# Five Sick Nurses

As April unfolded and it appeared that the outbreak was being contained, hospitals and the community at large anticipated a return to normal. No one wanted to see more SARS cases. Everyone wanted it to be over. But at North York General, illness among health workers would cause some staff to question their safety and to worry that perhaps not all cases were being properly identified.

In retrospect, we now know that one of the ill health workers, not classified as SARS at the time, was connected to the second outbreak at North York General Hospital, as her likely source of exposure was a patient on 4 West (the unit later identified as the epicentre of the second outbreak) whom she cared for in the intensive care unit (ICU). At the time of his illness he was not recognized as a SARS case; he was diagnosed with SARS retrospectively after the outbreak at North York General was identified on May 23, 2003. The other four nurses appear to have no direct link or connection to the second outbreak.

However, the stories of the ill health workers reveal problems seen throughout the story of SARS: tensions between clinical diagnosis and the strict case definition, requiring a known link before a case could be identified as SARS, lack of clarity around communication with staff, lack of clarity around the meaning of a classification of a patient as a person under investigation, the importance of education and training on the use of personal protective equipment, and poor communication in cases involving more than one hospital.

## Three Sick Nurses

By April 6, 2003, three nurses, all from the same unit, were under investigation for possible SARS.[499] The transmission to three nurses was frightening for all those who went to work in the hospital each day, hoping that they were safe.

499. NYGH SARS Task Force Steering Committee, Minutes of Meeting, April 7, 2003, 1600 hours, Main Boardroom – General Site.

Health Worker No. 1 developed a temperature on March 30, 2003, while at work. She continued to be unwell for the next few days. She told the Commission that when she reported to occupational health, she was told to stay home and, if her condition continued to deteriorate, to see her family doctor. She made three visits to family physicians over the next three days, the final visit including a chest x-ray. On April 5, she received a call from the hospital inquiring about her condition. When she reported that she remained unwell, she was told to come to the emergency department. She was admitted to hospital on April 5, 2003.

Health Worker No 2 had worked with Health Worker No. 1 during the time when Health Worker No. 1 first began to feel unwell. She recalled that Health Worker No. 1 had complained to her that she felt unwell and that they had not been wearing their masks when they were on break together. Health Worker No. 2 began to develop symptoms on Monday, March 31, 2003. On April 4, she saw a family doctor, who suggested she go to the emergency department. She did so, and was admitted to North York General Hospital on Friday, April 4, 2003. At the time of her admission she reported that her colleague, Health Worker No. 1, with whom she had been in contact, was also unwell.

A third colleague, Health Worker No. 3, began to feel unwell on Thursday, April 3. By Sunday, April 6, 2003, Health Worker No. 3's condition had worsened, and she was admitted to hospital later that day.

All three nurses worked on 8 West, which was then an acute geriatric and medicine floor. At that time there were no known SARS cases on the unit and there was nothing to suggest that any of these three nurses had been in contact with a SARS patient while working in North York General. While they were clearly connected to each other, their epilink to a SARS case was unclear. Public Health and the hospital commenced an investigation in an effort to account for this unexplained transmission. One hospital official described the news of their illness as a "huge concern."

On April 6, 2003, the hospital issued an update advising of the admission of the three ill staff under investigation for SARS and said:

> There is no evidence that SARS was passed on to these nurses when they were wearing protective SARS gear and caring for patients. None of these nurses were caring for SARS infected patients at NYGH. We know that these cases have caused concern among staff; we would like to remind everyone that proper protective gear and SARS precautions in all areas at all sites are very effective in stopping the spread of the disease. To

> date, we have done a good job of protecting ourselves and we will continue to aggressively protect staff and our patients.
>
> Infection Control and Occupational Health are working with Toronto Public Health to further investigate the above mentioned cases. Occupational Health will be contacting all known staff who had contact with these nurses between March 29 and April 4. We recognize that all of our staff need access to medical services and we are working setting up an assessment area. We will update you as soon as we know more information. If you are exhibiting symptoms of SARS, please contact Occupational Health [number provided].
>
> There is a suggestion that the nurses under investigation for SARS could have contracted the disease while they were having a break together in a staff lounge with their masks off and sharing food.
>
> At this time we would like to reinforce the Food Policy. The full Food Policy should be available in your SARS binder on your unit. Some key points of this policy are as follows:
>
> - Staff must sit at least one metre apart from other staff and stagger seating arrangements.
> - Do not share food.
> - Ensure you wash your hands before and after every meal.
>
> We also want to remind you when changing clothes before and after your shift, please maintain precautions by wearing your mask at all times.[500]

Initially, the source of their transmission was a puzzle. Dr. Barbara Mederski recalled speaking to Health Worker No. 1 in an effort to find out how she got SARS and said that although there were theories, the possible source of transmission was not clear at that time:

> [Health Worker No. 1] indicated that her mother had been at the Grace Hospital on the cardiac floor getting some kind of cardiac procedure. Her mother was completely well. She had absolutely no symptoms despite her age, her frailty or medical condition. She was perfectly well. So the fact

500. NYGH SARS Update, #12.

> that [Health Worker No. 1] was sick with a well mother, albeit had been at the Grace a few weeks earlier, was bizarre. [Health Worker No. 2] in turn had the connection of having shared food with [Health Worker No. 1], who we now realized probably, in retrospect, had already been ill by the time of that luncheon. So it made more sense that the two of them would be ill. And at that stage, because of the constellation of symptoms and the link with the Grace, albeit through a healthy party, I essentially labelled them as persons under investigation, probable SARS. That was in my own mind.

The hospital established a clinic to screen those staff members who had been in contact with these nurses, under investigation for possible SARS. Arrangements were also made to have the family of Health Worker No. 1 come to the hospital to be examined and have x-rays taken, to determine if they too were ill. Although the rest of the family was well, one family member was admitted under investigation for SARS.

