Chapter 2
Horizon and Vitalité Health Networks and the Department of Health
Infection Prevention and Control in Hospitals

Contents

Infection Prevention and Control in Hospitals

Summary

Introduction

2.1 The Department of Health (Department) is responsible for limiting infections in New Brunswick. The two Regional Health Authorities (RHAs) have primary responsibility for patient safety in the hospitals they administer, and the Department works with the RHAs to implement infection prevention and control. Infection prevention and control in provincial hospitals was the focus of our audit.

Significance

2.2 Healthcare-associated infections:

- *"are common - One out of every 10 patients admitted to hospital will get one";*
- *"can also be very serious - about 12,000 deaths in Canada are caused by these infections each year"*[1]*;*
- Such infections do occur in New Brunswick. For example, 228 cases of *Clostridium difficile* infection (CDI) and three cases of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia were reported for the 2013/2014 fiscal year.

Financial impact

2.3 In fiscal 2012-2013, approximately $1.5 billion[2] was expended for hospital services, representing more than 57% of the Department's budget. Literature states:

[1] Website – Department of Health – *How To Help Prevent Healthcare-Associated Infections: A Patient and Family Guide*, April 2012 (Pamphlet prepared by Canadian Patient Safety Institute).
[2] Department of Health Province of New Brunswick, *2012-13 Annual Report*, December 2013.

- *"health care associated infections have a significant impact on health care spending"*[3]*;*
- *"Outbreaks result in significant cost to the organization"*[4]*;*
- One study, *"estimated that one-third of health care associated infections in the hospital setting could be prevented if hospitals instituted the essential components required for Infection Prevention and Control Programs"*[5]*;* and
- *"Infection prevention and control programs have been shown to be both clinically effective and cost-effective, providing important cost savings …"*[6]

Infection prevention and control program

2.4 The goals of an infection prevention and control program are:

- *"**to protect clients/patients/residents from HAIs** **[healthcare-associated infections]**, resulting in improved survival rates, reduced morbidity associated with infections, shorter length of hospital stay and a quicker return to good health; and*
- ***to prevent the spread of infections** from patient-to-patient, from patients to health care providers, from health care providers to patients, from health care providers to health care providers and to visitors and others in the health care environment."* [7]

[3] Ontario Agency for Health Protection and Promotion. Provincial Infectious Diseases Advisory Committee. *Best Practices for Infection Prevention and Control Programs in All Health Care Settings*, 3rd edition. Toronto, ON: Queen's Printer for Ontario; May 2012.
[4] Ibid.
[5] Nosocomial and Occupational Infections Section - Division of Blood Safety Surveillance and Health Care Acquired Infections - Centre for Communicable Diseases and Infection Control - Public Health Agency of Canada, excerpts from *Essential Resources for Effective Infection Prevention and Control Programs: A Matter of Patient Safety: A Discussion Paper*.
[6] Ontario Agency for Health Protection and Promotion. Provincial Infectious Diseases Advisory Committee. *Best Practices for Infection Prevention and Control Programs in All Health Care Settings*, 3rd edition. Toronto, ON: Queen's Printer for Ontario; May 2012.
[7] Ibid.

2.5 An infection prevention and control program (program) typically involves both routine practices[8] and additional precautions. Routine practices are required by everyone for every patient every day and include actions such as hand hygiene and the proper handling of sharp instruments such as needles (sharps). Our audit focused on routine practices.

Our audit

2.6 Our audit included both RHAs (Horizon and Vitalité). We visited eight hospitals of various sizes and from different zones throughout the province.

- In Horizon, we visited five hospitals representing 68% of their acute-care beds (Upper River Valley Hospital, Miramichi Regional Hospital, Dr. Everett Chalmers Regional Hospital, Saint John Regional Hospital, and Sackville Memorial Hospital).
- In Vitalité, we visited three hospitals representing 55% of their acute-care beds (Chaleur Regional Hospital, Dr. Georges-L.-Dumont University Hospital Centre, and Grand Falls General Hospital).

2.7 We select our audits on the basis of relevance, significance and risk with the goal of having a positive impact. We chose to do this audit for several reasons, including the following:

- The lack of appropriate infection prevention and control can have a severe consequence up to and including death of the patient.
- Hospital-acquired infections affect the condition and comfort of the patient. They also cause increased costs due to longer hospital stays, additional procedures, etc. Infection control equates to cost control.

[8] **Routine Practices (RP):** The system of infection prevention and control practices recommended by the Public Health Agency of Canada to be used with all clients/patients/residents during all care to prevent and control transmission of microorganisms in all health care settings. (*Infection Prevention And Control Audit for Routine Practices - Toolkit Version 2*, September 2009© CHICA-Canada; Revised September 28, 2012)

Key findings:

✓Responsibilities are clear

2.8 We concluded **the Department's and the Regional Health Authorities' responsibilities for infection prevention and control in hospitals are clear**.

✓There are infection prevention and control programs in hospitals

2.9 We also concluded **there are active infection prevention and control programs in hospitals.** Such programs include:

- ✓ Hand hygiene gel being present at most public entrances and throughout hospitals;
- ✓ Personal protective equipment is widely available throughout the hospitals;
- ✓ Surveillance is done daily by the Infection Prevention and Control Professional (ICP) to identify possible infections early and ensure procedures to mitigate risks;
- ✓ Environmental services (housekeeping) staff members, cleaning carts and garbage receptacles are present throughout hospitals; and
- ✓ Stay home if sick signs were present at many entrances and throughout hospitals.

2.10 ✓ Accreditation[9] reports also indicate each RHA has an active program.

✗ There are deficiencies in infection prevention and control practices

2.11 We observed deficiencies during our visits to eight hospitals. To serve as examples, we provide details and photos on some of the reported infection prevention and control deficiencies:

- ✗ **Non-compliance with hand hygiene policies** - Vitalité's hand hygiene policy states, "*Hand hygiene is the single most important measure for preventing infections, reducing nosocomial infections by 50 – 80%."*[10];

[9] Accreditation Canada's Standards for Infection Prevention and Control is explained in **paragraph 2.78**
[10] Vitalité Health Network, *Infection Prevention and Control Manual – Hand hygiene*, May 2011.

- **biomedical waste was improperly stored**;
- **overcrowding in hemodialysis and oncology areas**, whose patients have an increased risk of acquiring an infectious disease;
- **no cleaning between patients treated in the same chemotherapy chair** - Chemotherapy patients have an increased risk of acquiring an infectious disease due to being immunocompromised.
- **isolation inadequacies** (use of personal protective equipment, carts supplies, signage, etc.)
- **linen deficiencies** (clean laundry arriving at hospitals without being properly covered, linen delivery trucks not properly cleaned, uncovered clean linen transported through the hospital, inadequate washing or replacing of the cloth cart covers protecting clean linen, excessive linen inventories, improper storage of clothing worn in the operating room, etc.);
- **inadequate separation of clean and dirty items and storage space** (clean linen stored in poor locations, inadequate separation within nursing units and Medical Device Reprocessing units, equipment and testing supplies stored in patient's washrooms, poor placement of soiled linen hampers, etc.);
- **permanent placement of patients in beds in the corridor**;
- **inadequate cleaning, labelling and storage of shared equipment**;
- **insufficient signage** - For example, in one hospital we asked why hand hygiene signs were not prevalent. We were told the hospital had approximately 500 signs that had been awaiting installation for over a year. A few days later, we observed the signs being installed throughout the hospital; and
- **construction areas not properly sealed-off** from patient areas (with proper ventilation and signs restricting access).

2.12 Based on the number and variety of deficiencies we observed, **we believe there is inadequate monitoring of infection prevention and control policies and practices in hospitals**. Many of the deficiencies were obvious during our hospital tours. Given many of the identified deficiencies relate to healthcare workers not complying with infection prevention and control policies (hand hygiene, use of personal protective equipment, etc.), **we also conclude the RHAs need to strengthen enforcement of policies and procedures**.

× There are inconsistencies within and between the RHAs' infection prevention and control programs

2.13 Hospitals around the Province provide different services and patients may get services at more than one hospital. We believe New Brunswickers should be provided with consistent quality services regardless of the hospital, including a consistent infection prevention and control program.

2.14 However, we concluded **there are inconsistencies within and between the RHAs' infection prevention and control programs delivered in the hospitals.** In comparison to other provinces, **there is limited provincial guidance by the Department** regarding infection prevention and control.

2.15 Our observations about specific **inconsistencies within** Horizon's and/or Vitalité's programs include the following:

- ***Program policies and procedures are different in each zone[11] (and between the two RHAs).*** Given it has been six years since the RHAs were established, we expected further progress in standardized policies and procedures.
- ***Inconsistencies in ICPs' understanding and education*** We believe all ICPs should have specialized training in infection prevention and control.
- ***The allocation of the ICPs does not appear***

[11] "zone" refers to a geographical area. Both Horizon and Vitalité contain four zones.

consistent. Based on the literature and our findings, the ICP workload appears excessive.

- ***There are variations in the ICPs' work in different zones.*** For example their presence in the nursing units: The ICP's work in the nursing units typically involves following-up on cases identified during the ICP's surveillance work and performing audits (monitoring for compliance with infection prevention and control standards). We believe the ICP's work in the nursing units is very important in preventing the spread of infections between patients. We learned there is inconsistency in the frequency of the ICPs' visits in the nursing units. All zones reported less frequent visits to nursing units in remote hospitals, and we were informed one hospital is visited by the ICP only once every three months. (An ICP may be responsible for one or more hospitals, depending on the size of the hospital.) A second example involved hemodialysis clinics. We expected the clinics to be visited regularly given patients receiving hemodialysis are considered to have a higher risk of getting an infection. However, we found this was not the case. While for one location the ICP reported visiting approximately three times per year, at another location, the ICP had visited twice in the past seven years.
- ***Inconsistencies with isolation gowns may result in the spread of infections.*** The inconsistencies in appearance, location and labelling of isolation gowns used throughout hospitals can cause confusion, which may result in the spread of infections; and
- ***Administrative support and expert resources are not available in each zone.*** We believe the administrative employee provides valuable support to the ICPs by allowing them to use their time on more demanding professional infection prevention and control activities, such as monitoring for compliance with standards. Also without access to specialists (infectious disease physicians or medical microbiologists), it is possible for an infectious

outbreak to occur or for an existing outbreak to become more severe because proper preventive and containment practices were not promptly exercised.

2.16 Inconsistencies between Horizon's and Vitalité's programs relate to the following:

- regional policies and procedures for the program;
- requirements for healthcare workers to take refresher training on infection prevention and control routine practices and hand hygiene;
- hand hygiene policies, signage and compliance rates;
- public entrances having good infection prevention and control signage and adequate supplies (hand hygiene gel and masks);
- environmental services (housekeeping) policies and procedures with adequate monitoring;
- MRSA screening and monitoring;
- infection prevention and control committees; and
- performance indicators for the program.

