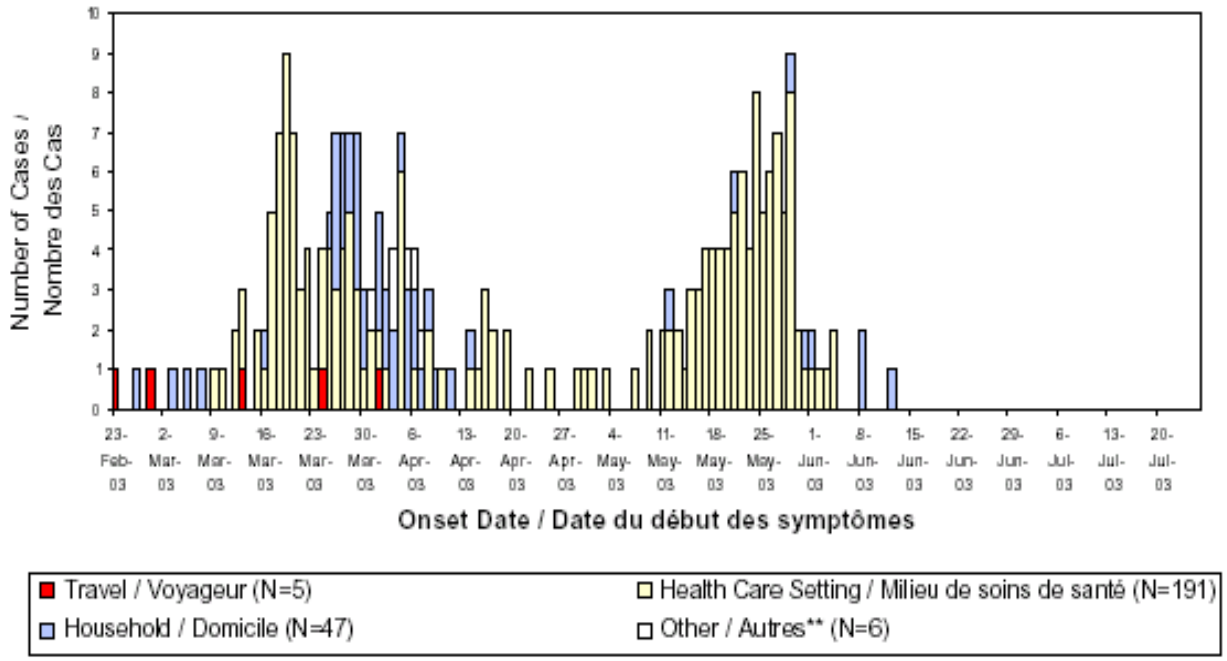
> "So I would say overall… our experience here was very, very positive within a situation that was very challenging. So, we have a great deal to be proud of."
>
> - Mary Ferguson Pare VP, Professional Affairs and Chief Nurse Executive

2. Summary of Findings

Analysis of the 28 interviews with key informants as well as the survey responses has demonstrated the following:

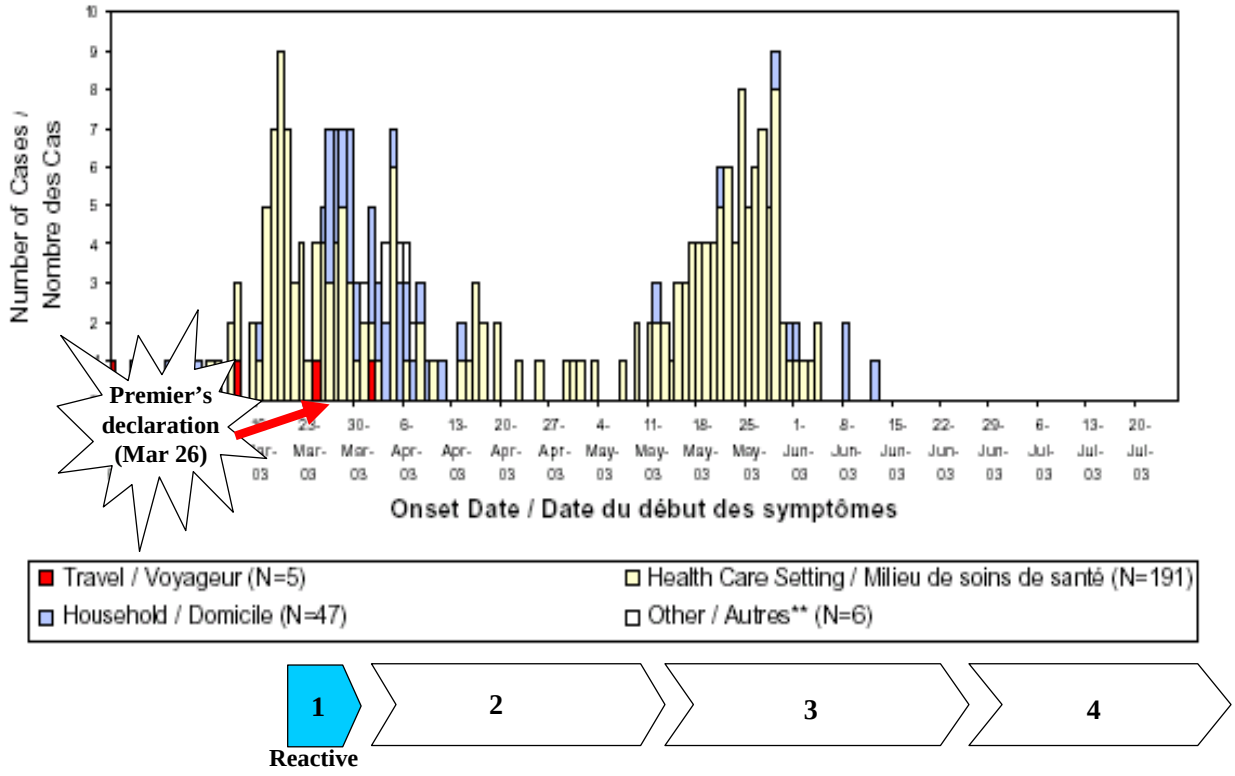
A: The management response to SARS at UHN emerged in four phases

When the actions of UHN's management during the SARS crisis are viewed from start to finish, four separate phases can be distinguished. In order to place the phases in context, we have used the epicurve data of the outbreak, as documented by Health Canada, as a backdrop (shown below).



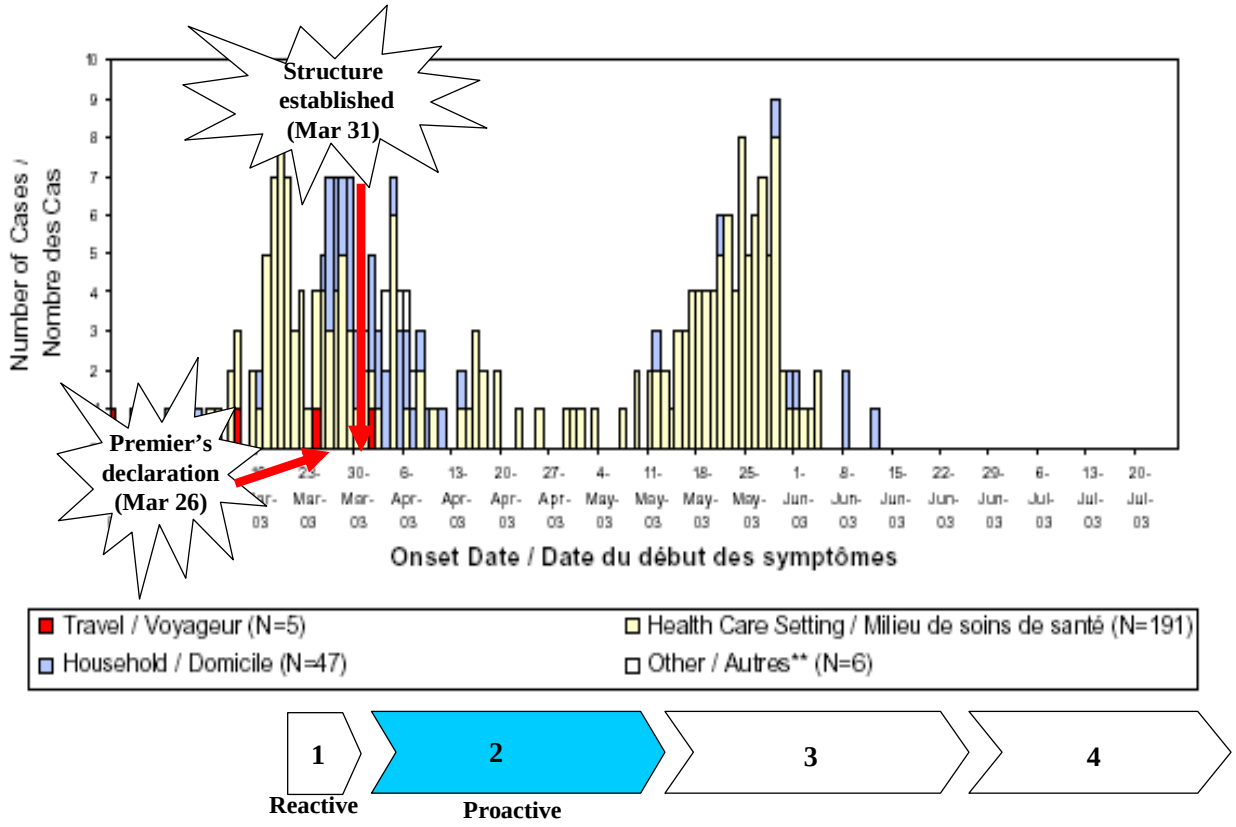
- Phase One (Mar 26-Mar 30): **Reactive**

A high level of fear, uncertainty and anxiety among the staff characterized this phase. The province declared an emergency, and UHN reacted quickly to implement the directives of the Ministry of Health and Long Term Care and the local public health authorities. Meetings of key leaders were held, construction of negative pressure rooms completed, but UHN's normal management structure and processes remained relatively unchanged.



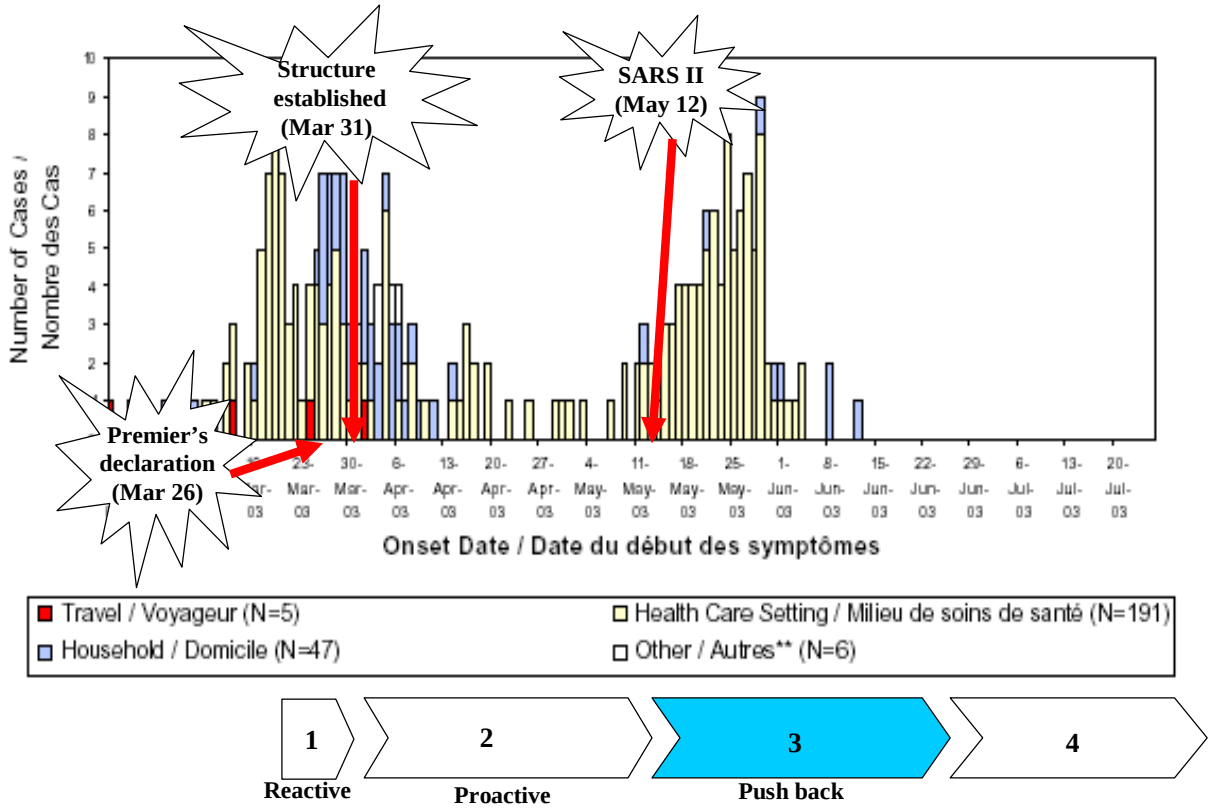
- Phase Two (Mar 31-May 11): **Proactive**

  This phase begins with the launch of the Corporate Command Centre and Site Command Centre structure, marking a switch from the ad-hoc reactions of the previous week to a coordinated disaster response. A new command-and-control management style was adopted, superceding the day to day model.



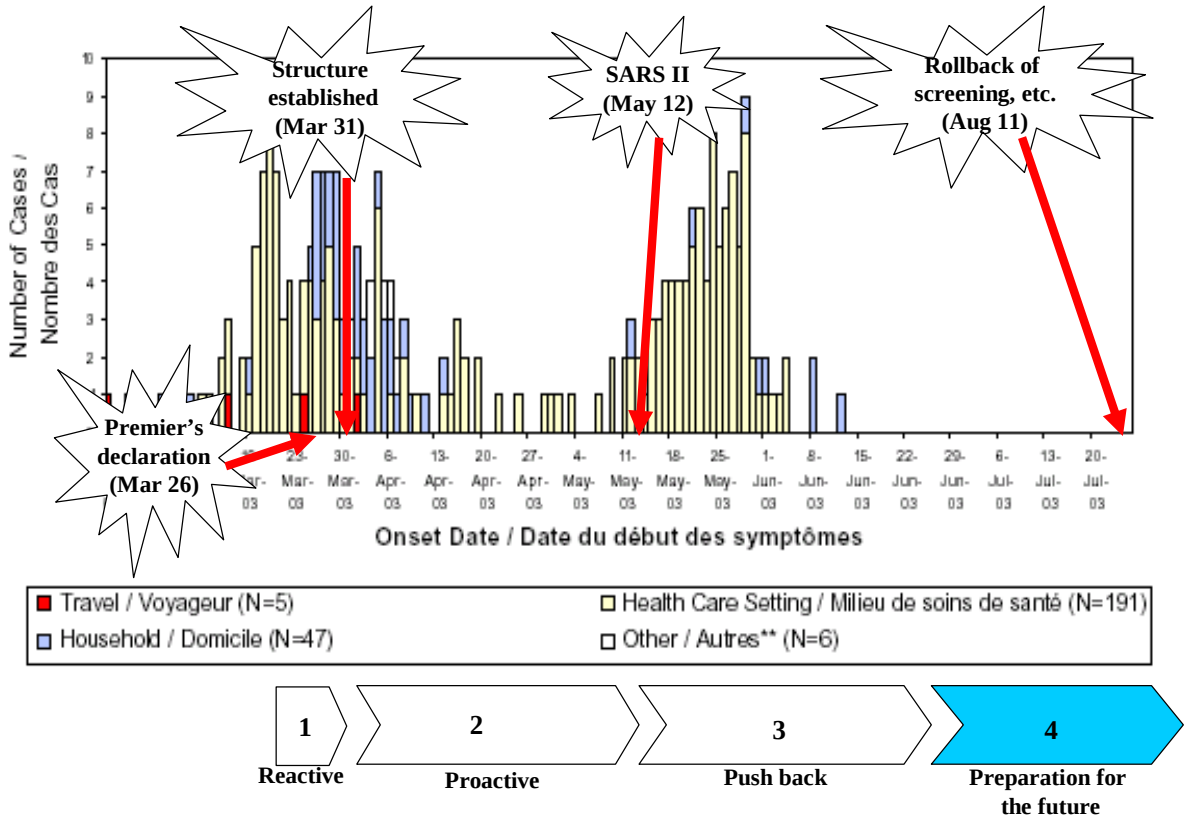
- Phase Three (May 12-Aug 10): **Push Back**

  This phase begins with the onset of SARS II. At this point in the response, UHN senior leaders have learned enough about the disease to question the appropriateness of some provincial directives to UHN. Certain orders, such as the directive to keep the Emergency at the General open, were intentionally altered by UHN to reflect the judgments of Tom Closson, Dr. Michael Gardam and the senior management team.