Over the next few days Public Health, with infection control and the occupational health department at North York General, worked on identifying possible contacts of these nurses. Toronto Public Health sent a field epidemiologist to the hospital to review the cases and put together an epidemiological picture of who had contact with whom and how SARS may have been transmitted between these sick nurses. Potential contacts were identified to monitor them for symptoms and to place them in quarantine. In total nine nurses were identified as potential contacts. Fortunately, none of these contacts developed SARS.

On April 8, 2003, the hospital reported to staff that Toronto Public Health and the hospital continued to investigate a possible link back to Scarborough Grace Hospital. At this time they also reported that Health Worker No. 3 was not believed to have had unprotected contact with the other nurses, and that she did not have SARS-related symptoms.[501] They reiterated this message the following day.

On April 9, 2003, they provided the following update to staff:

> We currently have seven patients on the SARS Unit. The three staff members that remain under investigation for SARS are stable. As stated yesterday, it has been determined that the third staff member had no

501. NYGH SARS Update #14.

> unprotected contact with other staff, and does not have SARS related symptoms.[502]

Public health officials believed that the chain of transmission went from Health Worker No. 1 to Health Worker No. 2. Investigation to that point revealed that one of the nurses, Health Worker No. 1, had a connection to the Scarborough Grace Hospital, as her mother had been an inpatient between March 14 and March 18, at a time when SARS was spreading throughout the hospital. Health Worker No. 2 had unprotected exposure to Health Worker No. 1 in the staff lounge.[503] Throughout April, Health Worker No. 1 and Health Worker No. 2 remained under investigation for possible SARS.

Health Worker No. 3 told the Commission that she had contact with Health Worker No. 2 when neither was wearing a mask or other personal protective equipment. Health Worker No. 3 was initially classified as a person under investigation, but on April 22, her case was closed with Public Health as she was classified as "does not meet case definition." This meant that she did not meet the case definition for SARS, either suspect or probable, or for a person under investigation for SARS. Infection control and those involved in her care at North York General agreed with the determination that Health Worker No. 3 was not SARS. As Dr. Mederski, who was involved with all three cases, said:

> She had also worked on 8 West but not at the same time as the other nurses and actually did not have contact with them. And, in fact, her duties, shift duty was not very extensive, so she was just sort of coming in and out briefly and there was no clear link with either of the two other ladies or with any other epilink and neither were her symptoms compelling, but just by virtue of the fact that she was on 8 West and this coincided with both [Health Worker No. 1] and [Health Worker No. 2], we decided to bring her in as a person under investigation. And I think the few of us who saw her did not feel that she had SARS at that time but we still felt compelled to investigate to a point.

After the last update about these ill nurses to staff on April 9, 2003, their status was never clarified or updated again. Beyond the above information provided to staff, that they were ill and under investigation, it was unclear what the result was. Was it SARS,

502. NYGH SARS Update #16.
503. NYGH SARS Update #16.

not SARS, or could be SARS but was still under investigation? There was no further explanation provided in the updates to staff, then or later, as to how these three nurses became ill, beyond the "possible link back to Scarborough Grace," and their exposure to each other while unmasked during breaks.[504]

Health Worker No. 1 was neither reported to staff as SARS nor ruled out as SARS. She remained under investigation as a possible SARS case throughout April and May. Health Worker No. 2 was neither reported as SARS nor ruled out as SARS, even though she remained a person under investigation until May 3, 2003, when she was classified as "does not meet case definition." The third nurse was reported to staff as early as April 8 as not SARS, even though she remained under investigation for possible SARS until April 22, when she was classified as "does not meet case definition." Throughout April and, in the case of two of the nurses, into May, Public Health monitored their symptoms, identified their contacts and monitored their contacts for symptoms. Public Health had not ruled out the possibility that these cases could be SARS.

The following chart provides an overview of the classification and communication to staff in respect of these ill nurses:

| | **Date Admitted to Hospital** | **Classification by TPH** | **What Hospital Staff Were Told** | **Post–May 23 Classification by TPH** |
|---|---|---|---|---|
| Health Worker No. 1 | April 5/06 | Remained PUI[505] until changed to SARS on June 23 | Under investigation | Probable SARS |
| Health Worker No. 2 | April 4/06 | Remained PUI, until classified as DNM on May 3 | Under investigation | Probable SARS |
| Health Worker No. 3 | April 6/06 | Remained PUI, until classified as DNM on April 22 | Not SARS | Suspect SARS |

504. NYGH SARS Update #12.
505. PUI is the classification category "person under investigation."

Even after SARS, despite the fact that infection control and occupational health were actively involved in the investigation into this cluster of staff illness, and despite it's involving three staff members, hospital officials remain unclear about the outcome of the investigation. Dr. Keith Rose, when asked to describe the investigation into this cluster of illness, said:

> There would be two parts to the investigation. Number one, how they got SARS, how they contracted it, what were their other contacts, what else needed to happen. And then there would have been the medical investigation of the patients to understand what disease did they really have. And my understanding was that the experts felt that these nurses, it was unlikely that they had SARS, and they had a rational explanation that they may have had another respiratory disease of which I don't know the details about. My understanding was that they felt very clearly that this was not SARS.

One member of the SARS Steering Committee, when asked what they understood to be the SARS status of these nurses, said:

> At that time I don't think they could actually say they were or say they weren't because of the wishy-washy epilink. Because I would have thought if they thought it was SARS, they would have closed us down.

The report of the Joint Health and Safety Committee at North York General made the following comments, highlighting the continued lack of information among front-line staff on the cause of this cluster of illness:

> The epidemiological link (the epilink) responsible for this mini-outbreak on the original 8W has not been identified and the situation remains unexplained. Whether this may have led to the spread of SARS to any other areas of the hospital is unclear.[506]

All three nurses were retrospectively classified as SARS: two as probable cases and one as a suspect case. To date the prevailing theory among public health officials remains that Health Worker No. 1 contracted SARS through contact with her mother, who contracted it on the coronary care unit (CCU) at Scarborough Grace

506. North York General Hospital, Joint Health and Safety Committee, Report, p. 37 (JHSC Report).

Hospital, and that Health Worker No. 1 spread SARS to the other nurses through unprotected contact that occurred primarily during staff breaks.