✓There is monitoring of some routine practices

2.17 From our observations, we found **there is monitoring of some routine practices in hospitals**. For example, many hospitals have been auditing hand hygiene for a number of years, and ICPs also audit the use of personal protective equipment (PPE) and isolation rooms.

✗Monitoring for compliance with routine practices needs improvement

2.18 However, we also found:

- ✗ Hand hygiene auditing needs improvement to provide accurate information. A standard practice with documented procedures and training of new auditors is needed;
- ✗ Certain routine practices are not monitored, such as linen and proper cleaning of shared equipment; and
- ✗ In general, there are no policies and procedures for auditing infection prevention and control programs.

2.19 We concluded **monitoring for compliance with**

routine practices needs improvement in order to ensure minimum standards of infection control are being met in all hospitals.

Performance monitoring and reporting

2.20 We found **the Regional Health Authorities adequately measure the effectiveness of its infection prevention and control programs**. The Department publicly reports on CDI and MRSA bacteremia in our hospitals. However, **the Regional Health Authorities should enhance their public reporting** by reporting on hand hygiene compliance and other program performance indicators. We found hand hygiene was not done when required by policy and both Horizon and Vitalité's self-auditing results show compliance rates below their stated goals. (See **Appendices V** and **VI**.)

Recommendations

2.21 Our recommendations to the Department and the RHAs are presented along with their responses to each recommendation in **Exhibit 2.1**.

Conclusion

2.22 Our objective for this audit was *to determine if the Department of Health and the Regional Health Authorities have an infection prevention and control program to protect people from hospital-acquired infections.*

2.23 We concluded the two Regional Health Authorities have infection prevention and control programs to protect people from hospital-acquired infections. However, our work identified numerous deficiencies. We have made recommendations for corrective action.

Exhibit 2.1 - Summary of Recommendations

2.1	**Recommendation**

2.112 We recommend the Horizon and Vitalité Health Networks address deficiencies in infection prevention and control practices within their respective programs, including but not limited to those reported in Exhibit 2.9 such as:

- **hand hygiene not done when required by policy, healthcare workers wearing rings and bracelets, areas with inadequate signage and gel;**
- **biomedical waste improperly stored;**
- **overcrowding in hemodialysis and oncology areas whose patients have an increased risk of acquiring an infectious disease;**
- **no cleaning between patients treated in the same chemotherapy chair;**
- **isolation inadequacies (signage, carts supplies, use of personal protective equipment, etc.);**
- **linen deficiencies (clean laundry arriving at hospitals without being properly covered, linen delivery trucks not properly cleaned, uncovered clean linen transported through the hospital, inadequate washing or replacing of the cloth cart covers protecting clean linen, excessive linen inventories, improper storage of clothing worn in the operating room, etc.);**
- **containers of disinfectant wipes left open;**
- **inadequate separation of clean and dirty items and storage space (clean linen stored in poor locations, inadequate separation within nursing units and Medical Device Reprocessing units, equipment and testing supplies stored in patient's washrooms, poor placement of soiled linen hampers, etc.);**
- **doors missing or being left open;**
- **permanent placement of patients in beds in the corridor;**
- **inadequate cleaning, labelling and storage of shared equipment;**
- **insufficient signage (public entrances) and labelling ("clean" and "soiled" items, storage areas, etc.); and**
- **construction areas not properly sealed-off from patient areas (with proper ventilation and signs restricting access).**

Response from Horizon	**Timeline for Implementation:** Work Ongoing at local area level. Regional audits to commence in September 2015. New contract for linen delivery truck to commence in June 2015.

Horizon Health Network accepts and agrees with this recommendation.

In response to the visit by the Office of the Auditor General to several of our facilities Horizon Infection Prevention and Control (IPC) developed a work plan to address deficiencies identified during the audit process. Work on many of these deficiencies has been completed at the local Area Level and work remains ongoing on outstanding issues. On a go forward basis Infection Prevention and Control will audit all hospitals to assess compliance with IPC practices to ensure recommendations put forth in this report are met.

- A response is provided under recommendations 2.115 and 2.180 with regards to hand hygiene not done when required by policy, healthcare workers wearing rings and bracelets. A new dress code policy will be introduced in May 2015 with renewed emphasis on policy compliance including the wearing of jewelry by clinical staff. As the Auditor General's Report indicates, "most public entrances at Horizon facilities had good signage relating to Infection Prevention and Control and adequate supplies (hand hygiene gel and masks)". The introduction of 'flags' to hand sanitizer dispensers have been implemented throughout Horizon to ensure timely replenishing of hand sanitizer in all areas.
- Biomedical Waste deficiencies pertaining to improper storage and disposal have been corrected. IPC continues to ensure proper processes are being followed. Auditing of waste management will be conducted as per response provided under recommendation 2.180.
- Significant space challenges exist in most hospitals across Horizon as these facilities were constructed during a different era in health care delivery. Over the years, standards and best practices associated with construction of healthcare facilities have evolved and most of our buildings do not meet the current space requirements. This is a critical issue and one that is difficult to address. Horizon is reviewing proposals for enhancement to outpatient oncology services due to the increasing demand. Horizon's

Exhibit 2.1 - Summary of Recommendations – continued

Response from Horizon (continued)

intent is to look at the appropriate levels of service from a regional perspective. At one facility work is underway to complete an RFP to have an external consultant onsite to develop a Master Space Plan. In the interim, an area adjacent to the outpatient oncology clinic has been identified and work is ongoing with space planning to provide additional space for oncology. Additional space requirements for the hemodialysis clinic will also be included in this Master Space Plan, due to current needs and anticipated growth of this patient population.

- Renovations to separate Soiled and Clean Utility Rooms have been completed in the fall of 2014 at one facility and an evaluation is underway at a second facility. Renovations are in progress to provide an alternate clean linen storage room to address the issue of clean linen stored in poor location. This project has been identified as a priority.
- Horizon is compliant with the cleaning of chemotherapy chairs between patients as per infection control standards.
- Isolation room and Personal Protective Equipment (PPE) audits are completed as per response provided under recommendations 2.180.
- Meetings have been ongoing with FacilicorpNB Linen Services. Linen issues such as excess linen, clothing for the OR improperly stored, and excessive handling of linen have been resolved with the implementation of a cart exchange system. The issue of linen being delivered and not properly covered has been addressed and resolved. Negotiations are underway to secure a new contract for linen delivery to ensure linen standards are being met. FacilicorpNB has consulted IPC re: protocol for cleaning and disinfection of delivery truck.
- Horizon Health Network policy *Cleaning/Disinfection of Non-Critical Patient Care Equipment and Electronic Devices* notes the following regarding disinfectant wipes: "Use disinfectant wipes for small equipment items only. Ensure that wipes are available at point-of-care and that the containers remain closed between uses. Lids left open dry out the wipes, which then are not effective as a disinfectant." Regular monitoring of compliance with this policy by managers and Infection Prevention and Control Professionals will support Horizon in meeting this recommendation.
- Horizon Medical Devices Reprocessing Standards are currently in development and include best practices regarding reprocessing and storage of scopes. Audits have been conducted by IPC to assess compliance with standards. In the Spring 2015, the Ambulatory Care Network formed a regional working group to review audit recommendations and action plans to address deficiencies noted. The Department of Health, in collaboration with both Regional Health Authorities, have issued a policy statement which notes that a standardized training and certification for all reprocessing technicians is required to ensure patient safety and minimize the risk of adverse events in patient care.
- Soiled Utility Rooms and Door to OR Area propped/or left open - Departmental Managers have been advised to keep doors closed at all times. IPC to monitor during Patient Care Unit rounds.
- Horizon does not permanently place patients in beds in the corridor. In the event of overcapacity, patients may be temporarily placed on a stretcher in the corridor until a bed is available. Processes are in place for daily review of patient placement. Overcapacity conditions have increased and are difficult to resolve. This is a reality until we find mechanisms to address Alternate Level of Care patients in acute care beds and overcapacity issues in our Emergency Departments.
- Environmental Services (EVS) implemented the Clean Label Flagging Process in January 2014. A green label "I Am Clean" is attached to mobile items that have been cleaned by EVS and stored in the Clean Utility area. This alerts the frontline healthcare worker that equipment has been cleaned and is safe to be used with another patient. When the equipment is reused, the label is removed.
- To better serve our patients and public, a Signage Network has been formed to ensure a standardized comprehensive signage program exists in all facilities. Clean and Soiled Utility Room Signage has been installed as visual reminders to staff.
- As the Auditor General's Report indicates regarding Horizon, "ICPs are members of the construction and renovations local area committees and ensure all projects are sealed off from patients areas with proper ventilation and with signs restricting access as per CSA standards".

Exhibit 2.1 - Summary of Recommendations – continued

Response from Vitalité	**Timeline for Implementation:** June 2017
Vitalité Health Network agrees with this recommendation and wishes to point out that ongoing improvement of services is one of its strategic priorities. Given that the report from the Office of the Auditor General is non-nominal, the Network will set up a team to coordinate an audit of all its points of service/nursing units in order to clearly identify areas with deficiencies. To do this audit, the Network will create tools taking standards and best practices into account. Following this comprehensive audit, a detailed action plan will be prepared for each facility/point of service/unit. Results obtained will be closely monitored. This strategy will allow the Network to address deficiencies throughout its facilities. It should be noted that some deficiencies were addressed during or following the visits. Others were already included in a recovery plan. As regards hospital linen deficiencies, the Network is currently working with FacilicorpNB on the implementation of a specialized laundry software to support a "cart exchange" model. The new process, which is being implemented, will improve hospital linen supply management. Efforts will be made to adjust volumes to the demand and all linen supplies will be replaced regularly. As for permanent placement of patients in the corridors, the Network wants to stress that this practice is currently neither widespread nor encouraged. It is a temporary practice in response to a bed shortage at one point in time. The various structural deficiencies noted (e.g. overcrowding in hemodialysis and oncology areas, inadequate separation of clean and dirty items, missing doors) will also be reviewed. The Network will take into account the population's needs, facilities' physical restraints, and renovation projects under way or planned.	