- Phase Four (Aug 11-ongoing): **Preparation for the future**

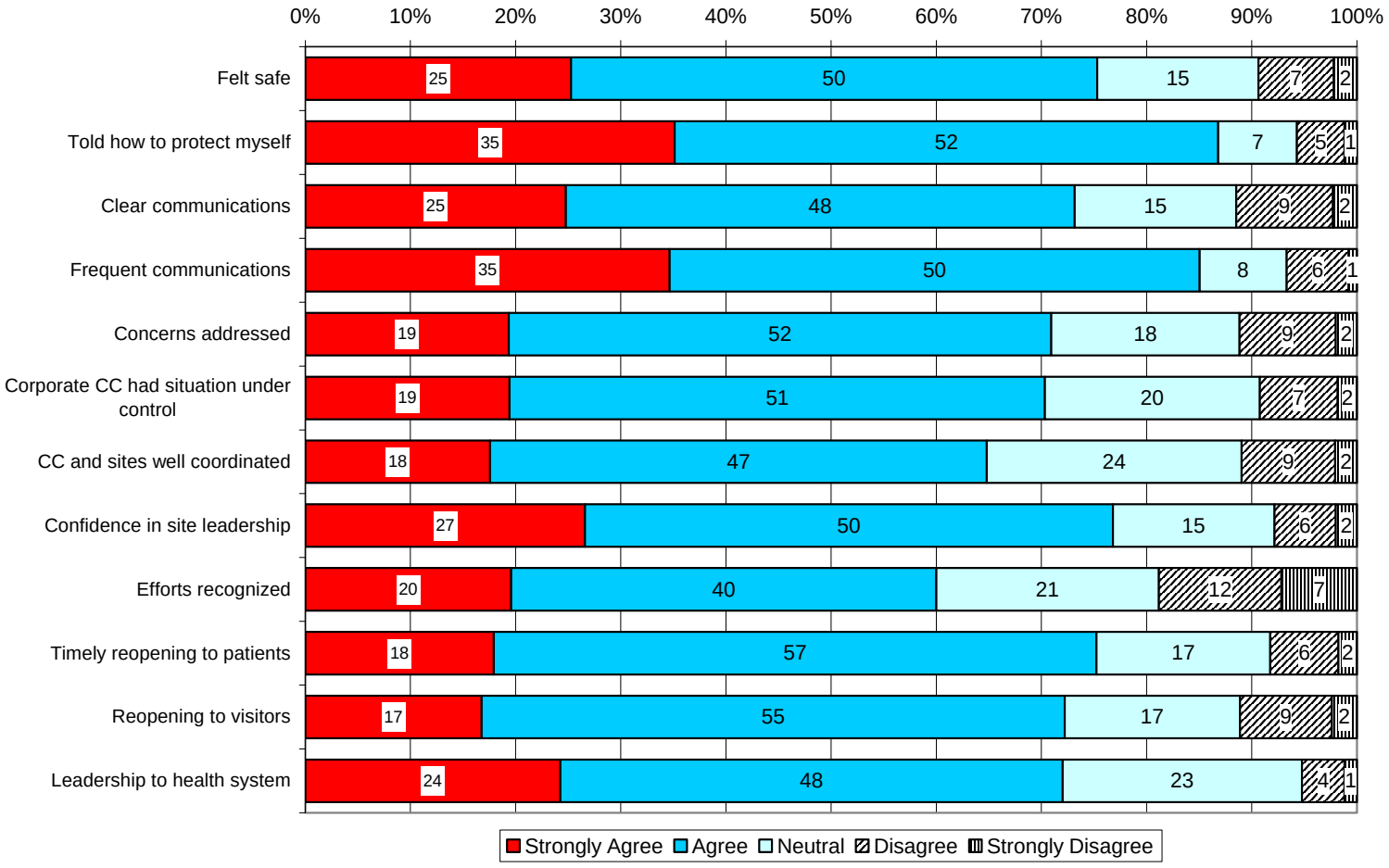
  This phase begins with the rollback of screening measures. It is characterized by a return to business as usual, something that proved challenging for UHN staff, as well as efforts to avoid a similar experience in the future.



B: The responses to the survey were overwhelmingly positive, as illustrated by a summary of survey findings

Looking at the combined "Agree" and "Strongly Agree" responses in Graph 1 below, the highest question scores 87% agreement ("I was told what I needed to do to protect myself from SARS") and the lowest (I was adequately recognized for my efforts during SARS") , still high, is at 60% agreement. Further analysis of the quantitative portion of the survey will be highlighted in the sections below.

Graph 1: Overview of responses to survey



C: The following four themes have been used to organize our findings about UHN's response to SARS

1. *Leadership: This section assesses the actions and mind-set of key leaders throughout the crisis.

2. Structure: This section analyzes the effectiveness of the corporate and site command centre functions, as well as the roles within each.

3. Systems and Processes: This section reviews the effectiveness of processes for managing interactions between key players at the centre and each of the sites, as well as interactions between site leadership and their respective staff and patient populations.

4. *Communication: This section pays particular attention to the communication tools, methods and content that UHN's SARS leadership used to inform, connect with, and hear from staff, management, and external players during the crisis.

*Overall, we found that participants in the interviews and surveys were proud of UHN's response to SARS. Leadership and communication emerged as highlights.

D: Highlights from Recommendations

We found that UHN's management approach during SARS was, on balance, outstanding. Our first recommendation is, therefore, that UHN's management team should repeat those actions that led to such exemplary results the next time an infectious disease crisis appears. In particular, UHN needs to:

1. Ensure the CEO leads the response.
2. Be willing to question and adapt provincial directives.
3. Ensure leaders at all levels are visible to staff.
4. Provide leadership to external organizations.
5. Formalize the role of the clinical expert (i.e. Michael Gardam)
6. Adopt techniques used by Central Stores to obtain supplies.
7. Use the following principles when designing and implementing tools for communication, as illustrated in the phenomenal success of "Tom Talks":
    - Transparency
    - Trust

- Responsiveness
- Frequency
- Simple Language

8. Use a variety of media:
    - Voicemail
    - Intranet
    - Video
    - Conference calls

At the same time, we found opportunities for improvement, and recommend that UHN do the following:

1. Strike the appropriate balance between central control and site autonomy at each phase of the crisis. Design signals to flag the organization's progress through the phases.
2. Implement a disaster-ready command centre structure, and include:
    a. Training on conference call etiquette
    b. A new telephone fan out system
    c. Back-up communication systems.
    d. A standard set of email distribution lists
    e. A plan for re-deployment of corporate resources to the sites.
3. Establish protocols between external services and UHN, including community care agencies, EMS, and outsourced services such as TV/vending/bank machines etc.
4. Design a new staff recognition program
5. Establish the process to be used at each site to decide which services to shut down/re-start and establish a set of UHN-wide principles.
6. Develop an alternate leadership approach for Infection Control staff.
7. Revise visitor policy.
8. Develop a policy for screening tools and processes, and provide ongoing training in infection control.
9. Redesign role of Occupational Health resources during a crisis.
10. Develop procedure for employees who work at other institutions.

3. Analysis, Conclusions and Recommendations

This section examines in detail each of the four main themes outlined above. The themes are divided in to sub-themes, which, similar to the main themes, arose from the content of the responses we received from the interviews and surveys. Under each heading we present the key outcomes of the investigations (quotes, analysis and conclusions) followed by the corresponding recommendation(s).

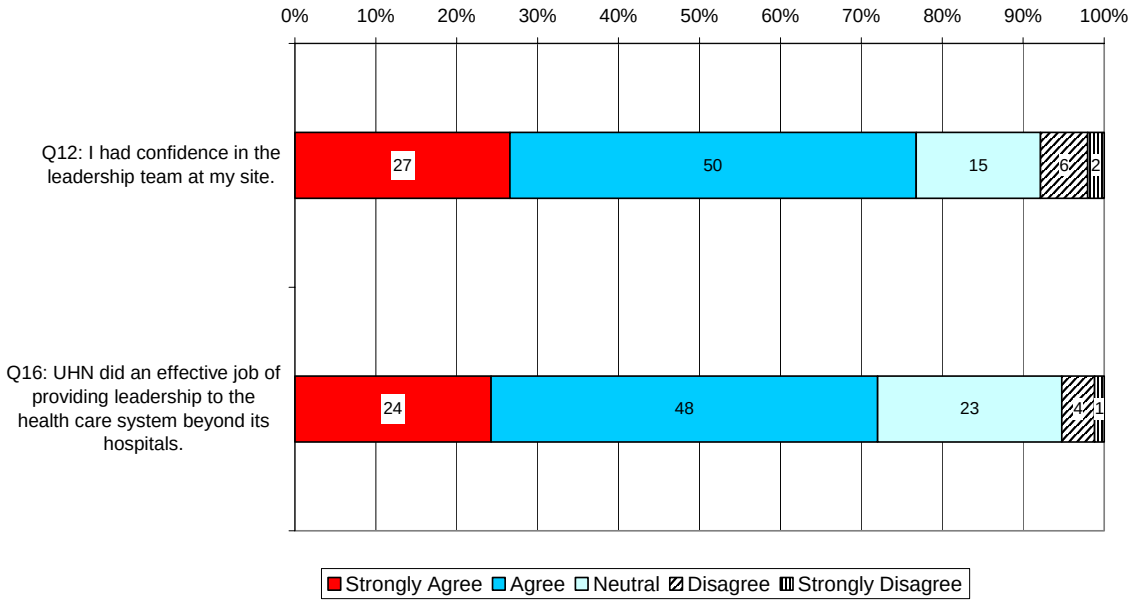
Theme #1: LEADERSHIP

This section assesses the actions and mind-set of key leaders throughout the crisis. It starts with an assessment of the overall leadership at the corporate level and at the sites. Next, we present a discussion of the issue of central control and direction vs. allowing each site to exercise managerial autonomy in decisions about the handling of SARS. Finally, we present a discussion about specific leadership issues in the infection control team.

1. Overall Leadership

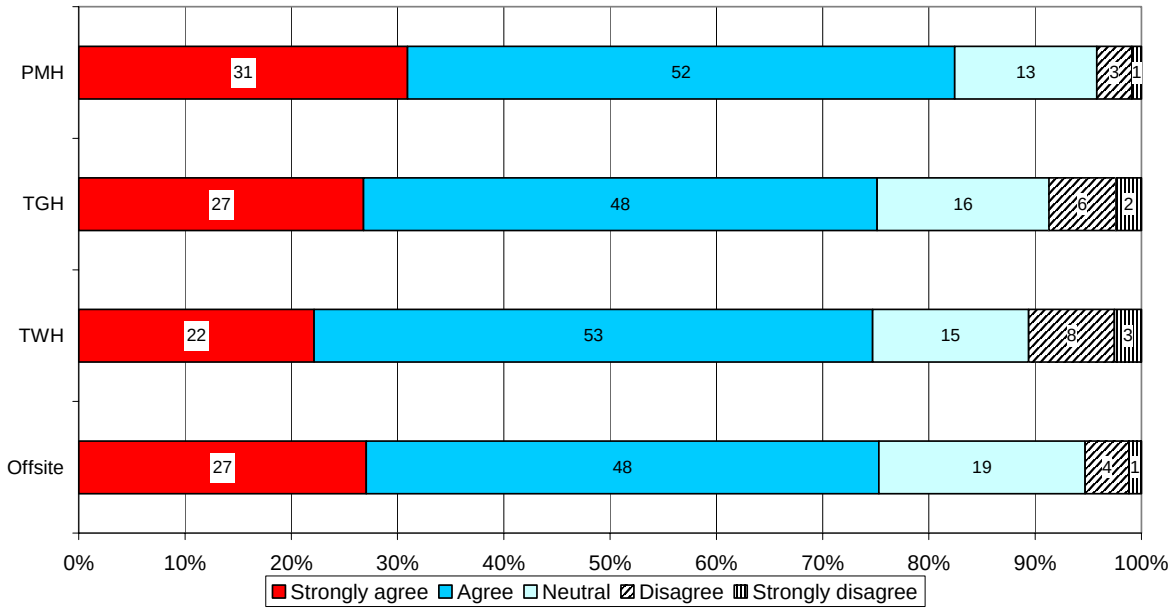
As indicated in Graph 2 below, staff show strong support for the leadership at UHN both internally (Q12) and externally (Q16). Respondents were slightly more positive about internal leadership (Strongly Agree + Agree = 77%) as compared to attitudes toward UHN's external leadership (Strongly Agree + Agree = 72%). However, because of the large number of "Don't know" and "No response" answers for Q16, we conclude that this finding is due more to a lack of knowledge about the activities that UHN was conducting beyond its hospitals rather than dissatisfaction with the process.

Graph 2: Confidence in UHN Leadership - Internal and External



As indicated in Graph 3 below, confidence in the leadership team at each site was consistently high, ranging from 83% agreement at PMH to 75% for the other sites and off-site leadership.

Graph 3: Q12 "I had confidence in the leadership team at my site." according to site



What worked well:[2]

- CEO Tom Closson was singled out repeatedly as a calm yet authoritative leader, setting an example for all. By all accounts unflappable, Tom did not hesitate to make decisions with the input of his senior leadership team.

  "Tom was amazing. Just absolutely cool and amazing throughout this, and that rubbed off on me and helped me to be calm."

  --Director, TWH

  "People know Tom. They trust him. They know they're going to get the information, as soon as he had it and I think that that served us pretty well."

  -- Gillian Howard, VP Public Affairs

- Leaders emerged quickly: There was no hesitation to step up and do what needed to be done. From the moment Tom Closson called the

[2] As it would be difficult to reproduce all comments corresponding to each sub theme, a representative quote is provided, preceded by our conclusion statement. (For a complete listing of the comments, divided according to theme, please see Appendices F and J).

first meeting of what came to be known as the SARS Planning Team on the 26th of March, a take-charge attitude prevailed.

"Well, I thought our response was excellent because right from the beginning all of the key leaders in the organization were visible and present in the process."

-- Judy Costello, Director of Nursing, TGH

- Leadership was demonstrated at multiple levels: Within UHN, leaders rose to the challenge everywhere from the CEO's office to the front line teams.

"So, we saw leadership at multiple levels, you know excellent leadership… at the corporate management, middle management and at the unit levels …"

-- Judy Costello, Director of Nursing, TGH

- Leaders did not blindly follow Ministry directives. Even at the very beginning of the crisis, UHN leaders (Tom Closson and Dr. Michael Gardam in particular) cast a critical eye on Ministry information. Sensing that the Ministry was in disarray, leaders at UHN made adjustments to the Ministry directives, often issuing instructions to the organization that were more conservative than what the Ministry had indicated if, in their opinion, infection control principles supported this.

"I think from the beginning, we probably overcalled most things and as we went along, I think that served us very well. For example, Michael Gardam insisted on a certain intubation protocol that was not directed by the province initially, but in time became standard practice."