The story of these three nurses is also important because it underlies a later theory about the origin of the second outbreak of SARS, a theory that was developed in hindsight, after the second outbreak, and that was announced by Toronto Public Health on June 13.[507] According to this theory, Health Worker No. 1 contracted SARS from her mother, who had been a patient at Scarborough Grace,[508] and then passed it on at North York General to Patient A, a 96-year-old patient on 8 West. When 8 West became the SARS unit, Patient A was transferred to 4 West, the unit we now know was the epicentre of the second outbreak. This theory has since been rejected and the source of Patient A's exposure remains unknown. Patient A's story and the story of 4 West are told later in this chapter. An investigation into the outbreak at North York General found no evidence of any link between Health Worker No. 1 and the second outbreak.[509]

While no one knows with any certainty what caused the second outbreak at North York General, public health officials no longer consider that Health Worker No. 1 or the other two nurses had any connection to the second wave of SARS at North York General Hospital. Their story does not impact on the second outbreak as an early warning sign, a causal link or a missed alarm.

Their story is nonetheless an important part of the history of SARS at North York General. Not only did three health workers become ill, impacting their health, their fears of infecting their families[510] and their concern for their own lives, but their illness underscored to other staff the risk they faced just by coming to work.

By mid-April, with confidence that the contacts of these nurses had been identified and that the cluster of illness did not appear to be extending beyond these nurses, the matter appeared to have been put to rest. Although these nurses had not been clearly identified as SARS nor had SARS been ruled out, if they were SARS there appeared

507. Toronto Public Health, Daily Technical Briefing to the Press, June 13, 2003.

508. Toronto Public Health SARS Document, August 25, 2003, reported that Health Worker No. 1's mother was a roommate of two patients at Scarborough Grace Hospital, both later identified as SARS. Health Worker No. 1's mother's serology tested positive for SARS antibodies.

509. SARS Field Investigation.

510. A close family member of one of the ill health workers was hospitalized under investigation for SARS and was later classified as a probable case.

to be no further spread of the disease and a plausible explanation for its transmission and spread had been identified.

By April 11, 2003, the hospital was preparing for an anticipated return to Level 1 status and planning for an increase in activity,[511] but as April progressed, the reality of the danger of SARS would resurface, as there would be further cases of staff illness. Two more nurses would be investigated for SARS, but both would be misdiagnosed and misunderstood, adding to the anxiety of those front-line staff who wondered just how safe they were and if they knew what was really happening in the hospital.

## An Infected Nurse on the SARS Unit

On April 22, 2003, North York General staff were told in an update that a nurse from the SARS unit was under investigation for SARS.[512] This transmission was alarming, as it occurred in an area of the hospital that, while at great risk, was supposed to be the most protected in terms of worker safety.

Health Worker No. 4 began working in the SARS unit towards the end of April. On one particular occasion, she recalled working with a patient who was thought to be a probable SARS case. He was quite ill and was having difficulty breathing. Health Worker No. 4 spent more than 30 minutes in the room with him before he was transferred to the intensive care unit. She began to feel unwell and went to the emergency department at Scarborough Centenary Hospital late in the evening on Friday, April 20. Early the next morning, April 21, she was transferred to North York General Hospital, where she was admitted to the SARS unit.

Health Worker No. 4's case was brought to the attention of the North York General Hospital SARS Task Force, whose minutes report that her illness was "believed to be most likely community acquired pneumonia" but that "the possibility of SARS had to be investigated."[513] The minutes also reported that the case was under investigation and proceeding as rapidly as possible.

511. North York General Hospital, SARS Task Force Steering Committee, Minutes of Meeting, April 11 and 12, 2003, 10:00 a.m., Main Boardroom – General Site.
512. North York General Hospital, SARS Update #23. The staff illness was also referenced in the April 21 SARS Steering Committee Minutes.
513. North York General Hospital, SARS Task Force Steering Committee, Minutes of Meeting, April 21, 2003, 10:00 a.m., Main Boardroom – General Site.

Later that same day, just a few hours after the Task Force Committee meeting whose minutes noted that the case was "under investigation," an update was sent to staff advising them that the staff member who had come down with symptoms of respiratory illness and been admitted to the SARS unit had been investigated by infection control and that the investigation concluded that the "staff member does not have SARS." The update said:

> A key topic of discussion this morning was about a NYGH staff member who has come down with symptoms of a respiratory illness and was admitted to the SARS Unit. A detailed investigation by Infection Control and Public Health revealed that the staff member does not have SARS. We are treating anyone with respiratory illness with extreme precaution to ensure that we clearly identify and treat suspected or probable SARS cases as quickly as possible.
>
> As a result of this information, we will continue on to function on Level 1 status.[514]

The minutes from the Task Force Committee meeting the following day, April 22, reflected this:

> Sunday night: nurse from NYGH Sars unit asymptomatic, remains on SARS unit, not SARS.[515]

But this conclusion would change.

On April 28, 2003, the Task Force minutes reported that the same nurse who had previously been reported to staff as not SARS was now in the ICU at North York General Hospital, diagnosed with suspect or probable SARS. The minutes also reported that Toronto Public Health had investigated the matter previously and was doing so again, but the only epilink they found was 8 West, the SARS unit at North York General Hospital.[516] On the other hand, the minutes report that there were "no

514. NYGH SARS Update #23.
515. North York General Hospital, SARS Task Force Steering Committee, Minutes of Meeting, April 22, 2003, 10:00 a.m., Main Boardroom – General Site.
516. North York General Hospital, SARS Task Force Steering Committee, Minutes of Meeting, April 28, 2003, 10:00 a.m., Main Boardroom – General Site.

apparent breaches in precautions."[517] The precise cause of the transmission remained unclear. The update provided that day told staff:

> A main topic of discussion this morning was about a staff member under investigation whose illness had progressed since being admitted eight days ago. Infection Control and Public Health interviewed all known contacts of this staff member when the investigation first got underway, and spoke with them again yesterday. Everyone is in good health. This situation is being carefully monitored.[518]

The following day, April 29, 2003, staff were given the following update:

> We also have an update to share with you about the staff member whose illness has progressed. It was confirmed last night that the staff member has probable SARS. A full, aggressive investigation into the possible source of infection continues.[519]

In that same update, on April 29, hospital officials reported to staff that two patients on 7 West, the psychiatry floor, had been diagnosed with probable SARS.[520] More will be said about the psychiatric patients below.