Exhibit 2.1 - Summary of Recommendations - continued

2.1 cont'd	**Recommendation**		
2.113 We recommend the infection prevention and control professionals and all managers do regular "walk-arounds" observing for compliance with policies and standards, reporting deficiencies to the units/departments, and ensuring corrective action is taken by those units/departments. Deficiencies should be monitored and reported to appropriate committees and/or department heads.			
Response from Horizon	**Target Date for Implementation:** Work is ongoing at local area level. IPC involvement in M.Y. Place walkabouts to commence in the Fall 2015.	**Response from Vitalité**	**Target Date for Implementation:** June 2017
Horizon Health Network accepts and agrees with this recommendation and acknowledges that regular walk rounds provide all Stakeholders with the opportunity to mitigate risks. IPC visits Patient Care Units on a regular basis although the frequency of unit visits differ from Area to Area based on departmental operational priorities. Ongoing follow-up occurs at the Local Areas and Regional Infection Prevention and Control Committees. Findings are also reported to the appropriate manager/ department heads. In the fall of 2014 the initiative "M.Y. (Mine & Yours) Place" walkabout was piloted in Horizon facilities. This initiative provides Horizon with a three-way overview from maintenance, environmental services (EVS) and logistics perspectives. Clinical and non-clinical areas are inspected, easy-to-fix cleanliness or maintenance issues are identified and immediate corrective actions are taken. Clinical staff is consulted with a view of coordinating both short and long-term schedules for maintenance and other relevant work. IPC will participate in the M.Y. Place walkabouts starting in the Fall 2015. The IPC component will be evaluated at 3 month post implementation. This may provide IPC with further opportunities to assess compliance with Routine Practices and standards.		Vitalité Health Network approves and agrees with this recommendation. The Network recognizes the importance of monitoring compliance with policies and standards and reporting noncompliance. This practice, which is used by some, is however not systematically applied in all units/facilities and by all infection prevention and control professionals. Consequently, the Network commits to identifying the frequency of visits required from infection prevention and control professionals, monitoring compliance, and identifying elements that should be monitored on an ongoing basis. Also, a mechanism will be identified as part of continuous quality improvement to implement manager walk rounds and identify the purpose of these rounds.	

Exhibit 2.1 - Summary of Recommendations - continued

<table>
<tr><th>2.1 cont'd</th><th colspan="3">Recommendation</th></tr>
<tr><td colspan="4">2.114 In smaller hospitals without on-site managers, we recommend the infection prevention and control professional and unit/department managers perform site visits on a regular basis. These visits will provide the opportunity to better monitor the smaller facility. Also, it will provide staff members with the opportunity to ask questions and identify challenges with which they are dealing.</td></tr>
<tr><td>Response from Horizon</td><td>Target Date for Implementation: Work is ongoing at local area level. Regular visits by offsite managers to commence in Spring 2015.</td><td>Response from Vitalité</td><td>Target Date for Implementation: June 2017</td></tr>
<tr><td colspan="2">Horizon Health Network accepts and agrees with this recommendation. IPC professionals are assigned to facilities and conduct visits, provide support and consultation to health care workers within smaller facilities and are available to ensure practices are in accordance with standards.

Regular visits performed by managers from other departments will provide the opportunity to incorporate staff feedback and better monitor the smaller facility. This will strengthen our ability to fully meet this recommendation.</td><td colspan="2">Vitalité Health Network accepts and agrees with this recommendation. Measures presented in recommendation 2.113 will promote regular visits by infection prevention and control professionals and managers to smaller hospitals with no professionals or managers on site.</td></tr>
<tr><td colspan="4">2.115 We recommend the Horizon and Vitalité Health Networks enforce compliance with infection prevention and control policies by all staff members, in all hospitals.</td></tr>
<tr><td>Response from Horizon</td><td>Target Date for Implementation: Work is ongoing at the local area level. Renewed emphasis on enforcement of policy compliance will commence in May 2015 with education sessions.</td><td>Response from Vitalité</td><td>Target Date for Implementation: June 2017</td></tr>
<tr><td colspan="2">Horizon Health Network accepts and agrees with this recommendation. Horizon has a Progressive Discipline Policy which notes that managers are responsible for policy enforcement. When an employee violates Horizon policy, exhibits inappropriate behavior or unsatisfactory performance, a system of progressive discipline is utilized. Regular monitoring of compliance with infection prevention and control policies by managers and Infection Prevention and Control Professionals will support Horizon in meeting this recommendation. Staff education is reinforced through face to face interaction as well as through our E-Learning Modules, and annual compulsory programs requirement.</td><td colspan="2">Vitalité Health Network clearly indicated in its policy and procedure management policy that managers are responsible for ensuring that staff members understand, respect and comply with policies and procedures and that they receive training if necessary. Also, staff members must comply with the rules and regulations of the organization, failing which they could be subject to corrective and disciplinary action.

Consequently, the Network agrees with this recommendation and commits to devising strategies to ensure that the staff comply with infection prevention and control policies.</td></tr>
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Exhibit 2.1 - Summary of Recommendations – continued

2.1 cont'd	**Recommendation**
2.146 We recommend the Department of Health in consultation with the Horizon and Vitalité Health Networks develop a provincial infection prevention and control program and strategy for use in all New Brunswick hospitals. This should address both routine practices and additional precautions. The provincial program should include, but not be limited to, the following: • **documented provincial infection prevention and control policies, standards and practices;** • **a strategy for monitoring compliance with infection control standards; and** • **a comprehensive hand hygiene strategy.**	
Response from the Department of Health	**Target Date for Implementation:** Environmental scan of Ministries of Health May-June 2015. Framework outline by March 31, 2016. Regular progress reports to be received beginning October 1, 2015.
The Department of Health accepts and agrees with this recommendation. The Department will lead the development of a Provincial framework to guide the infection prevention and control programs within the Regional Health Authorities. National guidelines and standards will be the basis of the framework. The framework will include performance monitoring. The Department will work collaboratively with the Regional Health Authorities to implement the framework. The Department of Health will require regular updates on progress addressing the deficiencies and inconsistencies identified in this report from the Regional Health Authorities.	
Response from Horizon	**Response from Vitalité**
Horizon Health Network agrees with this recommendation and encourages collaboration amongst healthcare providers to promote a coordinated provincial infection prevention and control program and strategy for all New Brunswick hospitals. Horizon has an active IPC Program with direct involvement from Infectious Diseases Specialists and Medical Microbiologists. Policies and procedures are guided by various national and international standards and best practice documents. Additionally, a Regional IPC Committee with physician leadership and involvement has oversight of all policies and practices throughout the Health Network.	Vitalité Health Network agrees with this recommendation and commits to working with the Department of Health in developing a provincial framework. It should be noted that a regional infection prevention and control program is available in the Network. Policies reflecting best practices and recognized Canadian standards are also in place.

Exhibit 2.1 - Summary of Recommendations – continued

<table>
<tr><th>2.1 cont’d</th><th colspan="3">Recommendation</th></tr>
<tr><td colspan="4">2.147 We recommend the Horizon and Vitalité Health Networks engage sufficient resources for their programs to ensure all zones have access to Infection Prevention and Control Professionals (ICPs), experts and administrative support.</td></tr>
<tr><td>Response from Horizon</td><td>Target Date for Implementation: Recruitment is ongoing. IPC resources will be adjusted pending 2015/16 budget approval.</td><td>Response from Vitalité</td><td>Target Date for Implementation: June 2017</td></tr>
<tr><td colspan="2">Horizon Health Network accepts and agrees with this recommendation. In July 2014, a proposal was submitted for adequate staffing to support an effective Infection Prevention and Control program. The proposed budget for 2015/16 includes new part-time positions for IPC nurses and Administrative Support. A long-term plan will be required to reach the target IPC staffing level in all facilities as budget allows in alignment with National Benchmarks.

Experts/ Medical Staff Recruitment: An Infectious Disease Specialist to be based in Moncton has been recruited and will be starting in the fall 2015. Another Infectious Disease Specialist has been recruited for the Saint John area and will be starting in the fall 2016. Infectious Diseases Consultations, clinics and infection prevention control support will be provided in Miramichi and Fredericton areas. Recruitment efforts are ongoing to fill vacant Medical Microbiologist positions in Moncton and Fredericton.</td><td colspan="2">Vitalité Health Network accepts and agrees with this recommendation. It should be noted that since the visit from the Office of the Auditor General, all vacant positions have been posted. Two positions were filled and there are recruitment challenges in regard to one position.

Also, research on resource standards is under way and will be carefully reviewed. The Network will implement a process to ensure access to experts for all zones. Solutions are being looked at.

A review of administrative support needs for the infection prevention and control program was undertaken. At the end of this process, measures will be proposed to better meet the program needs.

To act on this recommendation, the Network will discuss with the Department of Health to obtain adequate financing, thus ensuring access to additional resources.</td></tr>
<tr><td colspan="4">2.148 We recommend the Vitalité Health Network require their ICPs obtain specialized training in infection prevention and control.</td></tr>
<tr><td>Response from Vitalité</td><td colspan="3">Target Date for Implementation: June 2017</td></tr>
<tr><td colspan="4">Vitalité Health Network agrees with this recommendation. At this time newly hired permanent employees must undergo specialized training in the first two years of hiring if they did not receive it before starting to work. This requirement is included in job postings and job descriptions.

The Network recognizes that specialized training leading to basic certification is offered in English only and that this may be an additional challenge for French-speaking employees working in French-speaking environments.

Consequently, the Network will ask the Department of Health’s collaboration to make this type of training available to employees in French.</td></tr>
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Exhibit 2.1 - Summary of Recommendations – continued

<table>
<tr><th>2.1 cont’d</th><th colspan="3">Recommendation</th></tr>
<tr><td colspan="4">2.149 We recommend the Horizon and Vitalité Health Networks address the inconsistencies within their respective programs, including but not limited to:
• inconsistencies in ICPs’ knowledge of appropriate practices and standards;
• variations in the ICPs’ work in different zones; and
• inconsistencies with isolation gowns.</td></tr>
<tr><td>Response from Horizon</td><td>Target Date for Implementation: Work is ongoing at local area level. Standards development project plan will commence in January 2016. Isolation gown storage and standardization will be completed by September 2015.</td><td>Response from Vitalité</td><td>Target Date for Implementation: June 2017</td></tr>
<tr><td colspan="2">Horizon Health Network accepts and agrees with this recommendation. Horizon uses a Standards Model/ Standards Development for Clinical Networks and Services. The Standards Model is based on a structure-process-outcome framework to facilitate standardized care, clinical practice, and services across the health authority. In October 2012, Horizon’ Standards Model was recognized by Accreditation Canada as a Leading Practice. A request for Infection Prevention and Control Standards development was submitted in 2013 and a project plan is scheduled for implementation in January 2016. This initiative will assist us in addressing the inconsistencies within our IPC program.

An integrated IPC Service has been implemented to ensure alignment and standardization of processes across the region. In 2014, the IPC department participated in a workload optimization exercise to identify opportunities to improve efficiencies within the department across the region. Opportunities for process improvements have been identified and an implementation plan is in progress. Issues related to IPC resources are being addressed as per response provided under recommendation 2.147.

Key stakeholders have been consulted regarding isolation gown storage and standardization. The goal is to source an isolation station that meets the needs of the end user, is cost effective, maintains sufficient isolation supplies, decreases risk of Personal Protective Equipment (PPE) contamination and enhances compliance to isolation protocols.</td><td colspan="2">Vitalité Health Network accepts and agrees with this recommendation.

The Network is planning on reviewing and comparing the practices and work of infection prevention and control professionals. A plan will be developed to harmonize work. This plan will take into account the zones’ specific circumstances regarding services provided and population.

To harmonize practices and promote the acquisition of new knowledge, initiatives will be identified to promote information sharing, networking, and access to experts for infection prevention and control professionals of the various zones.