--VP, Corporate

- Leaders were visible and accessible to staff. Despite precautions such as no meetings and no movement between sites, as well as masks and gowns, leaders were still able to connect with their staff on a regular basis. Starting with the example provided by Tom in his extremely popular communication piece entitled "Tom Talks" (to be discussed in further detail below), as well as the fact that Michael Gardam was present in the Corporate Command Centre and available to answer questions 7 days a week, leaders throughout UHN made efforts to be available to their staff and respond to concerns.

"I feel that we were kept informed, constantly updated, and our queries/suggestions were heard."

--Support Services Worker, TGH

- Leaders had the trust and respect of staff. This appeared to be based on an overwhelming sense at UHN that leaders were acting in a transparent manner and did not withhold any information. The result was a feeling of confidence and security despite the high level of ignorance about the disease.

"I have a very strong confidence in this institution (PMH) and the leaders … any difficult situation that comes by will be handled very well."

-- Allied Health Worker, PMH

- UHN provided leadership externally
  - Through the Western conference calls: This group, made up of all hospitals in the West GTA, was expertly chaired by Janet Beed, COO of the Toronto General Site.

    "Janet Beed was present in the daily conference calls for SARS groups in hospitals in both the east and the west (that she chaired); she did a phenomenal job."

    --Program Director, TGH
  - On infection control expertise: the administrative and clinical leaders of other hospitals constantly asked Michael Gardam for advice. Other clinical leaders, including nurses and physicians who were dealing with SARS patients were also asked to give advice.

    "I mean I think in terms of infection control, certainly we provided a lot of leadership to the city."

    --VP, Corporate
  - To the Ministry: Many senior leaders at UHN, including Tom Closson and Michael Gardam, were asked for advice by the Ministry on how to handle developments in the SARS crisis. Much, although not all, of what they recommended was incorporated into Ministry communications and directives.

    "Tom was viewed as one of the most influential leaders, at least in my activities down at the Ministry of Health. Tom was very highly regarded, and his opinion counted during SARS."

    -- Dr. Tom Stewart, Director, Critical Care Services, UHN and Mt. Sinai
  - Through informal interactions: Many leaders throughout UHN spoke with counterparts in other organizations to share information on an informal basis.

    "UHN provided leadership within the downtown hospitals and cooperated well with them."

    --Physician leader, TWH
  - Through its website which became recognized as a valuable information resource about SARS. Since UHN wanted to communicate with those staff members who were at home, "Tom Talks" was posted on the publicly accessible UHN internet site. It did not take long before other organizations accessed it as well.

    "We also had people from other institutions tell us that they came to rely on what we were posting"

    -- Coordinator, Corporate

Recommendations:

As described in the evidence and conclusions above, leadership of UHN during SARS was exemplary. In future, we recommend that UHN leaders take note of these approaches and repeat them in any future crisis.

Specifically, UHN should:

1. Ensure the CEO leads the response. No other leader in the organization, however talented, carries the same influence. His or her presence and actions will set the tone for everyone.
2. Ensure that leaders are in place as quickly as possible at all levels of the organization by pre-assigning disaster response roles. (See also Recommendation 5 on p. 30.)
3. Be willing to question and adapt provincial directives according to the needs of UHN's staff, families and patients. However, to avoid the confusion created during SARS when UHN altered Ministry directives, it would be useful to develop a system of interpreting and communicating Ministry directives that clearly outlines which instructions UHN staff should be following. (See also Recommendation 1 on p. 33)
4. Ensure leaders at all levels are visible to staff, using as many media as available. This refers not only to visibility in a physical sense, meaning that leaders need to interact alongside staff during the crisis experience as much as possible, but also to visibility in a more general sense. As demonstrated by Tom through "Tom Talks" as well as through his voicemails, visibility can also be accomplished through technology.
5. Ensure leaders are seen to be transparent in their actions toward their staff. Transparency builds trust, and trust builds confidence, essential for reducing panic and maintaining effectiveness during a crisis situation.
6. Provide leadership to external organizations, such as hospitals (particularly those in the near vicinity), the Ministry of Health and Long Term Care, and public health authorities in whatever way is required, once the internal crisis response has been established. While UHN's first concern needs to be its own staff, patients and their families, it has the responsibility for sharing its expertise with the larger health community.

2. Central control vs. Site autonomy

Since UHN is a three-site organization, with different types of patients at each site with their own specific needs and characteristics, the potential for conflict between central authority and the autonomy of site management to address the needs of their site has to be explicitly addressed. Colin Smith, in charge of the Corporate Command Centre, was particularly concerned that corporate directives be clearly communicated and followed by the sites. On the other hand, the site COOs and their executive staff were concerned that the specific needs of their patient populations be respected.

Our findings are that, by and large, UHN addressed this issue well. There are, however, some areas for improvement, which are described below.

What worked well:

- Although there was discussion, sometimes heated, between the sites and the centre about how each would implement certain directives, we conclude that the sites understood the need to follow directives from the corporate command centre as closely as possible and did so, particularly during the Reactive and Proactive stages.

  "Three COOs. Very rarely do they ever want to follow the same path. I mean, the moment when SARS started to be over, you could tell, because the hospitals started going in their different directions again. But during SARS, it was very clear we were one hospital." -- Senior Manager, Corporate

- As the crisis unfolded and UHN moved from the Reactive and Proactive stages toward the Push Back Stage, sites were able to adapt corporate policies as needed.

  "Tom trusted us to do the right thing. The operational teams had broad parameters based on Provincial Operations Centre directives. We felt that we could implement these based on our site context and our best judgment."

  --Dr. Catherine Zahn, COO, TWH

Areas for improvement:

- There was an over-reliance at UHN on command centre staff to provide detailed answers regarding implementation of directives, especially as the crisis stabilized (toward the end of the Proactive stage and onward). Our label for this phenomenon is "learned helplessness," and it refers to the tendency during a crisis for capable staff to ignore their own expertise and common sense and rely instead on others to tell them what to do. This led to an over reliance on seeking instructions from the corporate command centre, particularly Dr. Michael Gardam, who was confronted with questions that could have been adequately dealt with by others.

  "We lost their ability to think because we are so formed into this mould … we sat and waited for the directives about what we should be doing next…"

  -- Director, TWH

- There was an overall lack of attention to the regular business of UHN. As soon as SARS hit, dealing with the outbreak became the only activity at UHN. Everything else was placed on hold.

  "We didn't say, "Who's looking after the shop? Who's looking after the day-to-day activities?" And there were other things that needed to continue. "

  --Director, TGH

Recommendations:

1. As UHN progresses through the four phases of disaster response, we recommend the following approach to striking the correct balance between central control (when everyone follows directives from the top) and site autonomy (when sites interpret and adapt directives as necessary).

   - Reactive phase: At onset of crisis, the organization must shift into total centralized control.
   - Proactive phase:
     - Once the situation stabilizes, the corporate office moves away from total centralized control and supports leadership and management at the sites to take more responsibility for decision making. Ideally, UHN should allow leaders at the sites to make their own decisions regarding their programs and the needs of their individual patient populations, within the boundaries set by corporate directive.
     - At the same time, corporate and site leadership needs to push back against "learned helplessness" by encouraging managers and staff to answer their own questions and make their own decisions as much as possible. Senior leaders must ratify decisions made by others rather than make all decisions themselves.
     - Leadership at the centre (i.e. the CEO) and at each site needs to pay attention to and publicly discuss the regular business of the organization.
   - Preparation for the future phase: return to the hierarchy and management approaches in place before the crisis as soon as possible.

2. In addition, we recommend that leadership throughout the organization design signals to flag the organization's progress through the stages. The signals could take many forms: For example,

the CEO could simply announce the move from one stage to another. Or, there could be some kind of diagram posted on the intranet, tracking the movement of the organization through the crisis. In either case, management need to be educated on the phases and what they mean prior to the crisis.

3. Leadership of the Infection control team

Leadership of UHN's infection control staff at the sites was minimal because Dr. Michael Gardam was totally absorbed by his role at the corporate command centre. Greatly limited by the shear volume of calls, emails and pages he was receiving, he was not physically able to meet with his infection control staff (a team of nine, deployed throughout UHN) and provide them with direction and support. Though they were relied on for infection control expertise by their respective sites, they would receive information on the latest directives at the same time as everyone else on the management team. Sometimes, since they had little time to access their messages or email, they would not have seen a new directive before they would be asked questions on it.

"I've got nine people out there... what happened is I vanished...And I did not have time to even talk to them."

-- Dr. Michael Gardam, Director, Infection Protection and Control

Recommendation:

1. Develop an alternate leadership approach for Infection Control staff. In order to avoid the gap left by Michael Gardam's absence during the SARS response, we recommend setting up a system of deputy leadership, should Michael's services be needed at the Corporate Command Centre in future. Maintaining the leadership function in a future crisis should ensure that the skills of the infection control team are effectively leveraged throughout the organization[3].

[3] At time of writing, this recommendation has been addressed with the appointment of Dr. Sue Lim as deputy leader of the infection control team.

Theme #2: STRUCTURE

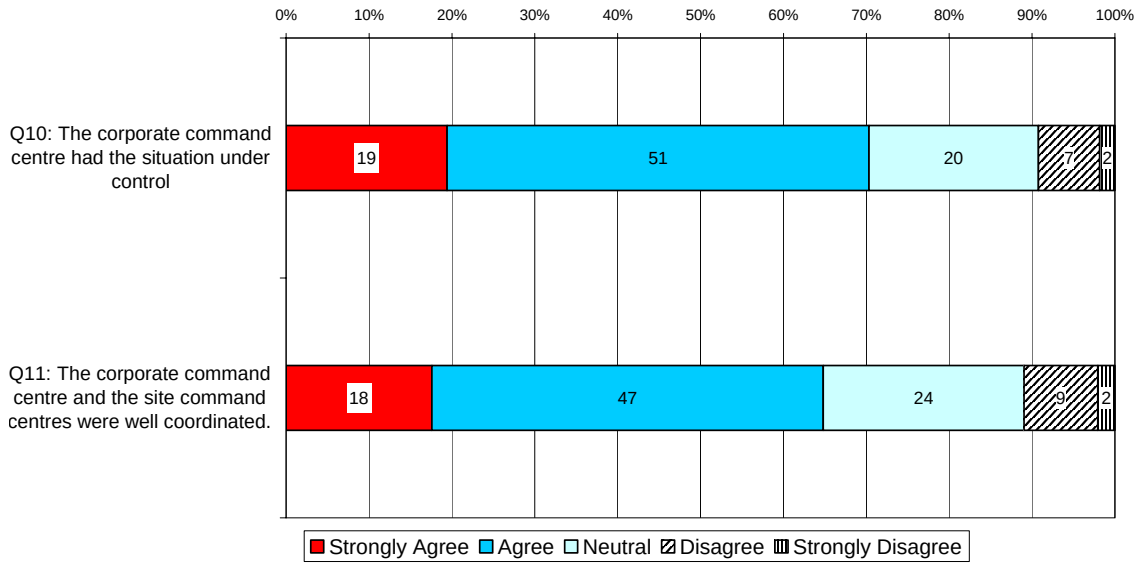
This section analyzes the effectiveness of the corporate and site command centre functions, as well as the roles within each.

1. Emergency Response Structures: Internal

The effectiveness of the command centre structures in providing leadership to the staff at UHN was reflected in the responses to the survey presented in Graph 4 below. For question 10, ("*The corporate command center had the situation under control*") the combined total of "Strongly Agree" and "Agree" is an impressive 70%. This shows that staff throughout UHN had confidence in the ability of the corporate command centre to handle the crisis. No significant differences appeared when the answers were analyzed by site and by role of the respondent.

For question 11, (*"The corporate command center and the site command centers were well coordinated"),* the combined total of "Strongly Agree" and "Agree" for this question is 65%. Although this number is the second lowest result (when looking at all questions), it is important to note that in absolute terms it is still positive, and supports the conclusion that staff had confidence in the command centre structure.

Graph 4: Effectiveness of corporate and site command centres



What worked well:

- Site and corporate command centres were set up in a timely fashion. Less than 24 hours passed from the time the premier called the Code

Orange (March 30) to the time that Colin Smith had the site and corporate command centres up and running (March 31).

"So, I think the University Health Network did a really great job in getting the right people at the table to deal with the problem immediately."

-- Manager, TGH

- The corporate command centre centralized and coordinated information and decision making for all of UHN, providing consistency and reassurance.

  "It was nice to have one central number that you could call to get people that have the most current information. I think they did a really good job and I thought they did have the most current information."

  --Manager, TGH

- There were few, if any, competing sources of information about the handling at SARS within UHN. As described in the previous point, all information about what to do to respond to SARS originated from the corporate command centre. No other persons or groups crafted messages based on information that had not passed through the centre.

  "…the fact that the communication came from Tom Closson, and only Tom Closson. There was a very clear decision early on that Tom was the guy that was sending out the e-mails every day."

  -- Physician

- Users found all command centres to be responsive: Clinical experts and organizational decision makers were easy to access. Having clinical expertise in infection control available almost 24/7 was not, it appears, the intention from the beginning. However, because Michael Gardam spent a great deal of time with Tom Closson and the Corporate Command Centre team, he ended up staying there throughout the first days of the crisis, and quickly realized the value in being easy to locate.

  "I had a great deal of access to experts."

  -- Susan Robinson, Nurse Manager, TGH

- Daily conference calls were on a firm schedule and included every person that needed to be involved with SARS-related issues. Aside from being inclusive, since the timing of the calls was the same every day, managers knew when to expect their update and could plan accordingly.

  "They [conference calls] were effective. There was a structure to them around what the key areas were that needed to be covered and that was consistent."

  --Director, TGH

Areas for improvement:

- After-hours access to information was challenging, particularly site specific detail. Site command centres worked regular hours; after-hours problems had to be referred to the corporate command centre which worked 24/7. Since many of these issues that came to the Corporate Command Centre were actually site-related, it was difficult for the central staff to respond effectively. For example, the centre would not be aware of the location of supplies at each of the sites, should nursing call for replenishment.

  "It was difficult to keep up with site specific information, since in many cases the sites were doing something different than the centre. I think it would have been better to have site specific resources after hours."

  --Manager, Corporate

- There was some confusion between front door screening areas and site command centres. A large amount of coordination had to occur between the site command centre and its respective screening area, particularly when the restrictions on visitors were relaxed.

  "There was a lot of miscommunication about things (e.g. patient visiting hours, number of visitors, how visitors and patients were being identified as allowed to come into the hospital)."

  --Allied Health Professional, TWH

- Staff involved with the SARS response consistently worked long hours from the moment the crisis began. As a result, many staff members were close to burn-out at the end of SARS I.

  "… we found that once we started to relax a little bit and then SARS II came in, you could see how fatigued people were. You can only work those hours for so long before people get worn out: we could see that in everyone, and we still see it."

  -- Director, TGH

- In-jokes and humor at Corporate Command Centre during conference calls gave the impression of disrespect. It was reported that staff at the Corporate Command Centre unwittingly distanced themselves from the other sites by, at times, laughing and referring to incidents that others on the call were not part of.

  "In some ways, the conference calls felt disrespectful. You were aware that there were perhaps a couple dozen people in one room, with many of us in satellite areas, alone or with two or three others. At best, you were aware of the laughing or joking in the room, and aware that you were an outsider. At worst, you could imagine negative body language, for example eye rolling, in response to comments or questions from the outsiders."

  -- Dr. Catherine Zahn, COO, TWH

Recommendations:

Similar to what is stated in the quote below, taken from a survey, we recommend that UHN build and implement a disaster-ready command centre structure as soon as possible, ready to spring into action if needed. By planning the response ahead of time, UHN staff will have the luxury of time to ensure that structures that worked well during SARS are preserved, and the areas of improvement will be corrected.

"Permanent emergency command centres should be put in place at the Corporate Office and each of the sites which can be operable within minutes with a designated team of people with pre-arranged functions."