For some staff, this apparent flip-flop concerning Health Worker No. 4 was troubling, as they wondered if they were being given the right information or if those in charge really knew what they were doing. How could someone be ruled out so definitively, so quickly, and then later turn out to be SARS?

But those closely involved in the case explained that it was not unusual to identify a SARS case after the clinical picture deteriorated. As one doctor who treated many SARS patients explained:

> It may look odd now in 2006, but at the time I think SARS was a new disease and the presentation of SARS was fever, fatigue and achiness, which had nothing specific compared to the rest of any other viral illness, and we were really learning at the time as opposed to knowing

517. North York General Hospital, SARS Task Force Steering Committee, Minutes of Meeting, April 28, 2003, 10:00 a.m., Main Boardroom – General Site.
518. NYGH SARS Update #27.
519. NYGH SARS Update #28.
520. NYGH SARS Update #29.

> what the illness is all about. So, again, I don't have any recollection of seeing this patient or whatever, but looking back it would not be a surprise to say that somebody maybe decided not to label as SARS initially but as time goes by see that the patient has become more and more like SARS and then to change the diagnosis afterwards. It was not impossible, at that time.

Dr. Mederski recalled that although Health Worker No. 4 clearly had a potential epilink through her work on the SARS unit, Health Worker No. 4 was adamant that she had not breached protocol and that her illness may have other explanations:

> When she first presented, again without the clinical chart, I can't remember if she did or did not have chest x-ray findings. She had a potential epilink insofar as she had been working on the SARS unit. Now this would have been obviously a major, major thing. We are talking breach of protocol in terms of potentially getting infected. The patient herself was adamant in all questioning that she had never breached protocol, that she had never done anything that could possibly have rendered her contaminated by SARS, and she was adamant that she had chronic recurring respiratory infections, of which this was merely another bout, and was adamant emphatically that she wanted to leave the hospital. She was quite stable the first few days, and I would guess then, in retrospect, this may have been what was happening in terms of the definition of whether she fitted SARS, because if she was adamant that she did not breach any barriers, then how could she have gotten infected with SARS. There was no other way she could have become infected. She didn't leave, she didn't go anywhere except home and to the SARS unit, home and to the SARS unit. So that's, I think, the way it was viewed by the investigators at that time, when we were feeding the information. There would be Public Health getting information from us and the daily update which they did, and making decisions around that, as well as my own clinical impression and those of my consultants who would have seen her.
>
> So I guess at this point that her clinical condition definitely worsened by around the third day. She came in on a Sunday and, I think, by the Wednesday she was quite ill and by then she had developed clear-cut infiltrates on her chest x-ray and was clearly showing a rapid progression

> that was quite different from the earlier days. And so, that may have then led to, hey, you know what, notwithstanding the apparent absence of contact, this is progressing now like a SARS case.

However, saying that she might be SARS but that they could not find a source of exposure was different from saying with certainty, as was done in the early days of this case, that this was not SARS. Even in the early days, those involved in Health Worker No. 4's case thought this could be SARS. So how did the message become so emphatic that it was not SARS?

At play in this case, and what will be seen as a recurring problem at North York General in the days leading up to the second outbreak, was a lack of clarity around the roles of hospital clinicians, infectious disease experts, Public Health and the Provincial Operations Centre: that is, the difference between a clinical diagnosis of SARS, or a clinical belief that a patient had SARS, and the formal classification of a patient as having SARS. Dr. Mederski reported that clinically, Health Worker No. 4 appeared to be a case of SARS, but that it was initially ruled not to be SARS:

> Question: Such a definite statement, a detailed investigation by Public Health revealed that the staff member does not have SARS. Now I am presuming that this kind of a message, this is going out to the hospital in the present, doesn't get said unless that is what the report is to the Task Force, and it just seems so definite, that somebody has gone in, they have done a detailed investigation and they are saying this patient does not have SARS. And as we see within some period of time that she does have SARS, it's raising the question, who was making the call?
>
> Dr. Mederski: This is case number four, five or six, or maybe even seven, but I am having, my personal opinions are SARS and my adjudicators are feeling probably not or possibly not at that point.
>
> Question: Or definitely not?
>
> Dr. Mederski: Or definitely not.

Question: The adjudicators were Public Health?

Dr. Mederski: Well, Public Health worked in concert with the Scientific Advisory Committee and POC's [Provincial Operations Centre's] scientific physician leaders, and I know for a fact that they always went to them for any dubious cases or questionable cases. And again, I would have called the POC. I had most of the time encountered [one of the doctors taking calls at the Provincial Operations Centre] answering the phone, because they had sort of a roster, and he then would in turn say to me, well I have to speak to Dr. [Donald] Low, or you have to speak to Dr. Low, or I'll talk to Dr. Low and then somebody will get back to you. I also know that that's where I was channelling through to Bonnie [Dr. Henry], to try to get to other physicians who had knowledge of these cases, because again it was kind of repertoire sequence, and asking them what was going on, and the decision would come either in the form of a discussion over the phone together as we did on the other cases or, as later, we had them actually come on site.