The Network acknowledges that there are inconsistencies with respect to isolation gown procurement and management between zones. The Network therefore commits to setting up a work team with representatives from FacilicorpNB to address this problem and take corrective action.</td></tr>
</table>

Exhibit 2.1 - Summary of Recommendations – continued

2.1 cont'd	**Recommendation**
2.180 We recommend the Horizon and Vitalité Health Networks improve monitoring for compliance with infection prevention and control standards, including the monitoring of routine practices. This should include, but not be limited to, establishing policies and procedures for: • **consistent unbiased hand hygiene auditing of appropriate quantity and including coverage of all areas in the hospitals;** • **auditing jewelry and nails of healthcare workers to ensure compliance with the hand hygiene policy;** • **auditing of linen management, including delivery trucks;** • **auditing of waste management, including all types of waste; and** • **auditing of shared equipment (proper cleaning, storage, etc.).**	
Response from Horizon	**Target Date for Implementation:** Work is ongoing at local area level. Hand hygiene educational program to be completed by all auditors to ensure compliance with best practice will be completed by September 2015. A Biomedical Waste Audit will be piloted in the spring 2015. FacilicorpNB Linen Services to provide audit results to the Regional Infection Prevention & Control Committee commencing September 2015.
Horizon Health Network accepts and agrees with this recommendation. Monitoring of some routine practices is well established such as MRSA/ VRE surveillance screening, isolation rooms, PPE, Operating Room, Medical Device Reprocessing and Sterile Storage areas audits. • Horizon's hand hygiene auditing practice is in accordance with Accreditation Canada Standards and aligns with national hand hygiene auditing practices. The following steps have been taken to ensure consistent unbiased hand hygiene auditing. o A standardized Hand Hygiene educational program based on Canada's Hand Hygiene Campaign was developed by Horizon IPC in October 2013. o Hand Hygiene Champions were recruited in all areas of Horizon and completed this education program prior to conducting monthly hand hygiene audits. o All members of the IPC Team who conduct hand hygiene audits will be required to complete this hand hygiene educational program as a refresher to ensure they are auditing as per best practice. This will assist in providing unbiased auditing and supports this recommendation. • Regular monitoring of compliance with infection prevention and control policies including the Horizon Hand Hygiene Policy by managers and Infection Prevention and Control Professionals will support Horizon in meeting this recommendation. • Horizon's Linen Services is provided by a contracted service provider through FacilicorpNB. Horizon will collaborate with FacilicorpNB and key stakeholders to establish a Service Level Agreement which will define specific terms and conditions for the delivery of services. Horizon IPC have been collaborating with Linen Services to ensure linen is managed as per CSA Z314.10.2-10 Laundering, maintenance, and preparation of multi-use gowns, drapes, and wrappers in health care facilities. As the Auditor General report indicates, "It may not be appropriate for the ICP to audit each department involved in routine practices (Linen, EVS, etc.), however, the ICPs should monitor audit results from other departments." Horizon supports this approach and will request that FacilicorpNB provide audit results to the Regional Infection	

Exhibit 2.1 - Summary of Recommendations – continued

Response from Horizon (continued)	
Prevention & Control Committee on a regular basis as per established process with other Stakeholders. This will support Horizon in meeting this recommendation. • Environmental Services is responsible for conducting audits to ensure quality standards are met. IPC collaborates with EVS to ensure Biomedical Waste is being handled, transported and stored as per waste management guidelines. A Biomedical Waste Audit Tool has been developed and will be piloted in the spring 2015. This will support Horizon in meeting this recommendation. • A process for monitoring compliance with the Clean Label Flagging Process has been implemented in the fall 2014 by Environmental Services. Audit results are reported to the Regional Infection Prevention & Control Committee. This supports Horizon in meeting this recommendation.	
Response from Vitalité	**Target Date for Implementation:** June 2017
Vitalité Health Network agrees with this recommendation. The Network has already set an appropriate frequency for hand hygiene audits. The review process was also looked at with infection prevention and control professionals, based on the procedure established by the Canadian Patient Safety Institute. The Network is examining the implementation of a process to monitor compliance with the hand hygiene policy, including namely jewelry and nails. The result of this monitoring process is to be included in the Network 2015-2016 scorecard. The Network is currently working with FacilicorpNB on a service agreement and governance model for laundry services management. While developing this agreement, the Network will ensure, among other things, that its expectations are met regarding auditing of hospital linen and delivery trucks. Over the next few months, the Network will evaluate waste and shared equipment management auditing practices based on Canadian standards and best practices and will propose a standard approach throughout the organization. As part of the support services privatization project, the Network will have to ensure that standards are included in contracts and follow-ups by the new supplier.	

Exhibit 2.1 - Summary of Recommendations - continued

<table>
<tr><td>2.1 cont’d</td><td colspan="4">Recommendation</td></tr>
<tr><td colspan="5">2.202 We recommend the Department of Health and/or the Regional Health Authorities enhance its public reporting on the effectiveness of its infection prevention and control program(s) by reporting on hand hygiene and other infection prevention and control program performance indicators.</td></tr>
<tr><td colspan="2">Response from the Department of Health</td><td colspan="3">Target Date for Implementation: Work plan by June 30, 2016</td></tr>
<tr><td colspan="5">The Department of Health (DH) accepts and agrees with the recommendation to improve public reporting. The Department currently publically reports quarterly on its own website the occurrence of hospital related methicillin-resistant Staphylococcus aureus bloodstream infection and hospital-related Clostridium difficile infections.

Findings of the environmental scan referred to in the response to recommendation 2.146 will guide decisions regarding additional direct performance reporting by the Department of Health vs. reporting by Regional Health Authorities and/or the New Brunswick Health Council.</td></tr>
<tr><td colspan="2">Response from Horizon</td><td>Target Date for Implementation: Completed</td><td>Response from Vitalité</td><td>Target Date for Implementation: June 2017</td></tr>
<tr><td colspan="2">Horizon Health Network accepts and agrees with this recommendation. In the fall of 2014, Horizon began posting quarterly Hand Hygiene compliance and other IPC key performance indicators on the Horizon Public Website. In December 2014, IPC began posting each Patient Care Unit’s hand hygiene compliance rate in a public area on a monthly basis. The process for this was undertaken with involvement of the Horizon Patient and Family Advisory Council.

This recommendation is complete.</td><td colspan="3">Vitalité Health Network agrees with this recommendation and reports that initiatives are currently under way to include the results of its infection prevention and control program on its website in order to be accountable to the population for the program performance.</td></tr>
</table>

Background on Infection Prevention and Control in Hospitals

2.24 Healthcare and our well-being is a concern to everyone. A major ongoing public health concern is the transmission of infections. The Department of Health (Department) is responsible for limiting infections in New Brunswick. The Department has many roles related to infection prevention and control, such as helping to ensure our water is safe to drink, food served in restaurants won't make us sick, sewage is properly treated, children are vaccinated, communicable diseases are reported, etc. Our work focused on infection prevention and control in hospitals.

Infection prevention and control in provincial hospitals was the focus of our audit.

2.25 In implementing infection prevention and control in hospitals, the Department works with the two Regional Health Authorities (RHAs) who have primary responsibility for patient safety in the hospitals they administer. *Patient safety is a high priority for New Brunswick's Regional Health Authorities, who work hard to ensure that every patient has a safe hospital stay and a positive outcome.*[12] Patient safety in hospitals includes minimizing the risk of adverse events, such as: falls, medication errors, allergic reactions and hospital-acquired infections. Infection prevention and control in provincial hospitals was the focus of our audit.

Statistics for healthcare

2.26 In fiscal 2012-2013, approximately $1.5 billion[13] was expended for hospital services, representing more than 57% of the Department's budget. The following facts relating to healthcare in the Province were obtained from the Department's 2012-13 Annual Report[14]:

- hospital stays: 90,893;
- total length of stays: 1,069,583 days; and
- average number of days per hospital stay: 11.8.

2.27 **Exhibit 2.2** provides information on each of the RHAs.

[12] Website - Department of Health – Patient Safety, Sept 2013
[13] Department of Health Province of New Brunswick, *2012-13 Annual Report*, December 2013.
[14] Ibid.

Exhibit 2.2 – 2013-2014 Information on the RHAs

2.2 2013-2014 Information on the RHAs: Horizon and Vitalité

	Horizon	Vitalité
Number of hospitals	12	11
Number of hospital beds	1,650	965
Employees	12,402	7,497
Physicians / doctors	994	555
Volunteers	3,600	1,000
Surgeries	49,280	20,798
Newborns	5,117	1,780
Admissions (acute, chronic and rehab)	58,574	29,037
Budget	$1,100 million	$613 million

Source: Chart created by AGNB with information from the following annual reports:

- *2013-2014 Annual Report Horizon Health Network*
- *Annual Report 2013-2014 Vitalité Health Network*

Hospital-acquired infections

2.28 Hospital-acquired infections are also called "healthcare associated infections" or "nosocomial infections". Some interesting statistics[15] relating to healthcare-associated infections, which include hospital-acquired infections, are presented here:

- *Healthcare-associated infections are common: One out of every 10 patients admitted to hospital will get one.*
- *Healthcare-associated infections can also be very serious: about 12,000 deaths in Canada are caused by these infections each year.*
- *Hand hygiene is one of the most important ways to stop the spread of "superbugs" and other organisms. It has been shown that healthcare workers clean their*

[15] Website – Department of Health – *Patient Family Guide* (Pamphlet prepared by Canadian Patient Safety Institute - How To Help Prevent Healthcare-Associated Infections: A Patient And Family Guide, April 2012).

hands about 40% of the time that they are supposed to. With the growing awareness of healthcare-associated infections this number is getting better, but it is still less than ideal.

2.29 During our research, we learned the following:

- *"Healthcare associated infections (HAIs) are infections that patients acquire from healthcare facilities, such as hospitals, while receiving treatment or care for an unrelated condition. These infections can be serious. Examples of HAIs are Clostridium difficile (C. difficile), methicillin resistant Staphylococcus aureus (MRSA), and bloodstream infections."* [16]

- **Exhibit 2.3** shows statistics for healthcare-associated infection prepared by CNISP[17]. It shows the *Clostridium difficile* infection incidence rate was 2.2 per 1,000 patients admitted in 2011 for the eastern region, which includes New Brunswick. It also shows the number of MRSA infections in the CNISP network from 2000 to 2009 by region.

- **Exhibit 2.4** shows statistics for two hospital associated infections in New Brunswick hospitals: *Clostridium difficile* infection (CDI) and methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia. There were 228 cases of CDI and three cases of MRSA bacteremia reported for the 2013/2014 fiscal year.

[16] Website – Department of Health – Office of the Chief Medical Officer of Health (Public Health), Sept 2013
[17] **CNISP** refers to the Public Health Agency of Canada's (PHAC's) Canadian Nosocomial Infection Surveillance Program (CNISP). The national program includes the ten provinces with 54 hospitals participating. The Moncton Hospital represents New Brunswick for this program.