--Allied Health Professional, TWH

The development of such a resource now, while the event is still in recent memory, will also help to motivate the project. In particular, the disaster-ready structure should include:

1. A command centre at the centre (corporate) and at each site, as implemented during SARS.
2. Protocols to ensure information flow within the organization starts at the corporate command centre and then travels to the sites. Not only does the corporate command centre need to have the most up to date information for decision making, it also needs to ensure that there is consistency in the instructions sent throughout the organization.
3. Clear protocols for after hours access to information at each site in addition to the centre.
4. Streamlined interactions between front door screening areas and site command centres. We suggest tools such as walkie-talkies to ensure screening staff have quick access to decision making resources.
5. A comprehensive staffing system for each command centre. The system should include the development of role descriptions for command centre/disaster staff, as per Emergency protocols. Specifically:
    a. The CEO needs to be the overall leaders of the crisis response, and the COOs should each lead their own site. All four of these roles at UHN should be physically present at their respective command centres during the Reactive and early parts of the Proactive stages in order to maximize accessibility

for staff and external partners. It is important to have organizational decision makers readily available.

b. Similar to the previous point, clinical expert(s), complete with back-up expertise, need to be assigned as resources to corporate and site command centres to ensure questions can be answered and decisions made quickly.

c. Senior managers with excellent interpersonal, problem solving and communication skills should take second-in-command and equivalent positions in each command centre. It is crucial that the command centre team be able to work effectively as a team while under a significant amount of stress.

d. The staffing structure should contain some redundancy to help avoid burn-out. Suggestions to achieve this might include having more than one person assigned to a role to allow for rotation.

   Staff need to be trained for each role. We also suggest that staff be trained in more than one role. This will allow flexibility and also support the need for redundancy. Training should be done:

   i. On an individual basis, so that staff are familiar with their role and its responsibilities.

   ii. At an organizational level (i.e. a mock disaster event), so that staff have an opportunity to perform duties as a team and within the command and control structure.

   iii. On processes for communication to ensure they are handled effectively. In particular, we recommend that more rigorous attention be paid to conference call etiquette. (See also Recommendation 1e, p.65)

2. Emergency Response Structure: External

This section explores issues relating to the impact of the emergency response structures of external organizations (e.g. the Ministry of Health, ambulance services, community care agencies, etc.) on the ability of UHN to manage the crisis.

Areas for improvement:

- Ministry directives were confusing. Long and convoluted, the copy caused problems for command centre staff that had to sift through to find the essential nuggets of information for UHN. In addition, as new directives arrived, it was difficult to determine what had changed since the previous directive. This meant that each subsequent directive was also time consuming to analyze. .
- Relations between the various areas of discharge and the community care agencies were inconsistent. There were no pre-arranged protocols for how to proceed.

  "The one criticism I have is related to the ambiguous communication between CCAC and the command centre RE: protocol for discharging patients. This stalled the discharge of many of our patients."

  -Allied Health Professional, TGH

  "UHN clarified policies with long term care facilities and community care organizations and tried to keep them in the loop, although this could have been done more effectively."

  --Manager, PMH

- Relations between the emergency departments and EMS were also problematic. Communication between the two groups was inconsistent, and emergency room staff were not aware of EMS' procedures surrounding SARS.

  "The EMS people were coming in, and we didn't know if they were getting screened. Did the hospital need to screen the ambulance attendants when they came in? That is just one thing…"

  --Manager, TGH

- There is no system in place to handle outsourced services during such a crisis:

  1. Consumer-oriented services, such as vending machines, bank machines, televisions, telephones etc.
  2. Care-delivery services, such as diagnostics.

> "Mt. Sinai provides PMH with some diagnostic services. Though they were asked to close, PMH still needed them, so suddenly PMH was left without a crucial service."
>
> --Manager, PMH

- There is no system in place to manage use of the tunnels that run between UHN, Mount Sinai, and Sick Kids.

> "It was challenging to coordinate decisions about the tunnels, since they go through Sinai and Sick Kids as well. Some thought needs to be given to tunnel management."
>
> --Director, PMH

Recommendations:

1. Develop a system of interpreting and communicating Ministry directives to UHN staff in a manner that is easy to understand and implement. (See also Recommendation 3 on p. 23). The system should include:
    a. Procedures to decide how to implement specific aspects of the directives.
    b. Procedures to make decisions on how to interpret and apply the directives from the Ministry and public health officials.
    c. Tools to clarify what is new and different from previous directives.
2. Establish protocols between community care agencies and UHN. Beginning with the corporate leadership of each, establish principles and then develop detailed protocols for frontline staff.
3. Establish protocols between EMS services and UHN. Similar to the previous point, corporate leadership from each organization needs to confirm general principles for the handling of infectious disease outbreaks. Once this is complete, detailed instructions are needed for staff.
4. Develop plan for outsourced services. We recommend that UHN review all outsourced services and determine which services are essential. For each essential service, either establish an agreement for how the outside company will maintain UHN's access, find an alternate source, or develop capacity to provide the service in house.
5. Establish protocols between UHN, Mount Sinai and Sick Kids concerning the use of the tunnels during infectious disease outbreaks.

Theme #3: SYSTEMS and PROCESSES

This section reviews the effectiveness of links between key players at the centre and each of the sites, as well as interactions between site leadership and their respective staff and patient populations.

1. Screening

This section refers to the screening function performed at the patient/visitor and staff entrances to each site.

What went well:

- Screening facilities were quickly set-up with principles of customer service in mind.

  "At TWH, there were tents set up at the entrances so that the screening could be done outside the hospital. The tents had stations that staff could go to to fulfill the requirements instead of standing in a long line. It also provided protection from the weather. The tents were set up the first weekend, ready to go by the morning of the 31st." --Physician, TWH

- UHN's ability to execute screening efficiently gave staff confidence that other areas of the crisis were also being handled well.

  "Screening - done well, and built confidence in the staff that they were protected." -- Nurse, TGH

- UHN staff were able to accommodate challenges in distinguishing those patients possibly sick from SARS, and those with other illnesses.

  "So it wasn't just that we had to keep out sick people, you have to decide at the door, has this person with a fever and a cough got a problem with their chemotherapy from their lung cancer, or is this a potential SARS patient? So we needed to have not only screening set up, but we needed to have high intelligence, medical differential diagnostic thinking, at the door." --Director, PMH

Areas for improvement:

- Screening tools:
  - The wording of questions on the screening protocol was confusing:

    "Well, did you see the screening tools? If A and B, pass. If A not B, no pass. It was very confusing if you were a novice screener." --Manager, TGH

- English was difficult for those staff without good language skills. Some staff were also illiterate.

  "The process of screening staff with written forms was challenging. They didn't realize that many of the staff do not read or write English. The forms caused them stress. Someone would have to help them answer the questions and write down the answers for them. After a while they allowed staff to take the screening forms home with them, so that family members could help them with it."

  --Director, PMH

- Format: Since it was a Ministry requirement, a huge amount of management time was spent designing, revising and copying the screening forms. An electronic version, developed during the outbreak, was still time consuming. It is unclear whether either version was needed.

  "Screening was very labour intensive, and needs to be reviewed. Was this a useful way to do it? If so, do we really need to have everyone sign a paper?"

  --Manager, PMH

  "An electronic form was not that much more helpful, since it was slow."

  --Director, PMH

- Staffing of the screening function:

  - Senior clinicians and managers worked shifts as screeners at the beginning of the response. Although this enabled them to understand first hand the issues as they arose during the crisis, and in some cases (as noted above) it was necessary to use clinical expertise to properly screen, it was not always clear that this function was the best use of their time.

    "We pulled managers that were working long-long hours to stand up at a door to do the screening. I guess in retrospect that could have been managed differently. I don't know that you need your managers out there doing that piece."

    --Manager, TGH

  - The supervision and training of student and volunteer screeners was inconsistent in quality. It appears that there were problems with proper and consistent practice.

    "Getting the students at the doors organized at the beginning was a bit slow. There were a few times at the beginning where I wasn't even asked for ID at the staff door." --Support Services Worker, PMH

    "Towards the end of the outbreak, there are many, many times that while we entered/exited the hospital from the staff entrance at TWH, the student screeners were sitting there, reading magazines, playing games, filling puzzles, etc."

    --Clerical Professional, TWH

- Many staff are concerned that screening practices are not being followed post-SARS, and would like to see more stringent controls in place.

  "Since people are now self screening I do not feel anything has changed. I notice that many people (employees as well as visitors) DO NOT use the hand rinses that are available at the entrances. Self screening is really what we have always been doing. I don't feel that it works."

  --Support Services worker, TWH

Recommendations:

As indicated in the conclusions above, screening is a challenging function. It is important as a first line of defense against something like SARS. In addition, as the first visible indicator for staff, patients and visitors of the infection control practices in place, it also serves to reassure those entering the building that the situation is under control.

1. We recommend that both the symbolic and operational aspects of screening be kept in mind when designating staff for the role, particularly at the beginning of an outbreak. Having physician and nurse leaders visible in the screening process has significant impact on perceptions of quality. Besides the importance of the function itself, it is a perfect opportunity to encourage and support front line staff.

   As the situation stabilizes, it may possible to introduce students and volunteers to the screening function. However, we advise caution in this area because of the symbolic function of the role, as noted above.

2. If this route is chosen, we recommend that volunteers and students follow a rigorous orientation and training program for the role. We also recommend strong management support to ensure optimum performance. To reinforce the professionalism that should be developed within this group, we recommend that some form of uniform should be developed for the screening role.

3. We recommend that the screening process have a role of its own - i.e. those performing it would not be responsible for other tasks, in order to reduce incidence of burn-out.

4. We recommend that screening tools and processes be reviewed. Although any future outbreak will never be exactly the same, it is likely that a screening function will be needed. Areas to cover would be:

   a. Wording – Is there a more user-friendly format?

b. Language – what other languages are needed?

c. Processes – Is there a more efficient process? Can technology assist?

We suggest that other hospitals in the downtown area be contacted for their ideas.

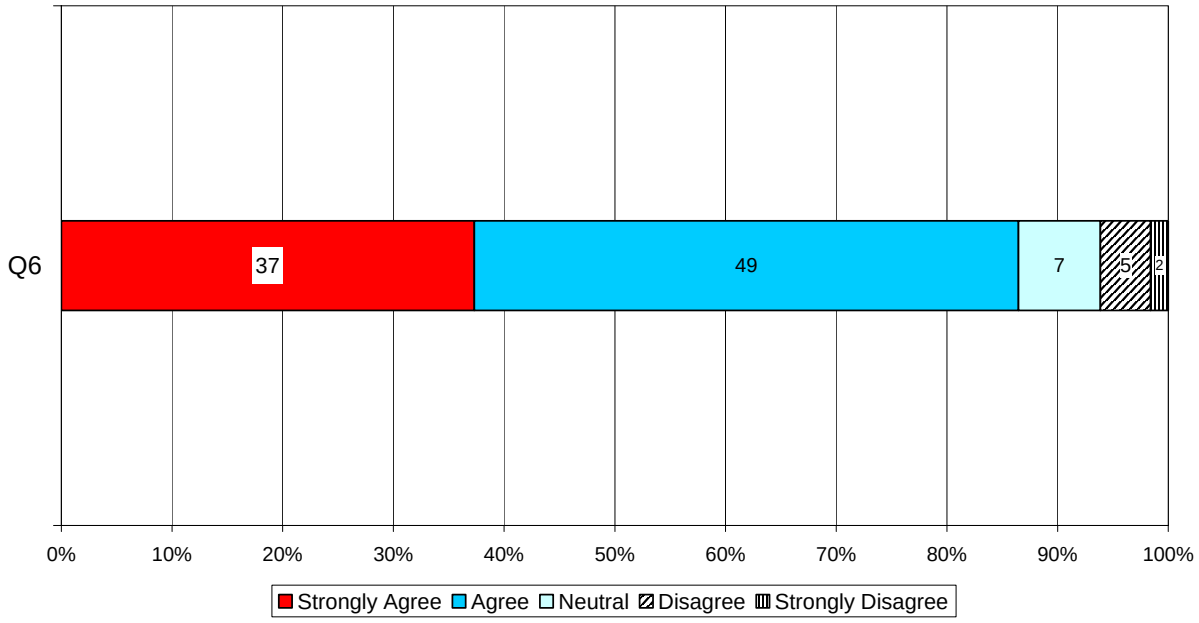
5. We recommend that UHN infection control leadership speak to the lack of adherence to proper screening practices post SARS, and explain repeatedly what is being done throughout the organization to address it – i.e. Explain that although it may appear to be the same hospital as before, it is not.

2. Infection Control Processes

This section refers to all efforts by management to establish and enforce protocols to protect UHN from SARS (excluding screening, covered in the previous section).

Question 6: *"I was told what I needed to do to protect myself against SARS."* had the highest positive response rate of any question in the survey: 85% of respondents either Strongly Agreed or Agreed with this statement. This indicates that the infection control team was successful in communicating their messages regarding personal protection throughout UHN.

Graph 5: "I was told what I needed to do to protect myself from SARS."



What worked well:

- Infection Control priorities at UHN during SARS were paramount and dominated all decision making. Before acting on any issue, Tom Closson would ask for input from Dr, Gardam, the infection control expert.

  "… he made it very clear to the organization that he was taking leadership advice [on infection control] from Michael."

  --Senior Manager, TWH

Areas for improvement:

- The leadership at UHN admits that day to day infection control compliance was not that good before SARS. Although good progress was made during the outbreak, staff are worried that practices will slip back to where they were before.

  "[Prior to SARS] we all became a bit complacent; we were not, in fact, following the guidelines for some infection control procedures. I don't think we're alone in this."

  --VP, Corporate

- Although it is likely that many different groups had members that did not adhere to infection control guidelines, the physicians were singled out over and over again as a group that often did not cooperate. This was distressing for staff.

  "We need to find a way to communicate to the doctors that they have to follow the same rules that the rest of the organization has to follow. That we are in this together. "

  --Manager, TWH

- Directives regarding infection control were confusing. In some ways this was inevitable because the disease was unknown. As new information emerged the methods for personal protection had to change.

  Besides the confusion originating from the frequent changes to Ministry directives, staff were anxious about differences in infection control protocol between sites, and between UHN and other hospitals. It seems that staff were constantly comparing their techniques. If there were differences, staff wondered which was more correct.

  "Precautions practices could have been more consistent and standardized within all UHN sites."

  --Nurse, PMH

- As much of the technique was unfamiliar to staff, many indicated a need for training.

  "A refresher course on isolation technique would be worthwhile - many breaks in technique were observed."

  --Nurse, TGH

- The Occupational Health department at UHN did not have sufficient resources to handle the demand for its services during SARS. Since previous crises had not directly impacted the health of staff, Occupational Health were not prepared to perform a front-line role. For example, normally at work between 8am and 4pm, Occupational Health staff were now needed between 7am and 7pm.

  "Occupational Health became a key player, since it was their role to clear staff that had symptoms, and the Occ Health nurses were not ready or comfortable to be

> pushed into such a high pressure role. They also needed to move from their location in the basement and establish a negative pressure room."
>
> --Director, PMH

Recommendations:

1. Just as was the case during SARS, in any future infectious disease outbreak at UHN the managers of the crisis (the CEO, the COOs etc.) will not possess specific clinical knowledge about the disease and will need to rely on clinical experts to ensure decisions are effective. We recommend that UHN formalize the role of the clinical expert (i.e. the role played by Michael Gardam) to ensure that in the future, he/she has the necessary influence over decisions concerning the proper response.
2. We recommend that physician leaders review the issue of non-compliance within their profession and formulate strategies to reduce its occurrence. Though there were other groups that did not comply, and it would be best to work on ensuring everyone has good infection control technique, the physicians are a priority since their behaviour has such a huge impact on the staff who observe them.
3. We recommend that UHN take care to ensure communication surrounding infection control directives is as consistent as possible to avoid confusion. (See also Recommendation 2a, p. 62)
4. In addition, despite messages from the infection control experts that two (or more) ways can be correct, staff spent a huge amount of time and energy worrying about whether one technique or the other was the proper one. Thus, we recommend that efforts be made to standardize infection control techniques at UHN wherever possible, particularly between areas that are obvious places where staff would compare (e.g. the emergency at the General vs. the emergency at the Western).
5. We recommend that UHN provide ongoing training in infection control technique for a wide range of individuals in the organization. At the same time, UHN's infection control team needs to design a disaster-ready training program that can be put in motion once a particular outbreak occurs and the demand for training is much greater.
6. We recommend that UHN conduct a gap analysis within the Occupational Health departments at each site to identify exactly which resources and what training they would need to perform what was demanded of them during SARS. Since many Occupational Health nurses were uncomfortable with playing a front-line role during the crisis, the review needs to identify what is needed in terms of crisis response skills, attitudes and competencies in addition to pure numbers.