Also at play throughout the story of North York General Hospital was the breakdown in communication between Dr. Mederski, the infectious disease specialist who was in charge of communication with Public Health, and others. Although Dr. Mederski expressed the view, quoted above, that she was overruled with respect to this case, Toronto Public Health records dated April 21 report her as saying that she was "confident [that Health Worker No. 4] has community acquired pneumonia – Not SARS!"[521] This is consistent with Dr. Mederski's own evidence that the case was not at the outset an obvious case of SARS.

When case adjudicators came on site on April 27 to review this nurse's case and the case of two ill psychiatric patients, whose story is told below, they determined that Health Worker No. 4 was SARS.

521. Toronto Public Health case files for Health Worker No. 4, SARS Program Progress Notes, dated April 21, 2003.

Toronto Public Health officials said that their role was never to determine a clinical diagnosis of the patient and that they never overrode a clinical diagnosis of SARS. Their role was to decide if a patient met the case definition and to provide epidemiological support. As Dr. Bonnie Henry explained:

> There are two parts, there is the clinical diagnosis and how you manage a patient, then there is the whole part of our responsibility at Toronto Public Health to report on numbers of SARS to the federal level and the Province and Health Canada, and that was a different issue altogether. That was much more about, do you meet this very narrow WHO [World Health Organization] definition that's adopted, and if you don't have an epidemiological link, then you don't officially meet that definition and it's a numbers game in a sense, which is a little bit separate from the individual picture that we were involved with. And certainly in April, North York was not the only facility we were involved with. There were daily discussions with multiple facilities about multiple patients who were on the SARS units. I think we had 19 SARS units at one point where we had contact daily with them, about all of the cases. So if something was misinterpreted perhaps, by Barbara [Dr. Mederski], if we said we are not going to include this person in, or they don't meet the case definition for probable SARS, maybe we had said something like that, she may have interpreted that as us saying she [Health Worker No. 4] doesn't have it, I don't know. I am just speculating that those are the types of things that could have happened.

As many doctors pointed out to the Commission, regardless of the actual classification of a person as SARS or not SARS, those cases at North York General where there was a suspicion of SARS were put in isolation and handled with precautions. Treatment decisions were not affected by a patient's classification according to the case definition. As Dr. Mederski told the Commission:

> We did not know what to treat SARS with. The direction about how to treat these patients was, do essentially what you would do with any other respiratory-infected patient. So, give them all the different antibiotics you think they may need, do this and that, but additionally, if you really think it is, consider using steroids and ribavirin. So, those would really be the only salient differences between treating a sick respiratory case of other sorts and a SARS case. The isolation would technically be the same or should be the same. The degree of isolation, although if it's

> somebody who's well, it should be the same, basically. But the actual issue of the epilink then, or not having it, doesn't change how you treat them because you are still going to treat them with everything you have at your hands, if it's a very ill patient. You are also allowed to just observe. You can just sit by and watch a patient depending on how stable they are. You don't have to treat, there is no such thing as treat right from the day they walk through the door, unless the treatment is indicated. So, whether the patient was identified as SARS or not, if they had nebulous findings, were not terribly ill, one would just sit back and observe and watch them closely, monitor them, do investigations to what was available to us at the time and watch what happened. And then, with the notion that this may end up being a SARS case, have a much lower threshold for charging in with the steroids and the ribavirin, which at that particular time were the only thing that differentiated SARS from non-SARS treatment.

While the medical treatment may not have been impacted by the formal classification or description of a patient, this misunderstanding of the respective roles had profound consequences for the information that was provided to staff. As will be seen time and time again at North York General, where Public Health determined that a case was not SARS for classification purposes because it did not meet the case definition, the conclusion taken by hospital officials and provided to staff was that the case was not SARS. But simply because a case did not meet the case definition at that time did not mean it could be ruled out as SARS. A person under investigation, and even one who did not meet the case definition at that time, could later end up being classified as SARS.

Although Health Worker No. 4 was initially determined as not SARS because she did not meet the case definition, she was under investigation for SARS and remained a person under investigation by Public Health from the time she was admitted to hospital until she was ultimately classified at the end of April as probable SARS.

The illness of Health Worker No. 4 caused concern for both the hospital and public health. Because of the protective environment of the SARS unit, they quickly determined that there appeared to be no unprotected contact with other patients or staff. But it was still unclear how Health Worker No. 4 contracted SARS. While she was hospitalized, battling SARS, she was repeatedly interviewed in an effort to understand how she had become infected. She recalled how frustrating the experi-

ence was because she was so ill and she was unable to provide an easy explanation for how she got SARS.

There are many possible explanations for her illness and no one will ever know with certainty precisely when and how Health Worker No. 4 was exposed to SARS.[522] Like the three health workers who became ill in April, Health Worker No. 4 appeared to have no connection to the second wave of SARS at North York General.

Around the same time that staff were hearing that Health Worker No. 4 did have SARS, some would also learn about the illness of yet another nurse. This fifth sick nurse appeared to fall under the radar completely, as both hospital officials and staff at North York General seemed unaware of her case. Significantly, had Health Worker No. 5 been identified as SARS at the time, her case would have represented transmission of SARS within the hospital, from a completely unknown and unidentified source, in an area where SARS was not believed to be present. And, as we now know, her illness, had it been identified, may have been an important early signal that there were unidentified cases of SARS on 4 West at North York.

522. Health Worker No. 4 reported that when she worked on the unit, she did wear the personal protective equipment as required by hospital policy. She told the Commission that she had not been fit tested, and she wore a respirator that she later discovered did not fit her. Also potentially reducing her level of protection was the fact that she was in the habit of wearing a surgical mask underneath the required N95 respirator, as she thought this would offer a higher level of protection. Because she had not been fit tested and had not been trained on how to properly apply the N95 respirator and ensure a proper seal, she was unaware that by wearing a surgical mask underneath, she was potentially preventing a proper seal being made by the N95 respirator. Although, as noted above, when and how she was exposed to SARS remains unknown, her story underscores the importance of proper training and use of personal protective equipment.