Exhibit 2.3 – Statistics for Healthcare-Associated Infections - CNISP

2.3 Statistics for Healthcare-Associated Infections - CNISP

Number of Healthcare-Associated-*Clostridium difficile* infection cases and incidence rates per 1,000 patient admissions by region

	Western		*Central*		*Eastern*		*Overall*	
	Cases	**Rate**	**Cases**	**Rate**	**Cases**	**Rate**	**Cases**	**Rate**
2007	1,180	4.08	1,831	5.07	260	3.44	3,271	4.51
2008	1,060	6.35	1,597	5.48	256	3.56	2,913	5.49
2009	683	5.13	1,401	4.98	161	2.74	2,245	4.75
2010	1,251	4.68	1,266	5.13	155	2.04	2,672	4.53
2011	1,170	4.85	1,910	6.21	101	2.20	3,181	5.35

Number of MRSA Infections in the CNISP Network by region and overall rates per 1,000 patient admissions

	Western	*Central*	*Eastern*	*Overall*	*Patient admissions*	*Overall Rate*
2000	305	410	21	736	507,910	1.45
2001	252	416	28	696	614,421	1.13
2002	278	514	53	845	583,658	1.45
2003	373	592	99	1,064	671,240	1.59
2004	669	594	106	1,369	677,829	2.02
2005	1,187	687	193	2,067	764,341	2.70
2006	1,071	751	189	2,011	770,118	2.61
2007	1,127	618	207	1,952	768,294	2.54
2008	1,081	659	261	2,001	678,610	2.95
2009	961	858	217	2,036	701,477	2.90

Notes:

- **CNISP Network** refers to the Public Health Agency of Canada's (PHAC's) Canadian Nosocomial Infection Surveillance Program (CNISP). The national program includes the ten provinces with 54 hospitals participating. The Moncton Hospital represents New Brunswick for this program.
- **Patient admissions** = Number of patients admitted/hospitalized during a surveillance year (one patient can have multiple hospitalizations).
- **Region**:
  - Western = Manitoba, Saskatchewan, Alberta and British Columbia
  - Central = Québec and Ontario
  - Eastern = New Brunswick, Newfoundland and Labrador, Nova Scotia and Prince Edward Island
- **Number of MRSA Infections** does not include MRSA colonization cases.

Source: Table created by AGNB with information from Public Health Agency of Canada, The Canadian Nosocomial Infection Surveillance Program (CNISP).

Exhibit 2.4 – Clostridium difficile Infection (CDI) and Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia in New Brunswick Hospitals - 2013/2014 fiscal year

2.4 *Clostridium difficile* Infection (CDI) and Methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia in New Brunswick Hospitals - 2013/2014 fiscal year

CDI

Clostridium difficile is a bacterium that can live in the bowel, as part of normal bowel flora, without causing harm, or it can cause an infection (diarrhea, fever, abdominal pain). When antibiotics destroy a person's good bowel bacteria, *C. difficile* bacteria can grow causing infection. This report includes hospital associated CDI identified during the hospital stay or within 4 weeks of leaving the hospital.

Acute Care Hospital (RHA)	*Location*	*# of Beds*	*# of Cases*	*Rate*
Moncton Hospital (Horizon)	Moncton	250+	45	0.34
Saint John Regional Hospital (Horizon)	Saint John	250+	42	0.26
Dr. G.-L.-Dumont University Hospital Centre (Vitalité)	Moncton	250+	29	0.29
Dr. E. Chalmers Regional Hospital (Horizon)	Fredericton	250+	27	0.25
Miramichi Regional Hospital (Horizon)	Miramichi	100-249	19	0.36
Edmundston Regional Hospital (Vitalité)	Edmunston	100-249	13	0.24
Campbellton Regional Hospital (Vitalité)	Campbellton	100-249	12	0.23
Oromocto Public Hospital (Horizon)	Oromocto	<100	9	0.56
Chaleur Regional Hospital (Vitalité)	Bathurst	100-249	7	0.11
Tracadie-Sheila Hospital (Vitalité)	Tracadie-Sheila	<100	5	0.25
Upper River Valley Hospital (Horizon)	Waterville	<100	5	0.24
Enfant-Jésus RHSJ Hospital (Vitalité)	Caraquet	<100	4	0.89
Stella-Maris-de-Kent Hospital (Vitalité)	Ste-Anne-de-Kent	<100	2	0.26
Lamèque Hospital (Vitalité)	Lamèque	<100	2	0.53
Sackville Memorial Hospital (Horizon)	Sackville	<100	2	0.36
Charlotte County Hospital (Horizon)	St.Stephen	<100	2	0.14
Grand Falls General Hospital (Vitalité)	Grand Falls	<100	1	0.11
Sussex Health Centre (Horizon)	Sussex	<100	1	0.11
Hotel-Dieu of St. Joseph (Horizon)	Perth-Andover	<100	1	0.13
Hôtel-Dieu Saint-Joseph de Saint-Quentin (Vitalité)	Saint-Quentin	<100	0	0.00
Grand Manan Hospital (Horizon)	Grand Manan	<100	0	0.00
		Total	**228**	**0.27**

MRSA

Staphylococcus aureus is a type of bacteria that lives on the skin, amongst other places, of healthy people. When S. aureus develops resistance to certain antibiotics, it is called methicillin-resistant *Staphylococcus aureus*, or MRSA. MRSA can enter the body through artificial openings (e.g. wounds, IV lines) and cause infections like bloodstream infections, bladder infections, and soft tissue infections. These infections occur in the community and in hospitals. This report only includes MRSA bacteremia associated with hospitalization.

Three cases of MRSA bacteremia were reported for the 2013/2014 fiscal year. The rate of hospital associated MRSA bacteremia for the fiscal year is 0.004 per 1,000 patient days.

Continued…

Exhibit 2.4 – Clostridium difficile Infection (CDI) and Methicillin-resistant Staphylococcus aureus (MRSA) bacteremia in New Brunswick Hospitals -2013/2014 fiscal year (continued)

2.4	***Clostridium difficile* Infection (CDI) and Methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia in New Brunswick Hospitals - 2013/2014 fiscal year (*continued*)**

Notes:

1. **Data Presentation & Analysis:**

CDI data is presented in the order of "***# of cases"***, greatest to least. *Counts are the number of patients with the hospital-associated infection in question* during a fiscal year.

CDI "***rate***" means "incidence rate" and is the number of new infection cases in a hospital for a certain fiscal year per 1,000 patient days. *(These are presented by patient days, which are the number of days spent in a hospital for all patients regardless of medical condition. For example, 10 patients in a hospital for 1 day would represent 10 patient days.)*

2. **Data Limitations**

These figures are *based on CDI and MRSA bacteremia cases reported to the Department of Health by hospitals in New Brunswick. There are no guarantees that all cases among the population under surveillance are identified.*

Exercise caution when interpreting the data in the reports. Care should be taken when comparing cases and rates between healthcare facilities. Multiple factors can affect the rate and these include

- *the health condition and medical history of the population served,*
- *the complexity of the patient care,*
- *the age of patient served,*
- *the laboratory methods used for detection,*
- *the use of antibiotics,*
- *the physical layout of the facility, and*
- *the size of the facility.*

In addition to the factors listed above, the surveillance practice used by other provinces may be different from New Brunswick and extra care should be taken when reviewing New Brunswick's rates with Canadian rates and/or rates from other provinces. In New Brunswick, a standard surveillance practice has been implemented.

Facilities with smaller patient numbers may have unstable rates and slight changes in the number of cases can dramatically affect the rate, as such, these rates can fluctuate from one month to the next. It is best to monitor trends for a particular hospital over time.

Sources:

Exhibit compiled by AGNB with information from the Department of Health: Office of the Chief Medical Officer of Health - Communicable Disease Control - The provincial healthcare associated infections (HAI) surveillance system with excerpts from *Quarterly Hospital Associated Infections Surveillance Report,* March & September 2014.

Data Source**:** Data is provided by New Brunswick hospitals from both Regional Health Authorities using a standardized form and case definitions.

2.30 Other interesting quotes from our research are shown in **Exhibit 2.5**

Exhibit 2.5 – Interesting Quotes from our Research

2.5	**Interesting Quotes from our Research**

- *"These types of infections can be transmitted within a hospital when infection prevention and control measures are not followed."*[18]
- *"'Superbugs,' and most other bacteria and viruses are usually spread between patients on pieces of equipment and on unwashed hands. 'Superbugs' can live outside of the body and on equipment for months, so it is easy for things like bedside curtains, tables, and telephones to become contaminated."* [19]
- *"HAIs have a significant impact on health care spending … Expenses associated with HAIs include readmission due to infection; prolonged length of stay; prolonged wait times; longer staff hours; requirement for additional treatments, laboratory testing and antimicrobial use; and increased surveillance activities, single room accommodation for IPAC [infection prevention and control] purposes, PPE [personal protective equipment], cleaning supplies and outbreaks, all of which increase the cost of providing health care." … "and, occasionally, legal and litigation costs."*[20]
- *"Outbreaks result in significant cost to the organization."*[21]
- *"Many healthcare-associated infections can be prevented."* [22]
- *"Infection prevention and control (IPAC) programs have been shown to be both clinically effective and cost-effective, providing important cost savings in terms of fewer HAIs, reduced length of hospital stay, less antimicrobial resistance and decreased costs of treatment for infections."*[23]

Source: See references below.

[18] Website – Public Health Agency of Canada - Fact Sheet - Clostridium difficile (C. difficile), Sept 2013.
[19] Website – Department of Health – *How To Help Prevent Healthcare-Associated Infections: A Patient and Family Guide*, April 2012 (Pamphlet prepared by Canadian Patient Safety Institute).
[20] Ontario Agency for Health Protection and Promotion. Provincial Infectious Diseases Advisory Committee. *Best Practices for Infection Prevention and Control Programs in All Health Care Settings*, 3rd edition. Toronto, ON: Queen's Printer for Ontario; May 2012.
[21] Ibid.
[22] Website – Department of Health – *How To Help Prevent Healthcare-Associated Infections: A Patient and Family Guide*, April 2012 (Pamphlet prepared by Canadian Patient Safety Institute).
[23] Ontario Agency For Health Protection and Promotion. Provincial Infectious Diseases Advisory Committee. *Best Practices for Infection Prevention and Control Programs in All Health Care Settings*, 3rd edition. Toronto, ON: Queen's Printer for Ontario; May 2012.

Infection prevention and control programs

2.31 Infection prevention and control is defined as *"measures practiced by healthcare personnel in healthcare facilities to decrease transmission and acquisition of infectious agents"*[24]. **Appendix I** provides general information on infection prevention and control, and **Appendix II** provides a glossary of terms, abbreviations and acronyms used in this chapter. Infection prevention and control programs are comprehensive and include the community (doctors' offices, health centres, extra-mural, rehab centres, etc.). However, our audit was limited to infection prevention and control programs in hospitals.