3. Visitor Policy

This section explores issues surrounding UHN's interactions with visitors during the SARS crisis.

Areas for Improvement:

- Although the leadership at UHN had the best of intentions when designing it, the visitor policy implemented during SARS was not satisfactory.

  "… our intention was to keep as many people out of the hospital as possible, for their own safety; in retrospect the impact on patients, families and visitors was too great."

  -Tom Closson, CEO, UHN

  - Patients and families had difficulty with it because they were unable to provide each other with support during a stressful time.

    " My one criticism: there were cases in which terminally ill patients were not allowed to have family members, even spouses visit. It is tragic that many of these patients spent the last weeks and months of their lives alone and lonely. Family members were not allowed to visit unless death was 'imminent'."

    --Allied Health Professional, TGH

  - Staff had difficulty with it because they had to compensate for the care-giving role that many visitors perform for patients. This was particularly true at PMH.

    "Problem was, it was a tremendous problem for us [no visitors], because of the number of folks who don't speak English, and the number of infirm folks coming here for complex visits. So what we had to organize was a transport system and a patient accompanying system."

    --Director, PMH

- The issue of the visitor policy was also challenging from an organizational perspective, since it was difficult to keep track of which site was doing what, especially once sites started implementing their own versions of the corporate perspective on visitors, and explain to the public why there were discrepancies. This task was made more difficult by the fact that sites did not always alert the centre if they made changes to the visitor policy.

  "Since managers were under stress, they did not tend to think about the impact their actions and decisions had on the other sites. Once sites made changes to the visitor's policy, it was possible for someone to be denied visiting at one site but allowed at another. This caused frustration and confusion with the public."

  --Supervisor, Corporate

Recommendations:

1. We recommend that UHN review the visitor policy that was implemented during SARS at each site and develop clear guidelines for the next infection control crisis.
2. Since the visitor policy is of such importance to the public, we recommend that sites continuously brief the central Public Affairs staff on any changes to it, complete with background reasoning to ensure that UHN corporate is able to respond appropriately to any media or public enquiry.

4. Staffing

This section focuses on the challenge of managing staff effectively while still protecting them from SARS and implementing provincial directives.

Areas for improvement:

- The decision to distinguish between "Essential" and "Non-essential" staff was problematic. "Non-essential" staff stayed home with pay but felt guilty about not contributing to the response. "Essential" staff were not paid any more but took on stressful roles and spent long hours fighting the disease. "Non-essential" staff felt left out and stigmatized; "essential" staff felt over-burdened.

  In addition, many staff were confused about which category they fell under.

  "There was significant confusion and significant inequity in terms of which staff were to stay home and which staff were to come in. In my opinion this was very unfair and it was viewed as some staff receiving a paid vacation while others were working harder to help out on site."

  --Allied Health Professional, TGH

- UHN did not have a policy to address the problem of staff who work at more than one site, as well as staff who work at more than one institution.

- UHN's sick time policy encouraged employees to come to work sick, since there are penalties for taking sick days.

  "...the expectation of the organization was you come to work even if you are dragging your feet and sick as a dog. I mean we had policies in place that said if you were sick more than three times in six months, you know, after so many years of that we are going to fire you. Now we are turning around and saying if you are sick stay home. Employees are very confused about that."

  --Director, Corporate

- The IT department dispatched teams of staff to each site to provide ongoing IT expertise throughout the crisis. This approach worked well, and sites would have liked to have had access to other corporate departments through a similar process, particularly Human Resources.

  "An advantage to being physically separate from the UHN corporate centre was that there was opportunity to act quickly and independently, making choices that were influenced by site activities, human resources and other pressures. The down side was that various corporate staff groups were not distributed to the three sites where we could have used their help."

  --Dr. Catherine Zahn, COO, TWH

Recommendations:

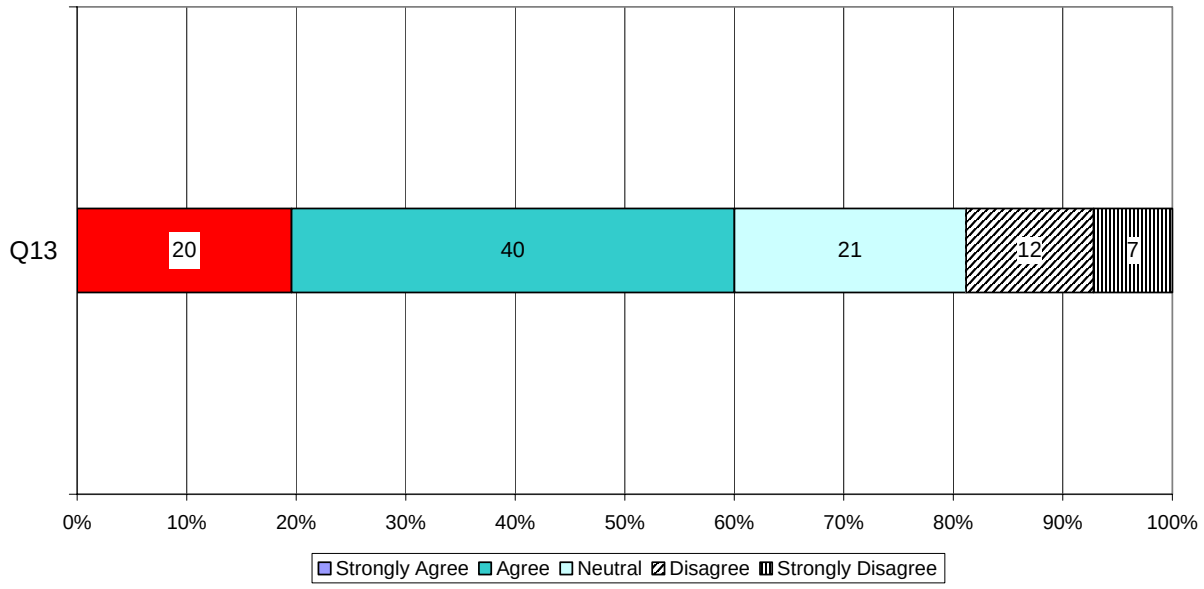
1. We recommend that UHN avoid labeling employees as either "Essential" or "Non-essential." Since roles and back-up roles for emergency response (see also Recommendation 5 p. 30) will be developed, and some staff will be assigned to ensure the regular business of UHN continues, (see also Recommendation 1 p. 24) each staff member should know ahead of time whether he/she should come to work in a crisis situation. Such a structure will also ensure that there is equal distribution of tasks.
2. Despite UHN's move toward hiring more full-time staff, there will always be some staff that work at other institutions besides UHN. We recommend that UHN develop procedures to address this type of employee.
3. We recommend that Human Resources and Occupational Health review UHN's sick time policy to remove incentives to report to work sick. At the same time, we suggest a moderate approach, one that retains some provisions to ensure that staff are not taking advantage of the policy and staying home though well.
4. We recommend that other corporate resources develop a plan for deployment of their staff to each site, similar to what was done in IT.

5. Recognition and Compensation

This section explores staff perceptions surrounding recognition and compensation for performance during SARS.

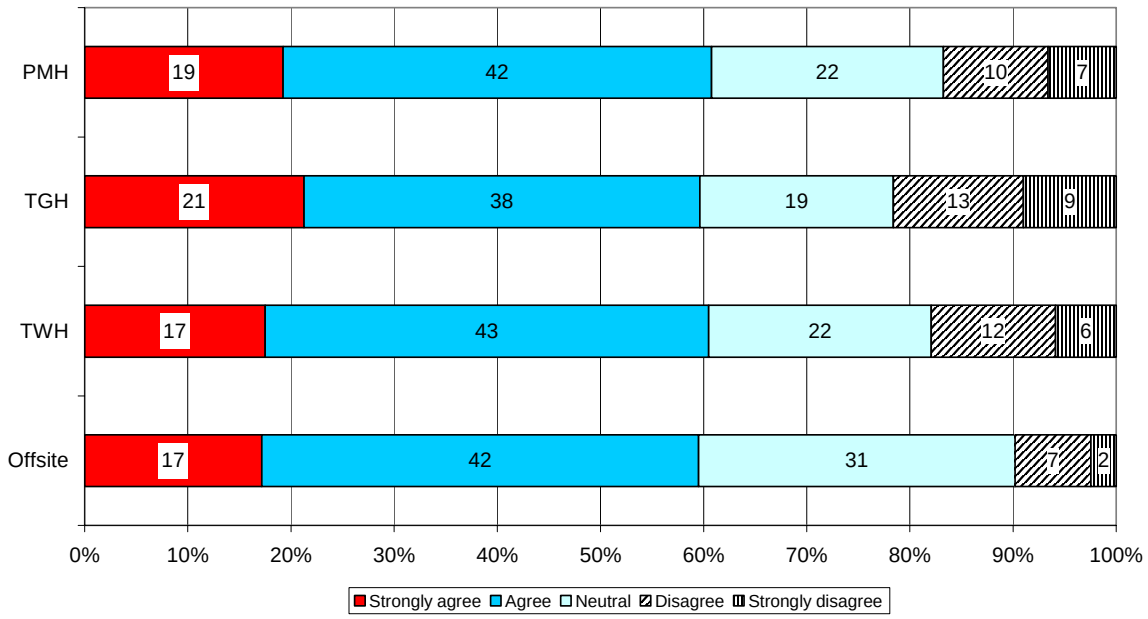
As indicated in Graph 6 below, the combined total of "Strongly Agree" and "Agree" for question 13 (*"I feel adequately recognized for my efforts during SARS"*) is 60%. While it is important to note that this number indicates that approximately 2/3 of UHN staff feel that they were adequately recognized, it is the lowest result of any question on the survey, and thus warrants some attention.

Graph 6: "I was adequately recognized for my efforts during SARS."



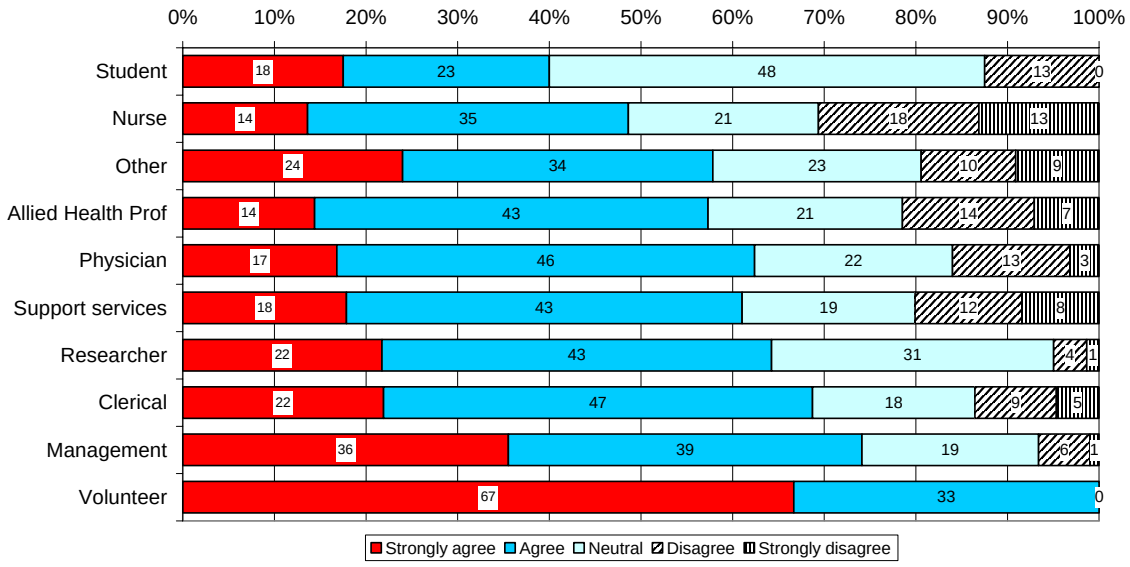
As illustrated in Graph 7 below, there is almost no difference in how each site responded regarding recognition.

Graph 7: "I was adequately recognized for my efforts during SARS." according to site



However, there are differences between roles, as shown in Graph 8: While management employees generally appear to feel recognized, other groups, particularly nurses, showed lower levels of agreement.

Graph 8 "I was adequately recognized for my efforts during SARS." according to role



Areas for improvement:

- Recognition and compensation were the areas where the most dissatisfaction was expressed in the survey, as measured by the number of negative comments we received on the subject (see Appendix J). Many staff from a variety of groups throughout the organization do not feel adequately recognized:

  "Very frustrating indeed to feel totally under-valued and under-appreciated by this institution while actively managing the care of the sickest of the sick SARS patients (March thru August)."

  -- Nurse, TGH

  Key points:

  a. Concerning recognition:

     - Efforts to recognize staff that had cost implications were not available to everyone, so some people felt overlooked.

       "I was very upset to hear that 800 people had dinner at the Royal York with only a handful of people who were actually on the door."

       --Nurse, TGH

     - Efforts to recognize staff that were inexpensive, such as the certificates, appeared to be distributed without individual attention. As a result, they had the reverse effect to what was intended.

       "Though the gesture was well meant, those certificates sent to us internally in the large envelopes honestly seemed like a poor use of paper. All those trees! And, they were sent to staff who had not worked at the hospital for years!!"

       --Allied Health Professional, TGH

  b. Concerning compensation:

     - UHN staff, nursing staff in particular, saw that other organizations raised the salaries of those involved in the crisis and wanted the same treatment.

     - UHN staff also realized that other organizations were giving days off with pay to their employees and wanted the same treatment.

       "Why did RNs at other hospitals receive higher pay or additional days off work while we got an insulting certificate in the mail?"

       --Nurse, TGH

Recommendations:

Recognition is important and yet challenging to deliver effectively. As demonstrated by the conclusions above, if some staff receive recognition and others do not, those staff feel overlooked. At the same time, if everyone receives the same type of recognition, such as the certificates, the value is diminished.

As such, we recommend the following:

1. Locally-generated recognition projects, endorsed by senior management and supported by human resources staff. Each staff group could be encouraged to design their own awards of recognition, using ideas and tools provided by human resources. A representative from senior management, such as Tom, could come to the unit or department to distribute the awards. This would ensure that the awards were relevant and meaningful.

2. Leveraging atypical methods of recognition that have already been successful at UHN.

    a. For example, MFPTV (Mary Ferguson Pare TV) has been a huge hit with nursing staff, and is, in many ways, a form of recognition. We recommend that UHN replicate this format in other areas.

    b. Secondly, it is clear that Tom's voice message to individual managers during the crisis was extremely well-received. We recommend that this technique be employed more often, and by other key leaders.