## A Fifth Sick Nurse

On April 30, 2003, another nurse from North York General was admitted to hospital under investigation for SARS.[523] Like the three nurses who were investigated earlier in April, Health Worker No. 5 had not worked with any known SARS cases.

Although it turned out in the end that she had SARS, a series of systemic failures together with the inherent difficulty of diagnosing SARS led to a failure to identify SARS.

Health Worker No. 5 recalled working during a night shift on April 27, 2003, with a patient who had previously been a patient on 4 West, the orthopedic floor that was the epicentre of the second outbreak. This patient developed respiratory problems and was transferred to the intensive care unit on the 6th floor at North York General Hospital. Health Worker No. 5 recalled that at that time it was believed that the patient had pneumonia, and that no one suspected SARS. She recalled taking a sputum sample from him, and she also recalled using suction on him and that there was some spray. Health Worker No. 5 could not recall whether or not she was wearing a mask when she cared for the patient. She reflected that at that time it was her understanding that if the patient was not suspected as SARS, staff did not have to wear a mask. Hospital policy, however, required that all staff wear N95 respirators in all patient care areas.[524] Like Health Worker No. 4, her misunderstanding as to the use of protective equipment underscores the importance of training and education for everyone working on the front lines of patient care.

The following day, April 28,[525] she began to feel unwell. She went to Toronto General Hospital, where she was put in isolation. She was told by doctors that they did not think that she had SARS. She reported that she continued to have a fever, muscle aches and a headache. She recalled that even regular doses of Tylenol would not break the fever. She worried that she had SARS and openly expressed this concern while in hospital. But they did not consider her to be a SARS case. As she told the Commission:

523. Health Worker No. 5 went to the emergency department on April 29, and was admitted to hospital on April 30.

524. North York General Hospital, SARS Task Force, "Droplet and contact precautions for staff," April 25, 2003.

525. Toronto Public Health records report the date for her onset of illness as April 29, 2003, but it was her recollection that she began to feel unwell on April 28.

> All the time they didn't believe that I had SARS. I think it was because they thought I wasn't looking after diagnosed SARS patients. I was just working on a regular unit, so they didn't think I could have it.

While Public Health and doctors did not ultimately classify her as SARS, Health Worker No. 5 remained under investigation for SARS for some time. A May 6, 2003, x-ray report included the notation:

> History: Rule out pulmonary embolism. Query SARS.[526]

The report also included the following summary of findings:

> These findings are inherently nonspecific. It could be caused by an inflammatory process as SARS, but also by any other infectious agents. The wedge-shaped opacity in the right lower lobe could also represent an infraction.[527]

Initially, her clinical picture was unclear. As a Toronto Public Health report noted:

> Her clinical picture also remains unclear (ie not following a SARS pattern) despite being 2 weeks into her illness now. She has had a fluctuating fever throughout, mild intermittent cough beginning May 7, some intermittent subjective SOB despite good 02 sats, and occasional pleuritic-type chest pain. She had multiple normal CXRs, then a CT May 7 showing LIL and RLL infiltrates. Her radiologic picture has not progressed. She is clinically improving on azithromycin, ceftriaxone, and steroids.
>
> She has had a negative stool PCR for coronavirus, other SARS work-up negative so far with more lab tests pending. Current clinical diagnosis is "unlikely to be SARS", persuing ? atypical presentation of TB and considering bronchoscopy.[528]

526. Report, dated May 9, 2003.
527. Report, dated May 9, 2003.
528. Email from Toronto Public Health to MOHLTC re: Urgent Canada SARS, May 12, 2003.

The physician in charge of her case at Toronto General Hospital said that while SARS was questioned from the outset, he was repeatedly assured that there was no possible epilink. As he told the Commission:

> So initially I thought that her symptoms were compatible with SARS, but we thought she had not had any contact with SARS-infected patients or a staff member, and that was based on information from Public Health. So initially, before we were able to contact Public Health and have it worked out, I thought, well, maybe she had had some contact, but then after that it was vigorously denied that she would have had any contact with them.

Her physician said that it never became clear during the course of her illness that she had SARS. In addition to not having an epilink, her clinical presentation was not clear and lab tests suggested a possible alternative diagnosis.

Compounding the difficulty of diagnosing SARS was the fact that there was still no quick, reliable test to confirm or rule out SARS. Although Health Worker No. 5's physician sent specimens to the National Microbiology Lab for antibody testing on April 30, on May 13, and again after her discharge on May 23, results of convalescent serology testing were not available until after the second outbreak was discovered, at which time an epilink to a SARS case was also discovered.[529]

Health Worker No. 5 remained classified as a person under investigation for her entire admission to hospital, from April 29, 2003 until May 16, 2003. Toronto Public Health reported that during this time they did extensive investigation of her case and could find no evidence to support any exposure to SARS. When she was

529. The problem with a lack of timely and reliable lab testing would plague the SARS response. Without a reliable lab test and timely access to results, treating physicians and public health had to diagnose SARS on the basis of clinical presentation and the existence of an epilink. Because the clinical presentation of SARS was similar to so many other diseases, including pneumonia, the epilink became an important part of the diagnostic too. However, as noted throughout this report, as we now know in hindsight, the epilink could not always be identified. It is critical during future outbreaks that lab testing be coordinated and communicated in an effective and timely manner. The Commission endorses the many thoughtful recommendations of Dr. Naylor and Dr. Walker, as well as reiterates its own recommendations, which underscore the importance of improved information systems to allow the exchange of necessary information between local health units, hospitals and provincial laboratories and to ensure that the provincial labs have the capacity and the resources to perform vital scientific research and testing that is critical during a health crisis.

released from hospital on May 16, 2003, she was released on home quarantine, and she recalled that Public Health spoke to her repeatedly while she was in hospital and continued to monitor her after her release from hospital, while she was on home quarantine.