2.32 The goals of an infection prevention and control program are:

- *"to protect clients/patients/residents from HAIs, resulting in improved survival rates, reduced morbidity associated with infections, shorter length of hospital stay and a quicker return to good health; and*
- *to prevent the spread of infections from patient-to-patient, from patients to health care providers, from health care providers to patients, from health care providers to health care providers and to visitors and others in the health care environment."* [25]

2.33 Infection prevention and control is a common thread throughout hospital activities. Essentially all hospital departments are involved and all functions have an infection prevention and control component, such as the following:

- Environmental services (EVS) cleans patient rooms and shared equipment;
- Human resources must provide immunizations and

[24] Accreditation Canada, *Accreditation Report Prepared for: Horizon Health Network*, October 2010.
[25] Ontario Agency For Health Protection and Promotion. Provincial Infectious Diseases Advisory Committee. *Best Practices for Infection Prevention and Control Programs in All Health Care Settings*, 3rd edition. Toronto, ON: Queen's Printer for Ontario; May 2012.

infection prevention and control training to staff;

- Infection Prevention and Control Professionals (ICPs) do surveillance work to identify the possibility and presence of infections in the hospital to ensure proper measures are taken by appropriate units to reduce the risk of exposure to others;
- New equipment or products are considered by ICPs before final decisions are made; and
- When constructing hospitals or doing major renovations, the placement of sinks for proper hand hygiene must be considered.

A program involves both routine practices and additional precautions

2.34 An infection prevention and control program (program) typically involves both routine practices[26] and additional precautions. Routine practices are required by everyone for every patient every day and include actions such as hand hygiene and the proper handling of sharp instruments such as needles (sharps). **Exhibit 2.6** provides information on routine practices. Additional precautions refer to interventions used, in addition to routine practices, to interrupt the transmission of infections. Additional precautions are used with patients on isolation and include practices such as having dedicated equipment (rather than cleaning equipment shared with other patients) and using special cleaning procedures. Our audit focused on routine practices.

Infection Prevention and Control Professionals (ICPs) are the leads in the program

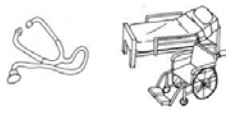
2.35 While ICPs are the leads in the program, everyone in a hospital (patients, visitors, volunteers and healthcare workers: doctors, nurses, personal care workers, housekeepers, maintenance, administration support, etc.) shares the responsibility for infection control because some routine practices (such as hand hygiene) are required of everyone in the hospital.

[26] **Routine Practices (RP):** The system of infection prevention and control practices recommended by the Public Health Agency of Canada to be used with all clients/patients/residents during all care to prevent and control transmission of microorganisms in all health care settings. (*Infection Prevention And Control Audit for Routine Practices - Toolkit Version 2*, September 2009© CHICA-Canada; Revised September 28, 2012)

2.36 *"The human and economic burdens that HAIs place on Canadians and their health care system speak to the importance of an effective Infection Prevention and Control Program." (Public Health Agency of Canada)*[27]

[27] Ontario Agency for Health Protection and Promotion. Provincial Infectious Diseases Advisory Committee. *Best Practices for Infection Prevention and Control Programs in All Health Care Settings,* 3rd edition. Toronto, ON: Queen's Printer for Ontario; May 2012.

Exhibit 2.6 - General Information on Routine Practices (Infection Prevention and Control)

2.6	**General Information on Routine Practices (Infection Prevention and Control)**
ROUTINE PRACTICES to be used with <u>ALL PATIENTS</u>	
	**Hand Hygiene** Hand hygiene is performed using alcohol-based hand rub or soap and water: ✓ Before and after each patient contact ✓ Before performing invasive procedures ✓ Before preparing, handling, serving or eating food ✓ After care involving body fluids and before moving to another activity ✓ Before putting on and after taking off gloves and PPE ✓ After personal body functions (e.g., blowing one's nose) ✓ Whenever hands come into contact with secretions, excretions, blood and body fluids ✓ After contact with items in the patient's environment
	**Mask and Eye Protection or Face Shield** ✓ Protect eyes, nose and mouth during procedures and care activities likely to generate splashes or sprays of blood, body fluids, secretions or excretions. ✓ Wear within two metres of a coughing patient.
	**Gown** ✓ Wear a long-sleeved gown if contamination of skin or clothing is anticipated.
	**Gloves** ✓ Wear gloves when there is a risk of hand contact with blood, body fluids, secretions, excretions, non-intact skin, mucous membranes or contaminated surfaces or objects. ✓ Wearing gloves is NOT a substitute for hand hygiene. ✓ Remove immediately after use and perform hand hygiene after removing gloves.
	**Environment and Equipment** ✓ All equipment that is being used by more than one patient must be cleaned between patients. ✓ All high-touch surfaces in the patient's room must be cleaned daily.
	**Linen and Waste** ✓ Handle soiled linen and waste carefully to prevent personal contamination and transfer to other patients.
	**Sharps Injury Prevention** ✓ NEVER RECAP USED NEEDLES. ✓ Place sharps in sharps containers. ✓ Prevent injuries from needles, scalpels and other sharp devices. ✓ Where possible, use safety-engineered medical devices.
	**Patient Placement/Accommodation** ✓ Use a single room for a patient who contaminates the environment. ✓ Perform hand hygiene on leaving the room. ✓ Assess infectious risk one patient poses to another when determining placement.
Source: Excerpts from 1. Ontario Agency for Health Protection and Promotion. Provincial Infectious Diseases Advisory Committee. *Routine Practices and Additional Precautions in All Health Care Settings*, 3rd edition. Toronto, ON: Queen's Printer for Ontario; November 2012 2. Information provided by the Department	

Introduction to Findings

Why we chose this project and the objective of our audit

2.37 Our rationale for selecting this project is provided in **Exhibit 2.7**.

2.38 The objective of our audit was*:*

to determine if the Department of Health and the Regional Health Authorities have an infection prevention and control program to protect people from hospital-acquired infections.

Exhibit 2.7 - Why We Chose this Project

2.7 Why We Chose this Project

We select our projects on the basis of relevance, significance and risk with the goal of having a positive impact. We chose to do this audit for the following reasons:

- The lack of appropriate infection prevention and control can have a severe consequence up to and including death of the patient.
- Hospital-acquired infections affect the condition and comfort of the patient. They also cause increased costs due to longer hospital stays, additional procedures, etc. Infection control equates to cost control.
- Escalating healthcare costs is a significant concern. The Department is operating in an environment of fiscal restraint. If there are cutbacks, it may mean the same amount of work is left to fewer staff. There is a risk these workers may not take the time to wash their hands or properly clean patient rooms and equipment.
- 57.7% (i.e. $1.5 Billion[28]) of the Department of Health's expenditures is for hospital services. The amount spent on healthcare is significant and warrants our Office doing work in the area each year. However, due to our restricted resources, this is not always possible. Our last performance audit in this Department was Medicare in 2012.
- Infections do not respect borders. Residents of New Brunswick, NS, PEI, and Quebec who are served by New Brunswick's hospitals are at risk of contracting a hospital-acquired infection if a program is not in place. These infections can be taken home to their communities.
- In the past few years, six of the other nine provincial Auditors General have examined infection control in hospitals. They reported significant weaknesses in infection control in their jurisdictions.
- The public has a role to play in infection prevention and control. Educating the public is a part of an infection prevention and control program. Our work may help increase public awareness, which could improve infection prevention and control in the Province.

[28] Department of Health Province of New Brunswick, *2012-13 Annual Report*, December 2013.

Our audit focused on routine practices

2.39 Our audit focused on routine practices and the hospitals' ongoing monitoring of compliance with their infection prevention and control policies and procedures. We did not perform direct auditing of compliance with standards (i.e. we did not observe the practices of healthcare workers such as doctors, nurses and housekeepers).

2.40 We developed criteria to use as the basis for our audit, which are shown in **Appendix III**. The criteria were reviewed and agreed upon by the Department and the RHAs.

Our audit included both RHAs (Horizon and Vitalité)

2.41 We started planning our audit in October 2013 and concluded our fieldwork in November 2014. We visited eight hospitals throughout the Province. We visited hospitals within the Horizon Health Network (Horizon) in April-May and hospitals within the Vitalité Health Network (Vitalité) in September-October. Details of our work performed for this audit are shown in **Appendix IV**.

Comments to Readers

2.42 Our audit was performed in accordance with standards for assurance engagements, encompassing value-for-money and compliance, established by the Chartered Professional Accountants of Canada, and accordingly included such tests and other procedures as we considered necessary in the circumstances.

2.43 Certain financial and statistical information presented in this chapter was compiled from information provided by the Department and the RHAs. It has not been audited or otherwise verified. Readers are cautioned that this financial and statistical information may not be appropriate for their purposes.

2.44 In reporting our detailed findings in this chapter, we do not identify individual hospitals for the following reasons:

- We found program deficiencies in each of the eight hospitals visited. Many of the hospitals had similar deficiencies, and we believe they may exist in a number of hospitals to some extent. We hope corrective action will be taken provincially across the system;
- Since we visited a sample of hospitals, and units within hospitals, it could be misleading to our readers

to identify a specific finding with a specific hospital. We are concerned readers would interpret the absence of a hospital name in our report as a sign of a hospital with no deficiencies;

- During our site visits, observations and issues were pointed out to the Infection Prevention and Control Professionals (ICPs) as they were noted. In many cases, corrective action was taken before the end of our visit; and
- We believe the findings and the issues are more important than their location.

Key used in this chapter

2.45 The following key is used to classify our findings:

- ✓ represents a positive observation;
- × represents an area needing improvement or further consideration; and
- • represents other observations.

How we present our findings in this chapter

2.46 In this chapter our key findings are reported in sections. Each key finding is supported with detailed findings. Our key findings are listed here.

Key Findings

Key Findings	Paragraph Number
✓ The Department's and the Regional Health Authorities' responsibilities for infection prevention and control in hospitals are clear.	2.47
✓ There are infection prevention and control programs in hospitals.	2.60
✗ We observed deficiencies in infection prevention and control practices during our visits to hospitals.	2.82
✗ There are inconsistencies within and between the RHAs' infection prevention and control programs.	2.116
✓ There is monitoring of some routine practices.	2.150
✗ Monitoring for compliance with routine practices needs improvement.	2.164
✓ The Regional Health Authorities measure the effectiveness of their infection prevention and control programs.	2.181
✗ The Regional Health Authorities need to enhance their public reporting on the effectiveness of their infection prevention and control programs.	2.193

Key Finding: ✓ The Department's and the Regional Health Authorities' Responsibilities for Infection Prevention and Control in Hospitals are Clear.

Background

2.47 The responsibility for providing healthcare in our Province is shared between the Department and the two RHAs (Horizon and Vitalité). Given the shared responsibility, it is important the roles of the different parties are clearly understood.

Summary of Findings

2.48 We found the following:

- ✓ The Department's, Horizon's and Vitalité's responsibilities are well documented.
- ✓ The Department's, Horizon's and Vitalité's responsibilities appear to be well understood by various employees.
- ✓ Infection prevention and control is a high priority.

✓The Department's, Horizon's and Vitalité's responsibilities are well documented.

2.49 We found responsibilities of the Department and the RHAs were clearly documented via the following:

- legislation;
- annual reports, strategic documents and a 2013 document titled, *Health System Roles and Responsibilities*;
- websites;
- terms of reference for committees;
- job descriptions; and
- policies and procedures.