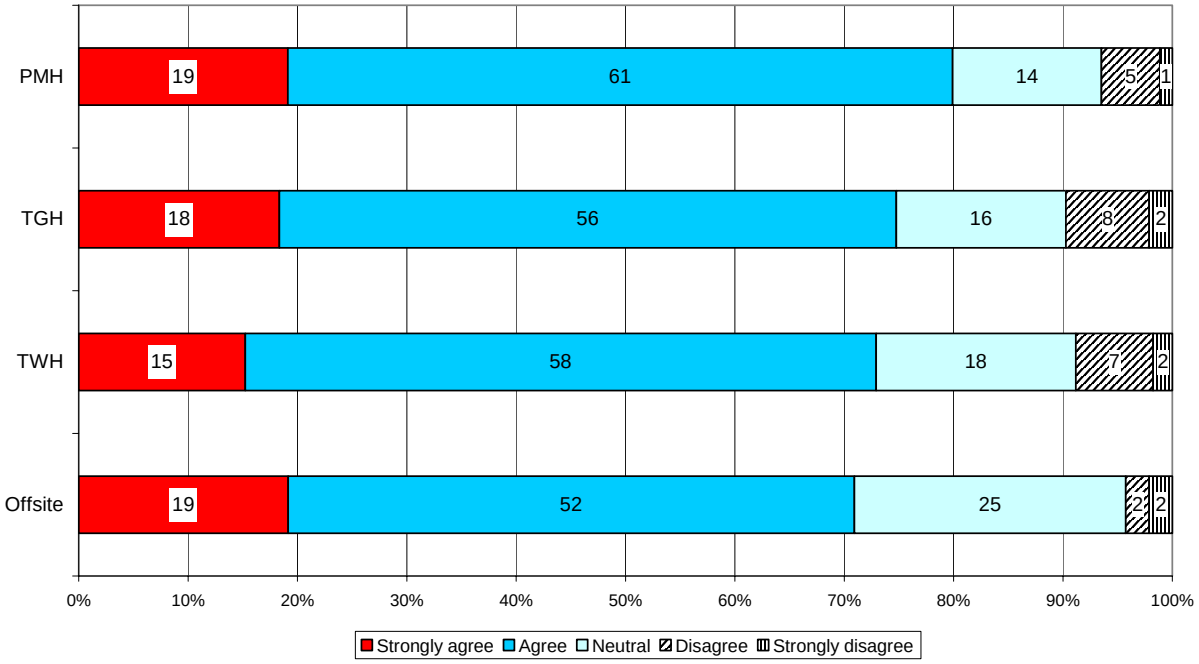
3. Avoiding UHN-wide recognition projects that are delivered without context, such as the certificates.

4. Transparency regarding UHN's position on compensation as compared to other organizations.

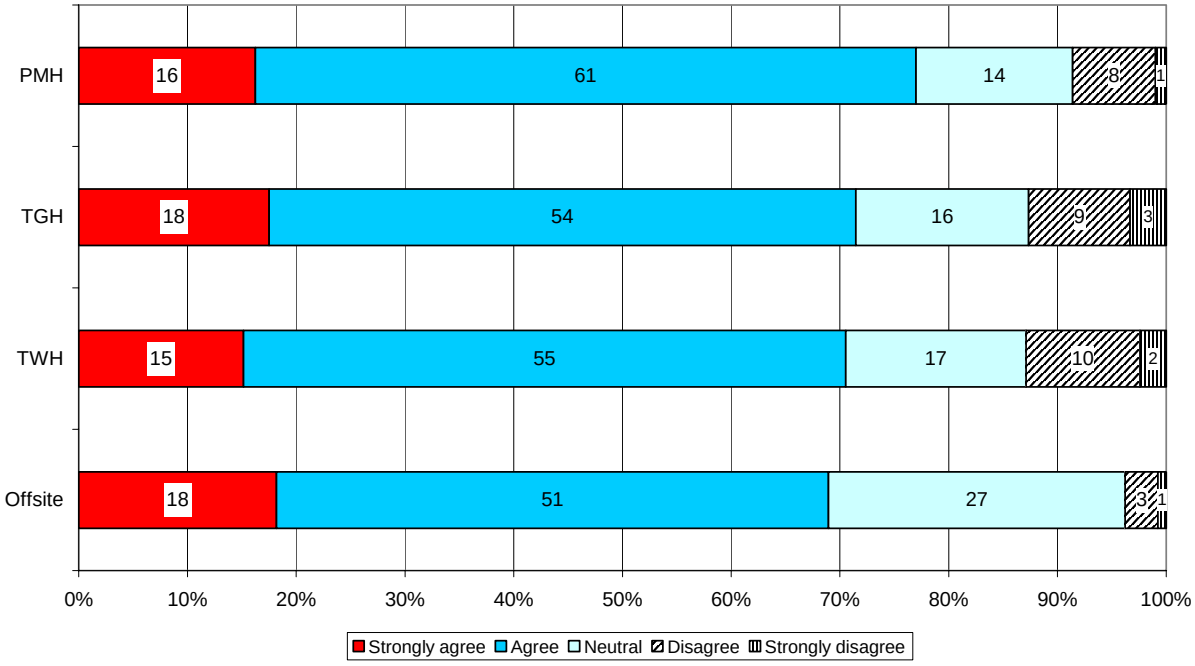
6. Shut down and Re-opening of Services

As noted on page 70, we included these questions to expand our understanding of the closing and re-opening processes. Some concern had been expressed in the interviews, and we wanted to test the wider audience. Based on the results shown in Graphs 9 and 10 below, (74.5% Strongly Agree + Agree, on average), staff are supportive of the processes used by each site to re-open services to patients. Results for question 15 (72% Strongly Agree and Agree, on average), referring to the re-opening to visitors, are slightly less positive, but not enough to cause concern.

Graph 9: "My site handled issues related to re-opening of services in a timely and effective manner. " according to site



Graph 10: "My site handled issues related to re-admittance of visitors in a timely and effective manner." according to site



Areas for improvement:

- Due to the fact that each site at UHN serves a different patient population, clinical services at each site were shut down to varying degrees. Aside from the emergency department, TGH was almost completely shut down, whereas many services at the Western continued to function. PMH found itself somewhere in the middle, and continued some of their services, particularly those aimed at patients in the middle of a course of treatment.

  The Ministry directives concerning which services should be shut down and which should continue were vague. There was no protocol in place to address this question, and as a result, each site used its own system to make these decisions.

  "it was left to the discretion of the on-site management team of our three sites-Western, General, Princess Margaret-as to what constraints to continue in the opening-up of the hospital after we had a handle on what the crisis was about. So there were-each of the three sites opened at a different rate, under different rules…"

  --VP, Corporate

- Although each site reduced/restarted services at different rates, the overall shut-down at UHN was too drastic.

  "… our intention was to keep as many people out of the hospital as possible, for their own safety; in retrospect the impact on patients, families and visitors was too great."

  Tom Closson, CEO, UHN

- As a parallel to the previous points, the restart of services at UHN was poorly coordinated. As there was no system in place to assist with decision making and process around this issue, the restarting function occurred in an adhoc manner throughout UHN.

  "it is actually quite easy to shut things down - you just close the doors and explain to everyone that there is an emergency - but it is much more difficult to ramp up again. "

  -- Dr. Wayne Gold, Infectious Diseases, TWH

Recommendations:

1. We recommend that UHN review the processes used during SARS at each site to make decisions concerning which services to shut down and which to continue. Using these examples as a starting point, we suggest that UHN establish a set of common principles to help unify the UHN approach to this challenge. Whatever the result, it should still allow for site autonomy on this issue.

2. We recommend a similar approach be taken with regards to a strategy surrounding the restarting of services. Ideally, the language of each should be similar.

7. Supplies and Fit Testing

This section reviews the procurement and distribution of SARS-specific supplies. Also covered are issues surrounding the process of checking staff to ensure their masks were air-tight, known as fit testing.

What went well:

- Since infection control precautions for SARS required equipment not normally carried by UHN, procurement of supplies became an important issue. Suddenly, UHN had to ensure that it would not run out of key pieces of equipment such as masks, gowns and gloves.

  The Central Stores department leveraged key relationships with suppliers to ensure that UHN received at least a bare minimum of equipment.

  Central Stores was involved in the daily 3pm conference call, reporting in on the level of supplies and ensuring that each area had what it needed.

  Aside from responding to staff requests, the team in Stores worked proactively and delivered quantities of SARS-related equipment to the units so that staff would have supplies on hand.

  Stores also researched and brought in specific pieces of equipment to assist the nursing staff, such as stick-on lenses for the visors to replace bifocals.

  "Our department has excellent relationships with vendors, and this was essential for obtaining stock. We also have excellent relationships with the nursing supervisors, which was key to the success of our ability to distribute the supplies equitably, since at times there was not enough of a certain item to let each area take what it wanted."

  Manager, TGH

- Since there were shortages in the city, UHN was not able to obtain a variety of models of each type of equipment. In particular, there were only a few types of masks available. Though uncomfortable, the masks were, for the most part, satisfactory.

  However, once the process for fit testing began, in May, many staff were told that the model of mask they had been wearing did not fit, and other models were suggested. These other models were usually not available, so staff continued to wear what they had been wearing before. This caused anxiety, since they thought they were no longer protected, and fueled many complaints received in the survey, similar to this:

  "I was frustrated by the fact that not all of the masks were made available for staff. As a result some staff were left wearing masks that did not offer the protection that they needed. This did not help to make me feel like the corporation was doing its best to keep my safety a priority."

--Allied Health Professional, TWH

- Although directed by the Ministry, fit testing was not needed since SARS was a droplet-transmitted disease. As Michael Gardam repeatedly pointed out to the Ministry, fit testing is only relevant when dealing with an air-borne disease. As such, the time and anxiety created by the fit testing process was unnecessary.

Recommendations:

1. Since they were so successful, we recommend that techniques used by Central Stores to procure and distribute supplies be documented to ensure they can be replicated in future crisis situations.
2. In addition, some attention needs to be paid to ensuring that supplier relationships are well-maintained at all times, as these were key to the success of UHN's ability to obtain supplies.
3. Although not necessary for SARS, fit testing may be necessary in other types of infectious disease outbreaks. We recommend that UHN spend time preparing for this by setting up suppliers for a wider variety of equipment.
4. The case of fit testing is an example of a Ministry directive that did not make sense and went against UHN's infection control expertise. In future, with the interests of staff as a priority, we suggest that UHN exercise caution in the manner in which they execute these directives.

Theme #4: COMMUNICATIONS

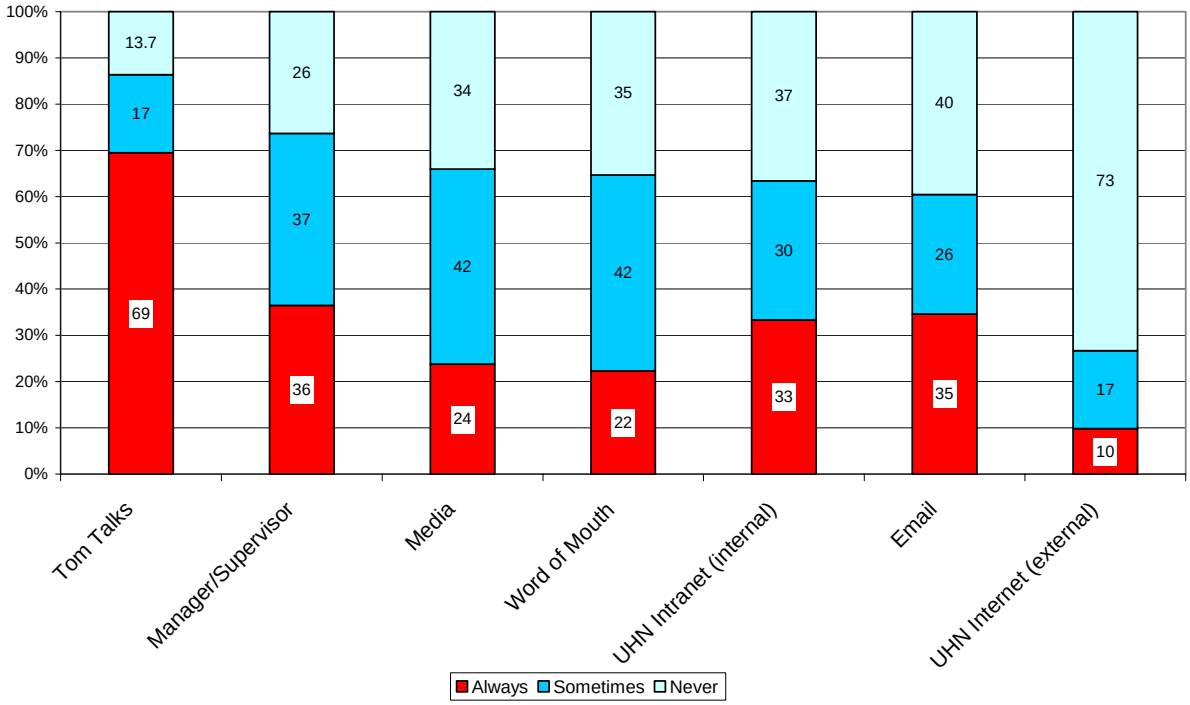
This section pays particular attention to the communication tools, methods and content that UHN's SARS leadership used to inform, connect with, and hear from staff, management, and external players during the crisis.

1. Ability to Inform

This sub theme is focused on how well the SARS team was able to disseminate key information about the crisis to all staff, management and physicians.

Taken from Question 17, the data in Graph 11 shows responses to the statement "During SARS, I received my information from:" and is ordered according to the combined percentage of respondents that answered "Always" and "Sometimes" (red and dark blue bars).[4]

Graph 11: Q17-During SARS, I received my information from...



There are four important conclusions from this graph for this sub-theme:
One, a variety of information sources was used by UHN employees. Two, the

[4] For graphs with the legend "Always", "Sometimes" and "Never", the "Never" category also includes those who did not check any category (non-response).

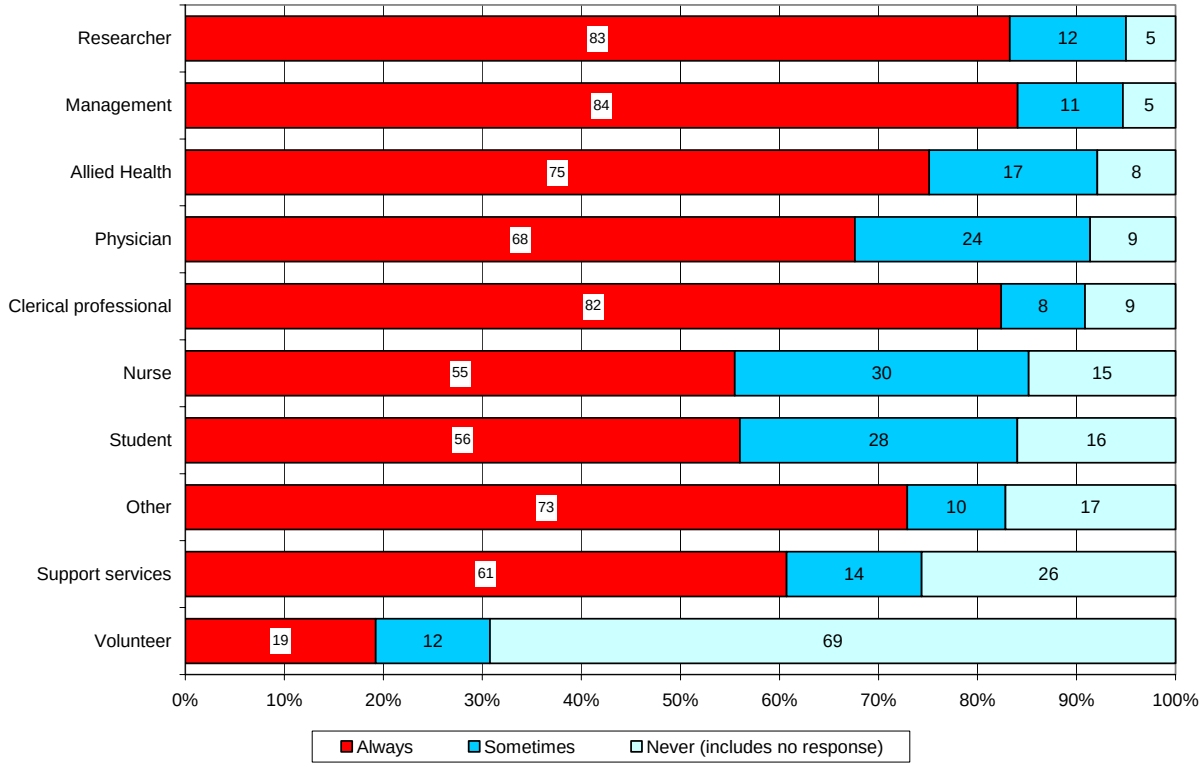
information sources that dominate the results (looking at the "Always" figures), Tom Talks, Manager/Supervisor, Internet and Email, originated from UHN. This shows that staff were most often getting their information through channels over which management had influence. Three, "Tom Talks" dominates every other information source. The number of people that checked off "Always" to Tom Talks, at 69%, is just under double the amount for the next three categories: the Manager/Supervisor (36%), email (35%) and UHN Intranet (33%). This indicates the huge success of this tool to communicate with staff. Important to note, however, the discrepancy between the results for Tom Talks as compared to those for the Manager/Supervisor. We were surprised to see such a gap between the two sources, and thought that since the Manager/Supervisor should be able to provide much more specific information for a particular staff member (as opposed to Tom Talks, which provides information at an organizational level), the results would have been much closer together.