Public health officials report that doctors at Toronto General Hospital did not believe she had SARS and that they agreed with that assessment. As in many cases that went undiagnosed in the days leading up to the second wave of SARS, her lack of an epilink appeared to be a key factor. As Dr. Henry told the Commission:

> They [Toronto General] didn't feel she had SARS, they didn't feel she was very sick. We carried out an epidemiologic investigation with North York, trying to figure out when she worked and was she on the SARS unit and was she around anybody who we knew was SARS. And there was something about the emerg, I don't remember the details. And in my discussions with Toronto General [Hospital], who were managing her, I think it was equivocal whether she had been anywhere that might have exposed her. We followed up with all of her contacts, of which there were not many as I recall. None of them became ill, and in some cases that was an indication that there was actually something that was going on, including her co-workers who we followed up with. Nobody else became ill. And my understanding was that the hospital's final decision was they didn't feel that she had SARS.

Health Worker No. 5's treating physician told the Commission that his opinion as to whether she had SARS fluctuated. One of the key factors was the repeated assurance that she had had no contact with a SARS case:

> Question: Do you recall if you ever expressed an opinion to Toronto Public Health that you ruled out SARS, or this is not SARS?
>
> Answer: I can tell you that my opinion fluctuated from time to time, but I don't think I ever was convinced at that time that it was SARS, but it would have varied because, of course, it was very normal basically, and later on she did develop infiltrates.

Question: So you weren't convinced it was SARS because the course was wrong and she didn't have infiltrates?

Answer: I think the big problem here is the lack of an apparent, according to them, the definition of an actual person that, if you look through the case definition, it is pretty specific, requiring a contact. They denied that there was any contact. In that sense, I can't say "SARS," but I have to …

Question: "They" being Toronto Public Health?

Answer: Yes, everybody. I think it's the same situation, there were people that were questioning whether there was SARS. I wasn't aware of that. I think I talked to [Dr.] Bonnie Henry, who was up there, who was looking after the psych patients I think, and that's why I wondered about microplasma … So the message we were getting from North York General, from the public health people at North York General, was, it was looking like all these people that might have been SARS were having an alternate explanation.

Although she was a nurse from a hospital that was treating SARS inpatients, there was no evidence that she had been in direct contact with a SARS case, hence there was no epilink. More will be said about the reliance on the epilink later. When SARS II hit, it would become apparent that experts' inability to identify an epilink did not mean a case could not be SARS. But at the time that this nurse was diagnosed, the epilink was still a key component of the case definition and simply being a visitor, patient or health worker in a hospital that had SARS patients was not considered an epilink.

Although Health Worker No. 5 was not classified as SARS, doctors and public health officials in May were unable to rule SARS out. She remained a person under investigation for SARS. So what was happening during this time at North York General Hospital concerning this case? Was North York General involved in discussions about the case, given that it involved a staff member and a possibility them having SARS? Even the possibility that she might have SARS was significant. If she did have SARS, it meant that there was an unidentified source of exposure in the hospital, a fact that should have been of considerable concern for those managing the outbreak at the hospital and for those on the front lines of the hospital who were treating patients and were to be on heightened surveillance for new SARS cases.

But no one at North York General seemed to have a good awareness of Health Worker No. 5's case. At the time of her admission and hospitalization, little was said about this case at North York General Hospital. The only reference to it can be found in the Task Force Minutes of May 1, 2003, which reports simply that a North York General Hospital nurse had been admitted to Toronto General under investigation for SARS.[530] Nothing further was said about her case in any later updates or Task Force minutes.

Dr. Mederski, the infectious disease physician at North York General who had assumed responsibility during SARS I, recalled hearing about this case through the hospital grapevine, as nurses working in the ICU had heard about their colleague's admission and had asked Dr. Mederski about it. She recalled contacting the treating physician at Toronto General Hospital and being assured that they did not believe that Health Worker No. 5 had SARS.[531] She took this message back to the hospital and other staff, reassuring them that it was not SARS. She told the Commission:

> I went back to the hospital staff, who were obviously concerned again for their own safety, and said, no, no, they do not think this is a case of SARS at all, but because she happens to be there, they are just putting her under investigation and so on and so on.

When Dr. Rose, vice-president at North York General Hospital, was asked about his knowledge of this case or any investigation into this case, he said:

> And other than one of them being recognized in the SARS Task Force, and one of them being noted in the minutes of the Management Committee, my understanding was that we had very little to do with those. There was contact tracing, there was no suggestion of transmission at the hospital. In particular, the nurse that went to the Toronto General was not SARS or they didn't feel she was SARS and therefore it had very little impact on us.

It was no secret among Health Worker No. 5's colleagues that she was off sick and that she was in hospital. When some of the ICU staff learned that Health Worker No. 5's condition was deteriorating, they again raised the issue with Dr. Mederski.

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530. North York General Hospital, SARS Task Force Steering Committee, Minutes of Meeting, May 1, 2003, 08:00 a.m., Main Boardroom – General Site.

531. The treating physician could not recall the specifics of conversations with Dr. Mederski and, although he said it was possible he spoke to her, could not confirm her recollection of the conversation. But he said that it is possible that he told her that Health Worker No. 5 did not have SARS.

Again Dr. Mederski contacted the treating physician at Toronto General for information, but the diagnosis or classification of SARS remained unclear.

North York General seemed unaware of Health Worker No. 5's case, and no alarm was raised over the possibility that she might have SARS. Dr. Mederski reported that once the nurse became a person under investigation, her understanding was that the investigation would be done through occupational health and infection control and that she was not part of this process:

> Once this patient was now declared a possible, under investigation case, then the normal processes would advise whom, then in place, to investigate from our end. But that would be funnelled through occupational health and infection control and I wouldn't be privy to that information necessarily.

But the coordinator of occupational health was not aware of Health Worker No. 5's case and was not involved in the investigation. As she told the Commission:

> Question: The next staff member was [Health Care Work no. 5], who was admitted to Toronto General at the end of April under suspicion for SARS. Were you involved at all in her case?
>
> Answer: I wasn't.
>
> Question: Do you recall if there was an investigation into her illness?
>
> Answer: I don't.
>
> Question: Did you ever review or receive a report regarding her illness?
>
> Answer: No.