2.50 For example, the Department's annual report states the Department, "*is responsible for ensuring the availability of appropriate, quality hospital services for the residents of New Brunswick. This includes responsibility for:*

- *the Hospital System Master Plan*
- *approval of new or enhanced hospital services*
- *funding and monitoring of the operational needs of the Regional Health Authorities*

Acute or hospital care is comprised of primary, secondary and tertiary care services delivered by the two

regional health authorities."[29]

2.51 The annual report also describes various infection control programs and initiatives such as the following:

- public health's communicable disease prevention, management and control (which includes immunization);
- hospital services' patient safety initiatives (which include prevention of surgical site infection and central line-associated bloodstream infection); and
- pandemic influenza [flu] planning and response.

✓***The Department's, Horizon's and Vitalité's responsibilities appear to be well understood by various employees.***

2.52 We discussed the role and responsibilities of the Department and the RHAs with various staff members of the Department, Horizon and Vitalité. We found there to be a consistent understanding. In general, staff members have the following understanding of the Department's and the RHAs' responsibilities.

2.53 The Department is responsible for funding the RHAs, being accountable for healthcare to the public (which includes addressing public complaints and reporting infection rates to the public via the website), and ensuring New Brunswick's healthcare is comparable to other provinces. Staff members reported the Department was very helpful with the recent implementation of standardizing surveillance, which provides consistency in information collected and allows for public reporting of *Clostridium difficile* (CDI) and methicillin-resistant *Staphylococcus aureus* bacteremia (MRSA).

2.54 Staff members suggested the Department's involvement could be enhanced by the following:

- taking the lead on implementing a provincial program by identifying inconsistencies between the two RHAs and standardizing processes so services delivered are the same for all New Brunswickers.

[29] Department of Health Province of New Brunswick, *2012-13 Annual Report*, December 2013.

They suggested since patients move from one hospital to another for various services offered at different hospitals, the programs and processes should be the same; and

- educating the public on healthcare and one's personal responsibility.

2.55 The RHAs are responsible for delivering quality healthcare ("quality" including safe, and "safe" including infection prevention and control). Specific RHA responsibilities mentioned by those we interviewed included the following:

- identifying inconsistencies in hospital practices and standardizing best practices across all facilities;
- identifying barriers to change and helping hospitals implement initiatives; and
- following-up and bringing closure to issues.

✓Infection prevention and control is a high priority.

2.56 Patient safety, which includes infection prevention and control, is a high priority for the Department and the RHAs. This is clearly documented in the organizations' publications and it was evident from our observations made in hospitals and from our discussions with various individuals in the organizations.

2.57 In the Department, there are resources in two divisions having infection control responsibilities.

i. *Community and Institutional Services Division* – In 2012, a new position was created for a *Healthcare Consultant - Infection Prevention & Control*. Also in this division, the patient safety unit pursues *"the Safer Healthcare Now! (SHN) campaign. SHN is a national campaign focusing on improving patient safety in Canada through learning, sharing and implementing targeted evidence–based interventions that are known to reduce avoidable adverse events*."[30] Some of the

[30] Department of Health Province of New Brunswick, *2012-13 Annual Report*, December 2013.

campaign's interventions are related to hospital-acquired infections, such as those involving prevention of surgical site infection and prevention of central line-associated bloodstream infection.

ii. *Office of the Chief Medical Officer of Health* – Within this public health division is the epidemiology and surveillance unit with responsibilities regarding healthcare associated infections. *"New Brunswick's HAIs surveillance system provides rates and trends for HAIs in all acute care facilities in New Brunswick. Monitoring HAIs helps us improve the health of our communities and protect our healthcare providers through the development of evidence based infection prevention and control guidelines*."[31]

2.58 In the RHAs, there are resources assigned to patient safety and infection prevention and control at all levels in the organizations' structures, which demonstrates its significance. We believe infection prevention and control is part of the organizations' cultures.

Conclusion

2.59 From reviewing documentation and interviewing staff members, we concluded the Department's and the Regional Health Authorities' responsibilities for infection prevention and control in hospitals are clear.

[31] Department Website - Office of the Chief Medical Officer of Health - Communicable Disease Control – Healthcare Associated Infections.

Key Finding: ✓ There are Infection Prevention and Control Programs in Hospitals.

Background

2.60 Infection prevention and control programs protect patients, visitors and healthcare workers from obtaining an infection while in the hospital. In order to assess whether there are infection prevention and control programs in place, we visited a sample of hospitals where we accompanied the Infection Prevention and Control Professional (ICP) while doing her work, spoke with various staff members, and toured the facility making observations.

Summary of Findings

2.61 We found the following:

- ✓ Resources and activities indicate programs are in place in hospitals.
- ✓ We observed active programs.
- ✓ Programs are focused on improving hand hygiene.
- ✓ Accreditation reports indicate active programs.

✓Resources and activities[32] indicate programs are in place in hospitals.

2.62 We reviewed a Public Health Agency of Canada (PHAC) discussion paper titled, *Essential Resources for Effective Infection Prevention and Control Programs: A Matter of Patient Safety*[33]. While we did not audit the effectiveness of programs, we used the list of "*recommended resources and activities for an effective infection prevention and control program"* listed in the document to determine the presence of infection prevention and control practices in hospitals. We found the following:

2.63 ***✓There are employees assigned to the programs.*** Both RHAs have ICPs assigned to the programs. Every hospital has an assigned ICP who has

[32] Nosocomial and Occupational Infections Section - Division of Blood Safety Surveillance and Health Care Acquired Infections - Centre for Communicable Diseases and Infection Control - Public Health Agency of Canada, excerpts from *Essential Resources for Effective Infection Prevention and Control Programs: A Matter of Patient Safety: A Discussion Paper*, 2010.
[33] Ibid.

program responsibilities. An ICP may be responsible for one or more hospitals, depending on the size of the hospital. Some larger hospitals have more than one ICP. All ICPs are nurses, many of whom have taken additional training on infection prevention and control.

✓ Program in place with resources: hand hygiene sink, yellow "sharps" disposal receptacle and educational poster on proper hand washing.

2.64 ***✓The ICPs have access to expert resources including an infectious disease physician and/or a medical microbiologist.*** Many of the ICPs commented on how they valued their strong working relationships with these experts. The infectious disease physicians and the medical microbiologists work in the larger hospitals. However, many of them are also assigned to consult with the smaller hospitals. Some of these specialists also serve on infection prevention and control committees.

2.65 ***✓The ICPs have access to laboratory diagnostic services.*** The ICPs do daily surveillance activities to identify infections and manage outbreaks. This includes having access to laboratory diagnostic services and reviewing reports. The ICPs often suggest additional testing be completed (i.e. collect specimens and send to the lab for analysis) if there is uncertainty about the presence of an infection.

2.66 ***✓ICPs collaborate and consult with internal and external partners to ensure appropriate communication and sharing of information.*** (Internal/external partners refer to others working within/outside of the facility.) The ICPs communicate regularly with the nurses in the hospital. In most of the hospitals we visited, both the ICP and environmental services managers commented on the value of their strong working relationship and their frequent communications with one another.

2.67 With regards to consulting with external partners, there are "*Local Area Infection Prevention and Control Committees*" in the various zones. ICPs in the zone attend these meetings, which have representatives from many different disciplines, such as:

- laboratory medicine: microbiologist or infectious disease specialist;
- medical staff;
- surgical program;
- public health from the community;

- quality and safety services;
- support services;
- materials management;
- employee health services;
- environmental services; and
- medical device reprocessing.

2.68 We spoke with various members of different committees. Members indicated they find the committees extremely valuable for collaborating and problem-solving. Similarly, within Horizon there is a "*Regional Infection Prevention and Control Committee*" where representatives from the different zones consult with one another.

2.69 The ICPs serve on various other committees and attend many meetings where they collaborate and consult with various partners, both internal and external.

2.70 ✓***The programs have key performance indicators which are measured, monitored, reported and used to improve outcomes.*** We comment on this later in the chapter, beginning with **paragraph 2.181**.

2.71 ✓***There are ongoing education programs for healthcare workers to reinforce current standards of infection prevention and control practices.*** Within Horizon, there is mandatory annual training of all healthcare workers which includes two courses relating to infection prevention and control: 1) hand hygiene and 2) routine practices. Within Vitalité, there is also mandatory training of hand hygiene and routine practices for all healthcare workers. Within Vitalité such training is required every two years. We reviewed the two training modules and found them to be relevant (with informative facts demonstrating the significance of infection control) and interesting (with interactive intermitting quizzes to reinforce learning).

2.72 ✓***Access to current infection control literature is available.*** During our interviews, several people made reference to journal articles and various sources of standards and guidelines.

✓ Nurses frequently consult with the ICP to ensure proper isolation of specific patients

✓ Housekeeping carts and staff are prevalent throughout the hospitals

✓We observed active programs.

✓ Hand hygiene gel and personal protective equipment available throughout most hospitals

2.73 ***✓ICPs have office space and computer support.*** The ICPs have office space in the hospitals. In some zones, there is an administration support person assigned to the program to help with organizing and documenting meetings and data entry.

2.74 ***✓Healthcare workers have the skills to apply infection prevention and control measures when providing patient care.*** Knowledge of the significance of hand hygiene and isolating infected patients was very prevalent. We observed nurses consulting with the ICP regarding proper infection prevention and control practices. We also observed various people (nurses, physiotherapist, housekeeping, food services) using personal protective equipment.

2.75 ***✓Hospitals have assigned housekeeping staff with the appropriate training to provide a clean and safe environment for patient care.*** Each hospital has an environmental services (EVS) department with housekeeping staff who appear to be appropriately trained. We were informed new staff members receive a general orientation and on-the-job training, and all staff members have mandatory refresher training. We were also informed they clean all areas of the hospital, with a particular focus on patient areas. There are documented policies and procedures/standard operating procedures (SOPs) to guide the staff in doing their work properly.

2.76 Our work at hospitals included a general tour of the facility by the ICP manager and/or facility manager and accompanying the ICP(s) while doing their work in the nursing units ("rounds"). During these times we made observations of active programs. Observations common to most of the hospitals we visited are presented in **Exhibit 2.8.**

Exhibit 2.8 - Specific Observations of an Active Program in Hospitals we Visited

2.8	**Specific Observations of an Active Program in Hospitals we Visited**

- ✓ In general, hospitals appeared clean and clutter-free (with exception of some units where areas have been transformed to allow additional beds).
- ✓ Hand hygiene gel was present at most public entrances and throughout hospitals.
- ✓ Personal protective equipment was widely available throughout the hospitals.
- ✓ Surveillance is done daily by the Infection Prevention and Control Professionals (ICPs) to identify possible infections early and ensure procedures to mitigate risks.
- ✓ Isolation of infected patients: posted signs with carts holding supplies (gloves, gowns, masks) and laundry bin properly located inside the patient's room for proper gown disposal.
- ✓ Stay home if sick signs were present at many entrances and throughout hospitals.
- ✓ Sharps containers used and replaced before overfilling.
- ✓ Positive working relationship between environmental services (EVS) and the program.
- ✓ EVS ("housekeeping") staff members, cleaning carts and garbage receptacles present throughout hospitals.