To build on the discussion of the success of "Tom Talks" as indicated by the previous graph, we thought it would be interesting to show the responses according to role at UHN. Graph 12 is also ordered according to the combined responses "Always" and "Sometimes" (red and dark blue bars) and clearly shows that the piece was read by the majority of every role from support services to physicians.[5]

In addition, we note that the top four roles reading Tom Talks (researcher, management, allied health and physician) constitute the most highly educated staff members at UHN, even though the language and style of the piece was pitched to the general UHN audience.

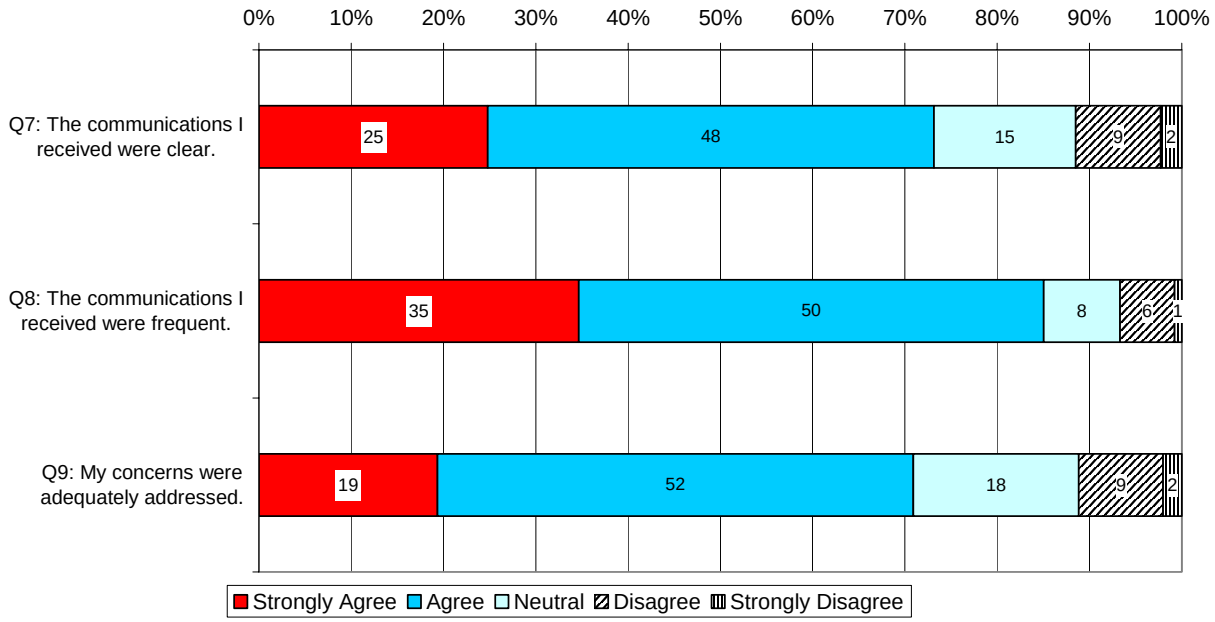
[5] The volunteer group is the exception, however the sample size of this group is small (26 respondents).

Graph 12: Q17 "During SARS, I received my information from Tom Talks." according to role



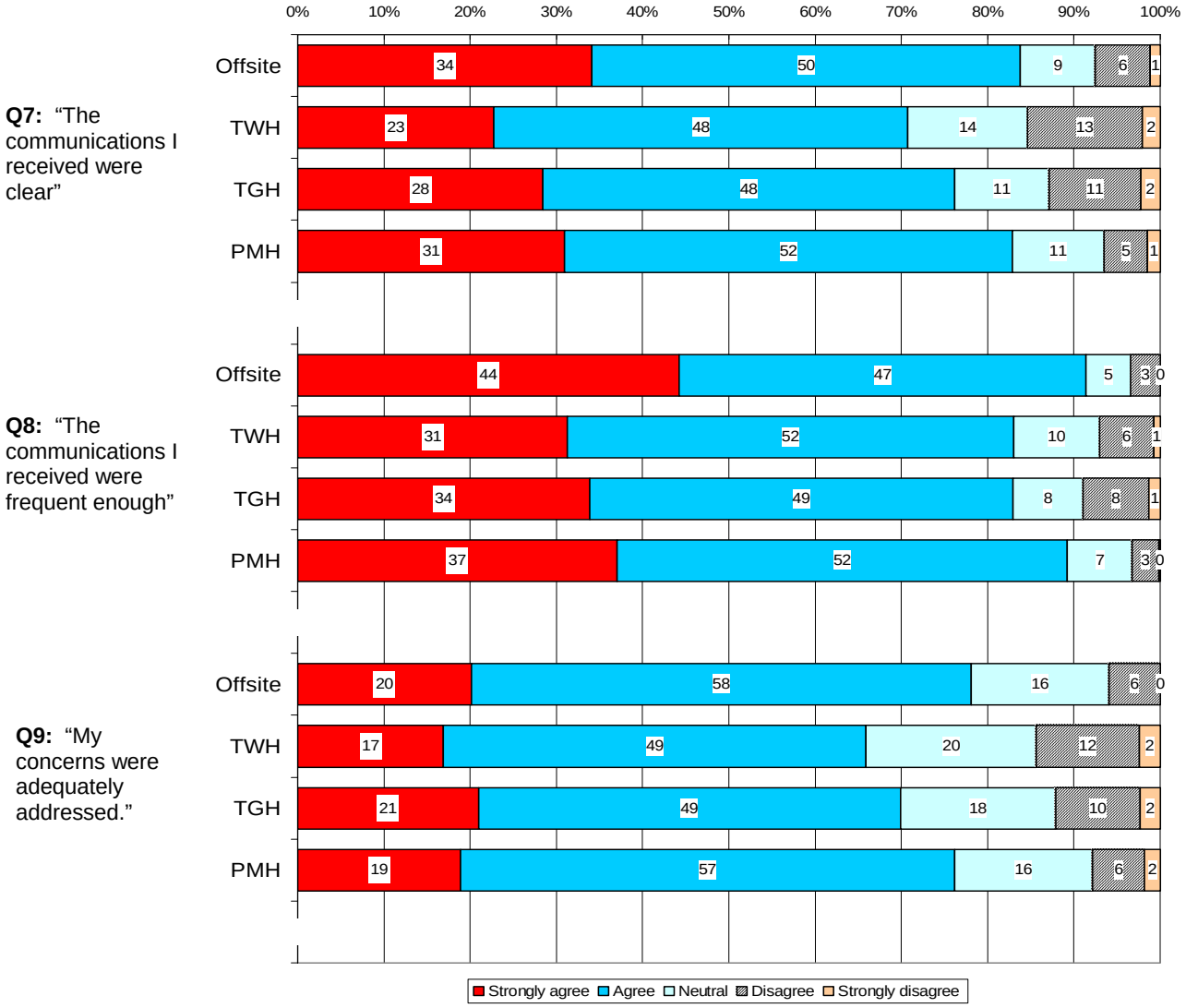
Responses to Question 17 indicate where UHN staff went for their information. One could also use this information as an indicator of quality, since it is reasonable to conclude that if a UHN staff person used a certain source, they were also satisfied with its quality. However, questions 7, 8 & 9 address quality directly and are thus a more reliable indicator. Note in Graph 13 that over 70% of respondents indicated that communications were clear and that their concerns were adequately addressed. Above all, approximately 85% of respondents thought that communication was frequent enough.

Graph 13: Quality of Communication



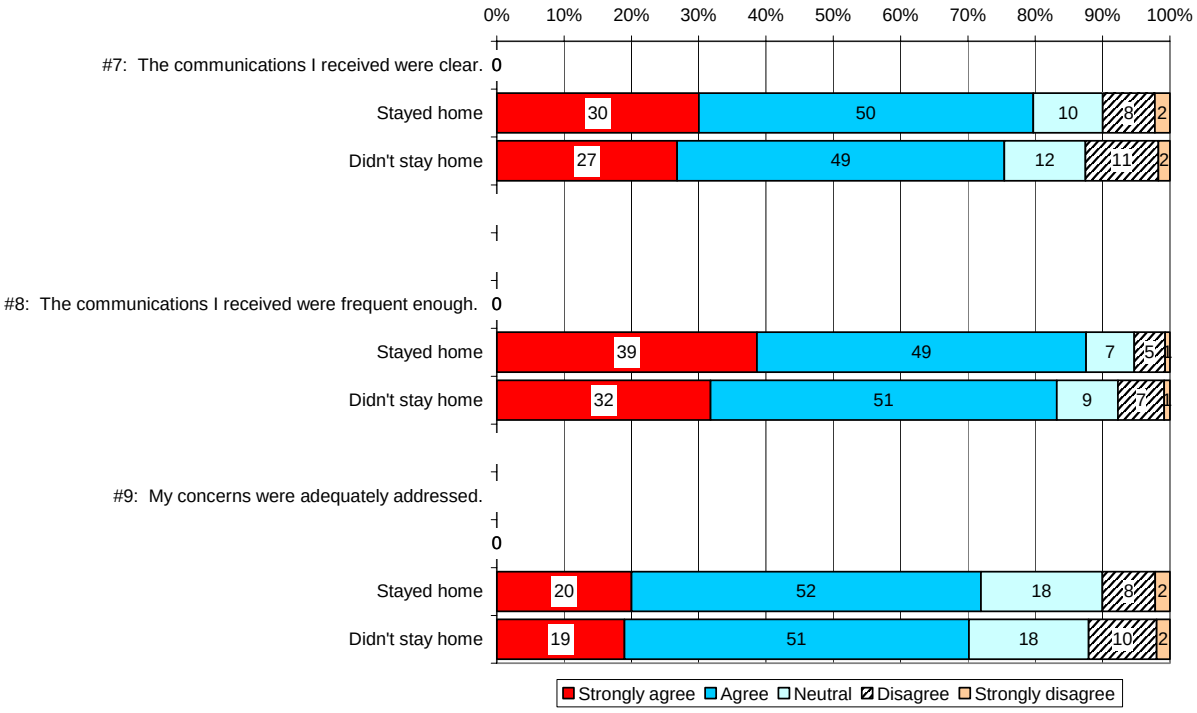
Since much of the communication that occurred during SARS was site-specific, we analyzed the data for questions 7, 8 and 9 according to site. As indicated in Graph 14 below, there is little difference between the sites. If anything, the staff who work offsite were slightly more positive about communication.

Graph 14: Quality of Communication according to site



As indicated on page 45, question four ("I was asked to stay away (for at least one day) during the SARS outbreaks") was added to the survey to check for differences in the experience of those staff who were those labeled "non-essential". Contrary to what we were expecting, Graph 15 shows that those staff that stayed at home at some point were more positive about the communication they received than those who remained at UHN. This is likely due to the ability of staff to access the UHN Intranet (including Tom Talks) from home. It could also reflect that those at home would have had more time and likely a calmer, less anxious environment in which to read and digest information.

Graph 15: Quality of Communication according to those who stayed home vs. those that did not



What worked well:

- UHN's ability to use various communication methods to inform its staff during SARS was exemplary.

  "We have some spots where our management was outstanding. Communication being number one. Under the leadership of Gill Howard in communications, and with Tom's philosophy of detailed communication and his style of communication, we were outstanding in that area of performance."

  -- VP, TGH

- On the whole, leaders and support staff at site and corporate command centres were seen as effective communicators during SARS.

  In particular:

  - Command centre leadership was committed to its own structures for information gathering/distribution and decision making, in as transparent a manner as possible. Formal lines of communication and decision making were used effectively, resulting in few "hallway end-arounds" and second-guessing.

    "And so, everything that the Command Centre knew, we were given access to that knowledge. So that was absolutely critical and there wasn't any planning inside quarters, you know?"

    -- Manager, TGH

- The trust that UHN management had built up prior to SARS, particularly the trust surrounding Tom's leadership, set the groundwork for an effective communication strategy during the crisis.

  "Tom's leadership style and his communication style has been in evidence in the organization for the period of time that he's been here. I think that that ground work allowed us much greater ability to move pretty quickly."

  -- VP, Corporate

- As indicated by the data from the survey described above, "Tom Talks" was extraordinarily successful as a method of informing staff during SARS. The main reasons for the success are:

  - The piece had been established as a trusted source of information before the outbreak. (Please also see the preceding point above).

  - Tom Talks was a two-way medium – Tom made an effort to respond, either personally or through the next Tom Talks, to feedback he received from staff. In other words, staff felt that Tom was listening to them and taking their issues into account when making decisions, which further enhanced the trust in the piece.

    The Tom Talks emails were excellent. There was impressively quick turn around in questions sent by email to both Mr. Closson and Dr Gardam this was beyond what staff could have reasonably expected given the situation and this should be commended. I rate overall performance in this area as an A+. Thanks!

    --Allied Health Professional, TGH

  - The high frequency (almost daily at the height of the crisis) was appreciated, and staff realized that any development would be explained to them in a new issue of Tom Talks.

    "I really appreciated Tom Talks and looked forward to reading it each day. The tone was encouraging and the information very practical. I felt we received the facts and what was not known was acknowledged. The rationale for the actions taken was provided and that was so important to know."

    --Management, TGH

  - The tone was reassuring and echoed Tom's personality. Staff members felt as if he were speaking directly to them through the page. This was particularly valuable given the high level of uncertainty and change.

    "The Tom Talks e-mails throughout the whole SARS crisis put a friendly and helpful face to the UHN administration and the continuing communication helped to make the situation much more bearable."

--Researcher, TWH

- At the same time, there were a handful of comments from the surveys that asked for a shorter version of Tom Talks, since the usual version was too wordy for their liking.

  "Sometimes the Tom Talks emails were a bit long and would take awhile to get to the point."

  --Researcher, PMH

Areas for Improvement:

- Email directives from the Ministry were difficult to absorb, since many looked similar. It was challenging to identify which version was the most current, and what had changed since the last directive.

  "…information coming from the Ministry, honest to god, it would be scads of stuff that came out and by the time you got through it, it was the next day and it had all changed again…. You know, it was very confusing."

  -- Manager, TGH

  For this reason, Public Affairs would have liked to have been more closely involved with the communication leaving the command centres from the beginning of the outbreak.

  "They had so much information they were a bit overwhelmed. I think we could've managed that better if we had somebody in there who was solely responsible for what it is that we're sending out to our managers."

  --Senior Manager, Corporate

- As noted in the discussion of Graph 11, the manager/supervisor did not always perform the role of informer during the crisis, despite his/her proximity to staff.

  "Felt my immediate supervisor wasn't always responsive to keeping staff informed about policies coming from administration. Had to get info from intranet & Tom Talks only."