Infection control, which was aware of her case, reported that they could not get a diagnosis for Health Worker No. 5 but that Public Health determined she had no contacts. That appeared to be the extent of their knowledge about the case. As one memeber of the infection control team said:

> Question: There was another health care worker, who was admitted to Toronto General Hospital at the end of May. Do you remember when you became aware of that?

Answer: I know that we couldn't get a diagnosis from her. I know about her. I know that I even called the infection control practitioner down there, and they didn't know for sure, but again, that epilink, because she worked in the ICU, she didn't work with known SARS patients, that I understand. Certainly, we wondered if maybe with her cultural background, that maybe she came into contact with someone out in the community. And it wasn't until afterwards that they found that, indeed, one of the patients from 4 West went to ICU, and she looked after that patient … But as I say, it was all put together afterwards.

Question : When she was admitted to hospital, what was your understanding of what she was in hospital for?

Answer: Well, with fever and respiratory illness, I guess. And you know, they have to rule out SARS, but they couldn't we couldn't get a diagnosis from them.

Question : So was there an investigation done at that time within North York as to her possible source of illness?

Answer: Well, I guess that's when they determined that she didn't work with SARS patients, so once there would have been a link, the Public Health person that was assigned to our hospital was aware of that and she probably was involved with looking at potential [links].

No one at North York General Hospital seemed aware of the details of Health Worker No. 5's case and of the possibility of unexplained transmission, potentially through an unidentified source.

Yet during this time, Health Worker No. 5 was being treated in a SARS unit, in isolation, with precautions. While she was not classified as a suspect or probable case, she was considered a person under investigation. She remained under investigation until May 16, 2003, when she was classified as "does not meet case definition." This did not mean that she did not have SARS or could not have SARS; it meant that she did not meet the case definition for SARS. Between April 30 and May 16, 2003, Public Health was actively monitoring her case and attempting to identify her contacts and

any possible exposure. As Dr. Henry told the Commission:

> And then she [Health Worker No. 5], I think, was designated as "does not meet the case definition" at some point. But in terms of the outbreak management, she was treated in isolation, she was managed as if she had the disease. We followed up on all of her contacts. She did not transmit to anyone else.

The problem was not the failure to categorize her as suspect or probable SARS or even the failure to diagnose her as SARS; it was the lack of information provided to North York General and the mistaken impression that North York General had that she had been ruled out as SARS. For public health classification purposes, she was ultimately ruled out because she did not meet the case definition. But practically speaking, that is very different from saying she did not and could not have SARS. The key feature that precluded her from meeting the case definition was the lack of epilink. But as we now know, the epilink wasn't missing; it was simply not identified at the time.

Because Health Worker No. 5 was not classified as SARS for public health purposes, this was mistakenly taken to mean that she was 100 per cent not a SARS case. There appeared to be no recognition within North York General that they may have a staff member who had contracted SARS through an unknown, unidentified exposure. Had they considered this, however remote the possibility, and had there been an extensive investigation into all of her contacts, would they have identified Patient B, the orthopedic patient from 4 West? Would that have led to an earlier detection of SARS on 4 West? It is impossible to answer these questions in retrospect.

It would be speculative to suggest that had Health Worker No. 5 been properly diagnosed, her case alone may have led investigators earlier to the simmering outbreak on 4 West. The link became obvious in retrospect, once associated with a cluster of illness on 4 West. It is impossible to know if and how the result would have been different had officials at North York General Hospital known that she was a SARS case.

What can be said, however, is that if the hospital had known there was a staff member under investigation for SARS and that, while there was no known epilink, this staff member was being managed and treated as a SARS case, it should have alerted them to the possibility of unexplained transmission within the hospital. This in turn might then have factored into their decision to relax precautions six days later, on May 7, 2003, in most areas of the hospital. It also might then have factored into the level of

awareness and heightened vigilance within the hospital to look for other possible SARS cases.

This is not to ignore the real and human possibility of a misdiagnosis or misidentification of SARS. As many doctors point out, SARS was very difficult to diagnose. Its symptoms resembled many other illnesses, including common pneumonia, and there was no test to establish whether someone actually had SARS. Added to all this, it was a new disease, about which experts were learning more and more as time passed.

The problem was not one of requiring perfection. The problem was that the inability to slot a patient into a very specific case definition, defining a new disease about which everything was still not known, somewhere along the way got translated into meaning that a case could not be SARS or that there was no possibility of SARS. As will be seen later in the story of North York General, staff, including physicians who were seeing patients with respiratory symptoms in May, operated under the erroneous belief that there had been no new SARS cases since early April and that SARS was no longer around.

The case of Health Worker No. 5 yet again reveals confusion around the role of public health and the role of the hospital. That those within North York General were so uninformed about the status of one of their staff members also reveals weaknesses in the chain of protection. No hospital should be left in the dark while one of its staff is being investigated for an infectious disease that could have safety ramifications for patients and other staff, as was the case in SARS.

As noted above, after the second outbreak was announced on May 23, 2003, and a review of cases related to North York General was begun, Health Worker No. 5 was retrospectively diagnosed with SARS. Later investigation revealed that her likely source of exposure was the patient in the ICU, a patient from 4 West, the unit that later became the epicentre of the second outbreak.

As April came to an end, things yet again appeared to be returning to normal. Although five[532] health workers from North York General had contracted SARS during April, it seemed to the hospital that their illnesses were isolated events and that, on the whole, the hospital had been successful at continuing to treat patients, including SARS patients, without transmission to staff and other patients. But the

532. Health Worker No. 3 is classified as a suspect case by the Ministry of Health and Long-Term Care.

question of whether there was unidentified exposure to SARS in North York General Hospital would be raised again, when three patients on the North York General psychiatric ward developed symptoms consistent with SARS.