  --Allied Health Professional, TGH

- Those working outside of the global email distribution lists for UHN (e.g. researchers, medical residents, and medical students) felt out of the loop. However, we are careful to point out that it appears this comment would only apply to on-site staff from these groups, since there was such a positive response to communication from those who consider themselves "off-site" as noted in the discussion of Graph 13.

  "Although I agree that for the most part staff handled the situation in an exceptional and professional manner, I noticed the lack of information flow towards research

staff. Changes in procedures were usually found out by word of mouth a day or two later."

--Nurse, PMH

Recommendations:

1. As noted above, UHN's performance in the area of communication was exceptional. In our opinion, the principles listed below constitute the main reasons for success, and we recommend that they be used to guide the design and implementation of tools to inform staff in a future crisis:

    a. Transparency. Make every effort to address all areas of the crisis in order to provide complete information. Ideally, staff should know about developments from management first (rather than from media or word of mouth, etc.)

    b. Trust. Work to maintain staff trust in UHN communication techniques, as this will help ensure that they perform a support function for staff at the time of the crisis.

    c. Responsiveness. Promote reciprocal information sharing between crisis leadership and staff wherever possible:

    d. Frequency. Especially at the height of an outbreak, frequent communication is helpful, as it provides both information and reassurance, and also contributes to the visibility of leadership.

    e. Simple, reassuring language.

2. However, particular attention needs to be paid to:

    a. Ensuring that all communication leaving the command centre is clear and concise. If at all possible, engage communication experts to re-write/coach those sending out information to ensure that it is as effective as possible. Though time is often of the essence, even using simple tools to flag those portions of the messages (such as provincial directives) that are new or changed would help.

    b. Developing the manager as a key source of information for staff. Managers need more training in their communications role. They need to recognize that they have to become a major source of information for front line workers. It is not sufficient for managers to merely keep themselves informed; rather managers have to take on a pro-active role in communications, particularly in face to face interactions.

c. Including those outside of the normal communication structure (mainly those staff working in research, residents, and students).

2. Communication tools and techniques

This sub theme builds on the previous section and focuses on the various media employed to deliver messages and receive feedback.

What worked well:

- As noted in the discussion of Graph 11, staff referred to several different types of communication when seeking information about how to manage the SARS outbreak. Though not listed in Q17 on the survey (in an effort to keep it as brief as possible), other forms of communication also worked well. In particular:

  - Staff appreciated Tom's broadcast voicemail. In addition, Tom's personal call to every manager to thank him or her for the work they were doing had a huge impact.

    "Excellent decision to do the CEO on voice mail at the outset."

    --Manager, Offsite

  - As noted in the discussion of Graph 15, external access to UHN information by home users was helpful.

    " … we had lots of people telling us they felt very connected at home with what was going on."

    -- VP, Corporate

  - MFPTV (Mary Ferguson Pare TV) allowed nurses to connect with each other without being in contact physically. An innovative approach to communication and ideally suited to a multi-site environment, MFPTV filled a need and was well-received.

    "Our chief nurse executive, Mary Ferguson-Pare, did MFPTV and she would actually do broadcast messages on the Intranet and then eventually linked them to the Internet so staff could sign in from home and get the messages of support."

    --Director, TGH

    "MFPTV. It is really cute and it is a big hit!"

    --Director, TWH

  - Conference calls were a vital part of the information and control infrastructure. Several calls occurred on a daily basis and were an efficient way to gather information and make decisions with key leaders throughout UHN.

    "I thought the conference calls at 8am and 3pm with the other players were useful as decision-making tools and information sharing forums."

-Director, PMH

Areas for improvement:

- There was some question as to whether all sixty participants were needed on the 3pm call. Although each person was selected for his/her perspective, the large number was difficult to manage. Moreover, conference call etiquette not followed consistently, which further weakened the ability of the group to perform effectively. (See also discussion on conference calls on p. 28 and 29)

  "Often the issues discussed were of only limited importance to the entire group. Perhaps the issues could have been resolved amongst the specific individuals involved rather than take the time of the whole group. Sixty people X 2 hours per day is a lot of "person-hours" that might be better spent elsewhere "

  -Director, TWH

  "Put it on mute. Don't eat potato chips. Don't juggle your paper. Speak up so others can hear you. Some of those things, I think that we should have been more attentive to."

  --Senior Manager, TGH

- The telephone fan-out process currently in place as per the Code Orange manual is inefficient.

  "I think if there were any system ways that we could do that differently…it would be great because the Code Orange fan-out is time intensive…"

  --Senior Manager, TWH

- Since face to face contact was strongly discouraged, information transfer occurred most often via phone, email, and intranet. No back-up methods were in place.

  "…if there had been a problem with email access or internet access or intranet access at the time of SARS, communication would have been very challenging."

  -- Supervisor, Corporate

- There were several email distribution lists in use. Some of the lists, such as the SARS Planning Group, were hastily put together at the beginning of the outbreak. Not everyone was aware of who was included on what list. As a result, it was challenging to know who had what information, and sometimes key people were mistakenly left off certain lists.

  "There were several distribution lists being used by different people to send out the information… I didn't have time to look at the list to see who was on it and who was not."

  -- Nurse, TGH

Recommendations:

1. As noted above, several tools worked well. We recommend that in future UHN employ these techniques again, in some cases even more energetically:

    a. Use of voicemail. Though Tom used it a few times, we were not aware of many other managers throughout UHN using this tool. We recommend that all leaders send voice messages to their staff when possible, since the richness of the message is so much greater.

    b. Use of the intranet. As demonstrated during SARS, the intranet is a valuable tool for communication. We recommend that the full scope of such a tool be explored, particularly its capabilities around information sharing and document tracking. For example, these functions could help reduce confusion surrounding which directive is most up-to-date.

    c. Use of video. As per MFPTV, we recommend that other staff groups consider using video to connect with each other. Aside from being a method to share information, such a simple, down-to-earth project also strengthens morale.

    d. Conference calls. It is difficult to balance the goal of inclusion with the goal of efficiency. As the level of uncertainty increases, the need for inclusion dominates the need for efficiency, since many perspectives are required for the decision making process. Also, in times of high anxiety, direct contact with the leader is reassuring. However, as the crisis becomes more understood, these needs decrease. As this occurs, we recommend that the number of participants in the calls as well as the frequency of the calls be reduced.

    e. We recommend that training be done on conference call etiquette so that calls are as efficient as possible. Perhaps the regular business of UHN could be conducted via conference call to give leaders practice interacting with this tool.

2. Replace current telephone fan out system for Code Orange with a conference fan out system, similar to what they use in the transplant program.

3. Develop backup systems for telephone and internet communications. We suggest UHN investigate the use of mobile, cellular and wireless email (RIM) as backup for land lines.

4. Develop a standard set of email distribution lists for use during a crisis. Once the lists are compiled, introduce the key users to them as part of their emergency management training. We also recommend that one person be assigned to ensure the lists are current.

5. Recognize that many employees do not have email access and encourage use of other methods for communication in those areas. For example, ensure that paper copies of communications are available to staff. In addition, consider use of translation services for key communication pieces, such as Tom Talks.

4. Methodology

A: Objectives of the review

As outlined in the research proposal document (Appendix C), the objectives of the review were as follows:

- Identify structure/processes that worked well and opportunities for improvement in UHN's response to the SARS outbreaks.

- Make recommendations for updating UHN's Emergency Plan for response to infectious disease outbreaks.

B: Methods and Evidence Base

To accomplish the objectives outlined above, the research team conducted 28 interviews with key informants on the SARS response. In addition to the interviews, the team conducted an organization-wide survey. The reason for the survey was two-fold: First, there was a need to gain a broader perspective on the opinions surrounding the SARS response at UHN. In particular, it was important to measure the opinion of the frontline staff, as they were the key recipients of the response efforts. Secondly, the survey allowed the team to make comparisons between the attitudes and comments of different groups of stakeholders.

1. Design of interview guide

The interview guide (Appendix D) that was used by the Principal Investigator (Professor Joseph D'Cruz) and the Expert Researcher (Rosemary Hannam) was developed specifically for the UHN experience. Using his experience with emergency preparedness in other industries, the Principal Investigator established the key principles of disaster response to be tested:

1. Responsiveness: How quickly were leaders within the organization able to react?

2. Effectiveness: Did the measures that were put into place accomplish what they were meant to accomplish?

3. Influence: Did the leaders at all levels of the organization have access to key decision makers during the crisis? Did they feel that their concerns were heard?

4. Communication: How effective were the communication tools and techniques used during the SARS response? Were they clear, frequent, timely and sensitive to staff fears?

5. Site Coordination: How well did the sites coordinate with each other as well as with the corporate centre during the response?

6. Team player activity with other hospitals: How well did UHN interact with surrounding hospitals? Was UHN a team player? Did UHN provide leadership?

7. Leadership: Did UHN provide strong leadership to its staff and patients during the crisis?

The questions for the interviewees were based on these principles. The Interview Guide was submitted to the client for revisions and additions before the interviews began.

2. Interviews with key informants

Interviews were conducted in August and September, 2003. Candidates for the interviews were chosen according to their level of involvement in the SARS response. In order to gain as accurate a picture as possible, efforts were made to include a representative group. Interviewees were chosen from each site, including the corporate offices, as well as from a variety of positions (both clinical and non-clinical) and roles (see Appendix E for a list of interviewees.)

In total, the PI and the Expert Researcher conducted twenty-eight 45-minute interviews with key informants from corporate office and all three sites. Each interview was recorded and approximately half were transcribed. The remaining interviews were documented using the field notes of the interviewee.

The notes and transcripts have been reviewed and analyzed according to the principles outlined in the previous section (see Appendix F). The themes that emerged form the basis of the following sections.

The Research Ethics Board was informed of all aspects of the interviews. The PI received a letter of permission before proceeding (Appendix G). Permission to interview and record the exchange was also obtained from each interviewee prior to the start of the interview, as per the Research Ethics Board protocol (Appendix H).

3. Design of survey format

As the UHN-wide survey was intended to capture the same information as the interviews, the principles of disaster response (as outlined above) also form the basis for the survey questions. In addition, three questions were added to provide further information on issues that had arisen from the interviews:

- Question 4: "I was asked to stay away (for at least one day) during the SARS outbreaks."
  Staff were asked to indicate whether they had been asked to stay home in order to determine whether there was any difference in the attitudes of those who had stayed home, and those who had not.

- Question 14: "My site handled issues related to re-opening of patient services in a timely and effective manner."
  Question 15: "My site handled issues related to re-admittance of visitors in a timely and effective manner."
  Since a difference of opinion emerged from the interviews regarding the question of the re-opening of services, these two questions were added to get a sense of the broader opinion surrounding this topic.

4. Survey

The survey was conducted between September 23rd and October 7th. It was distributed to all UHN staff through the payroll system, and was also available online (see Appendix I for survey format). Since volunteers and student screeners are not on payroll, separate surveys were mailed to these groups. Physicians without administrative positions are also not included in payroll. To capture this group an email was sent to each one with an explanation and a link to the online version.

The launch of the survey was heavily supported by Tom's endorsement in Tom Talks as well as an information package and Q&A sheets that were sent to each manager at UHN. Special attention was given to two areas of particular interest:

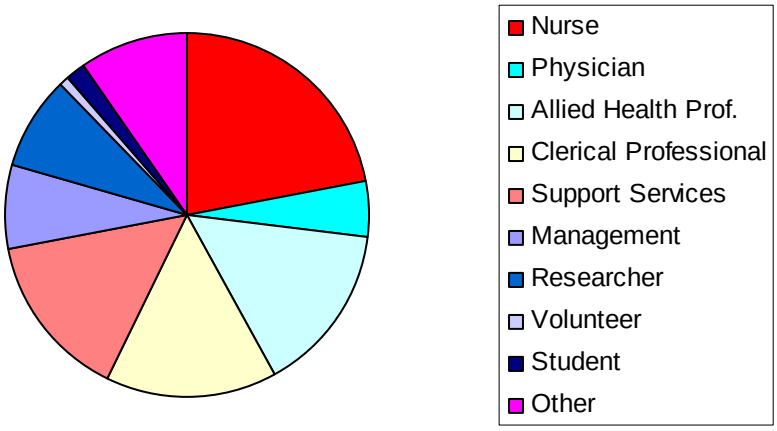
1. Support services, including the cleaning and housekeeping staff and;

2. Clinical areas that treated SARS patients. Rosemary Hannam contacted the managers in those areas to promote the survey, answer questions, and encourage responses.

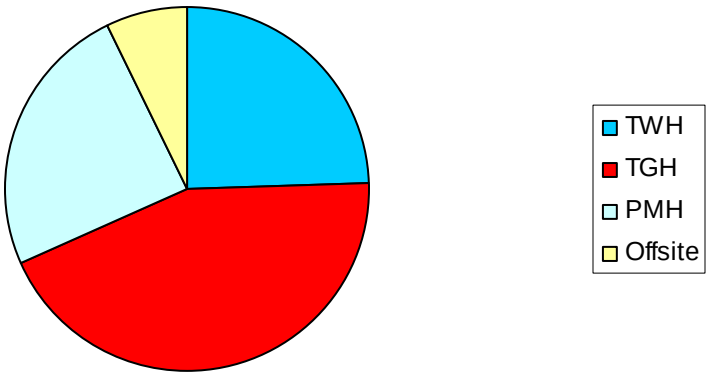
The response rate was overwhelming: 2,907 responses from a total of 10,292 staff were received. This number constitutes a response rate of 28%, almost three times the 10% rate expected. From this strong response rate we have concluded the following: One, the SARS crisis affected virtually every staff member at UHN; and two, staff trust that their views will be heard and considered by senior management in future planning.

Not only was the response rate high, but also a cross section of sites and roles was represented. Note the following pie charts, clearly indicating a variety of roles and a balance of respondents from each site.

Graph 16: Q1-Role of respondents (by percentage)



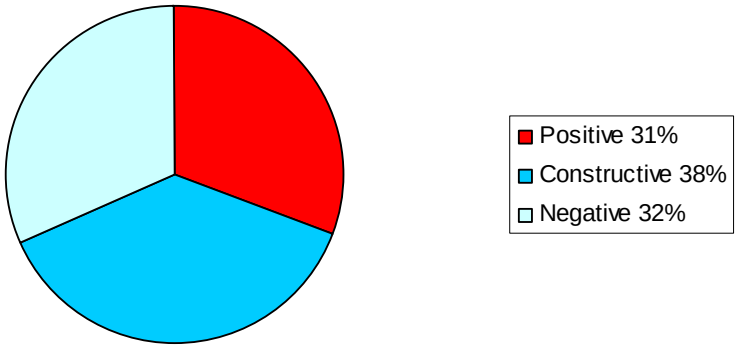
Graph 17: Q2-Site of respondents (by percentage)



For further detail on the demographics of the respondents, please see Graphs 18 through 23 in Appendix A.

Besides the check-box responses, 715 respondents took the time to submit written comments. In addition to the content, the comments are also useful as an indicator of the respondent's overall perspective towards UHN's response to SARS. The comments were analyzed according to whether they were positive, negative or neutral, and the results were balanced (see pie chart below). This suggests that the survey captures a variety of opinions and is not weighted primarily toward those who were particularly positive or those who were particularly negative about the crisis.

Graph 24: Breakdown of comments by attitude



Comments from the surveys were also sorted according to themes and categories (see Appendix J), which, in conjunction with the interviews, form the basis of the following sections.

5. Appendices

- **A. SARS Survey Data Analysis – Part one**
- **B. SARS Survey Data Analysis – Part two**
- **C. Research Proposal**
- **D. Interview Guide**
- **E. List of Interviewees**
- **F. Interview Analysis**
- **G. REB approval letter**
- **H. Consent for interviews form**
- **I. SARS Survey**
- **J. Survey Comment analysis**
- **K. Summary of Recommendations**