Notes:

1. The observations were made while doing a hospital tour with the ICP manager and/or facility manager or during "rounds" with ICPs.
2. Observations were discussed at the time with the ICP at the hospital.
3. The observations were made during our 30 days visiting eight hospitals.

Source: Observations made by AGNB.

✓Programs are focused on improving hand hygiene.

2.77 Hand hygiene is a significant component of patient safety, as it is one of the most effective ways to stop the spread of germs and infections. Vitalité's hand hygiene policy states, "*Hand hygiene is the single most important measure for preventing infections, reducing nosocomial infections by 50 – 80%.*"[34] Based on the following observations, we believe both RHA programs are focused on improving hand hygiene:

- The hand hygiene compliance rate (%) is one of the

[34] Vitalité Health Network, *Infection Prevention and Control Manual – Hand hygiene*, May 2011.

✓ Hand hygiene signs and gel are prevalent

RHAs' key performance indicators;

- Hand hygiene gel is widely available throughout the hospitals, including at hospital entrances;
- Hand hygiene signs are prevalent throughout some hospitals;
- Healthcare workers are required to do refresher training on hand hygiene annually within Horizon and every two years within Vitalité;
- ICPs have been auditing hand hygiene in nursing units for a number of years. In Horizon hospitals, the results are provided to healthcare workers;
- Staff members reported hand hygiene being a priority with significant changes in the past few years regarding promotion, auditing and compliance rates;
- Horizon (in 2013) and Vitalité (in 2014) established a task force for improving hand hygiene compliance;
- Each RHA has a regional hand hygiene policy. The hand hygiene policy was one of the first infection prevention and control policies standardized by the RHAs; and
- Hand hygiene information is provided on the RHAs' websites to enhance public awareness.

✓Accreditation reports indicate active programs.

2.78 *"Accreditation Canada's Standards for Infection Prevention and Control (IPAC) … are based on updated research and best practice in the field, as well as standards from Canadian Standards Association (CSA), the Public Health Agency of Canada (PHAC), and the Community and Hospital Infection Control Association-Canada (CHICA-Canada). … These IPAC standards include structure, process, and outcome performance measures to promote assessment of organizational compliance …"*[35] The standards are grouped into four subcategories: "*1) investing in infection prevention and control; 2) keeping people safe from infections;*

[35] Accreditation Canada, *Qmentum Program - Standards - Infection Prevention and Control,* April 2012.

3) providing a safe and suitable environment; and 4) *being prepared for outbreaks and pandemics*."

2.79 *"Once every three years Horizon undergoes an on-site survey by Accreditation Canada to maintain and improve the quality of care and service it delivers. The purpose of this evaluation is to assist health-care organizations to identify their strengths and areas for improvement, and to identify a plan of action to better meet the needs of clients, families, and communities."*[36] Vitalité also undergoes accreditation every three years.

2.80 We reviewed the last two accreditation reports for each RHA. The report for Horizon from 2010 states, *"There is a solid Infection Control Program across the Network with low infection rates and knowledgeable staff at all levels."*[37] This was listed as one of the *"Overall Strengths"*. The report for Vitalité for 2010 states, "[Translation] *The collaboration of infection prevention teams in the various zones is excellent […] management is firmly committed to establishing a true culture of quality throughout the organization*". [38]

Conclusion

2.81 From our observations, we concluded there are infection prevention and control programs in hospitals. However, our audit also identified inconsistencies within the programs and deficiencies in infection control practices which we discuss next.

[36] Horizon Health Network, *2012-2013 Annual Report Horizon Health Network.*
[37] Accreditation Canada, *Accreditation Report - Horizon Health Network*, Oct 2010.
[38] Accreditation Canada, *Accreditation Report - Vitalité Health Network*, June 2010.

Key Finding: ✕ We Observed Deficiencies in Infection Prevention and Control Practices during Our Visits to Hospitals.

Background

2.82 We visited eight hospitals throughout the Province (hospitals in both RHAs). Our work at each hospital included a general tour with the ICP and/or the facility manager, and accompanying the ICP(s) while doing their work in the nursing units. During these times we made observations, some of which indicated deficiencies in infection control practices.

Specific deficiencies observed

2.83 **Exhibit 2.9** presents our observations on specific deficiencies in the hospitals we visited. Each observation was discussed with the ICP or department manager at the time and confirmed as a deficiency.

Exhibit 2.9 - Deficiencies Identified during Our Visits to Hospitals

2.9 Deficiencies Identified during Our Visits to Hospitals

Hand hygiene

- Hand hygiene not done when required by policy - Horizon and Vitalité's self-auditing results show compliance rates below their stated goals. (See **Appendices V** and **VI**)
- Healthcare workers wearing rings and bracelets, which is non-compliant with policy. (**See paragraph 2.85 following this exhibit**)
- Areas where hand hygiene gel is absent or lacking
- Nurses observed wearing gloves in the hallway after leaving patient's room (non-compliant with policy)
- Employee delivering food in hemodialysis unit (higher risk), moving from patient to patient (touching environment and providing apples) without performing hand hygiene
- Inadequate hand hygiene signage throughout the hospital
- No hand hygiene gel or signage at staff entrances
- Outdated hand hygiene results posted for staff

Biomedical waste

- Biomedical waste improperly stored (**See paragraph 2.87**)
- Biomedical waste improperly left unattended in public corridor (**See paragraph 2.90**)
- Biomedical waste not collected separately (Collected from nursing unit together with linen and garbage)
- Filled yellow "sharps" containers (within a covered blue plastic bin) left unattended in public corridor
- Biomedical waste (red bins) in area next to a dedicated hand-washing sink and coffee cups in nursing unit (**See paragraph 2.90**)
- ***Overcrowded hemodialysis area*** (**See paragraph 2.91**)

Oncology

- Overcrowded treatment area (**See paragraph 2.94**)
- No cleaning between patients treated in the same chair (**See paragraph 2.96**)
- Insufficient number of washroom facilities

Isolation

- Wrong isolation sign used (risk of infection if adequate personal protective equipment not used).
- Isolation cart improperly stocked (risk of infection if adequate personal protective equipment not used).
- Clean isolation gowns stored in containers appearing like garbage cans (reported later in **paragraph 2.131)**.
- Isolation gowns not worn when required and not worn properly (not tied).
- Personal protective equipment removed improperly increasing the risk of contamination.
- Gloves worn in an isolated room continued to be worn outside of the room to do a task.
- Room not properly marked as having been occupied by patient requiring isolation, (i.e. therefore room needing special cleaning).

Continued …

Notes: The deficiencies were identified while doing a hospital tour with the ICP and/or facility manager or during "rounds" with ICPs. The deficiencies were confirmed at the time with the ICP or department manager at the hospital.

Source: Observations made by AGNB.

Exhibit 2.9 - Deficiencies Identified during Our Visits to Hospitals (continued)

2.9 Deficiencies Identified during Our Visits to Hospitals *(continued)*

Linen

- ✗ Cart with clean linen not properly covered during its transportation and delivery to the hospital .(**See paragraph 2.98**)
- ✗ Delivery trucks not properly cleaned before picking-up clean linen. (**See paragraph 2.99**)
- ✗ Uncovered clean linen (i.e. bedding, baby blankets, operating room linen) transported through the hospital.
- ✗ Soiled and/or torn cloth covers on clean linen carts. Limited washing or replacing of the cloth cart covers protecting clean linen. (**See paragraph 2.102**)
- ✗ Excess linen inventory: isolation gowns and operating room (OR) scrubs. (**See paragraph 2.104**)
- ✗ Clothing worn in the OR improperly stored. (**See paragraph 2.105**)
- ✗ Excess handling of clean linen. (Each time clean linen is handled there is a risk of contamination.)
- ✗ Use of "top-up" system for clean linen carts (possible contamination of remaining linen).
- ✗ Improper storage of clean sheets in nursing unit (overflowing garbage can on floor – **see photo with paragraph 2.175**).
- ✗ Clean linen in bag on the floor (**see paragraph 2.130 with photo**).
- ✗ Clean "cleaning cloths" for kitchen received from laundry facility in bags labelled "soiled linen."
- ✗ Limited cart washing since carts are always in use.
- ✗ Over-filled bags containing used linen (Bags are to be only 2/3 full, to allow proper closure – **see photo with paragraph 2.111**).
- ✗ Uncovered cart of uniforms in ER hallway (**see photo below**).

Disinfectant Wipes

- ✗ Cover of the container left open allowing wipes to become dry and ineffective (**see photo below**).
- ✗ Container with no cover.

Continued …

Notes: The deficiencies were identified while doing a hospital tour with the ICP and/or facility manager or during "rounds" with ICPs. The deficiencies were confirmed at the time with the ICP or department manager at the hospital.

Source: Observations made by AGNB.

× Uncovered cart of uniforms in ER hallway

× Cover of disinfectant wipes container left open

Exhibit 2.9 - Deficiencies Identified during Our Visits to Hospitals (continued)

2.9	**Deficiencies Identified during Our Visits to Hospitals *(continued)***

Improper/inadequate separation of clean and dirty

- × Clean linen room with poor location (**See paragraph 2.106**).
- × Storage cabinet containing clean gastro scopes located in procedure room – cabinet was open (**See paragraph 2.107**).
- × Nursing units – clean and dirty items stored in the same room; dirty items placed with clean items.
- Medical Device Reprocessing (MDR):
  - × clean masks (used for anesthesia during operations) kept in a cupboard in the "dirty room."
  - × clean scopes placed on counter in "dirty room" close to sink used for processing dirty scopes. (**See paragraph 2.107**)
  - × uncovered clean scopes walked through a public waiting area.
  - × clean scopes stored in an open cabinet.
  - × designated "clean" and "dirty" sides not properly separated or sealed.
  - × access to area not restricted (no signage, open door). (**See paragraph 2.107**)
  - × inadequate ventilation of scopes during drying.
  - × dirty scope transported though clean area where surgical trays are prepared.
- × Clean equipment and testing supplies stored in patient's washroom. (**See paragraph 2.108**)
- × Staff belongings (lunches, shoes, clothing) stored with clean hospital supplies in clean utility room and in ante-room (**see photo below**).
- × Supplies kept close to surgeons' hand hygiene sink with risk of splashing.
- × "Dirty" equipment (metal supplies going to MDR) stored in clean utility room, next to clean linen (**see photo below**).
- × Soiled linen hamper next to open clean linen cart.
- × Soiled linen hamper stored next to clean commodes.

Continued

Notes: The deficiencies were identified while doing a hospital tour with the ICP and/or facility manager or during "rounds" with ICPs. The deficiencies were confirmed at the time with the ICP or department manager at the hospital.

Source: Observations made by AGNB.

× Staff belongings stored with clean hospital supplies (uniforms) in ante-room

× "Dirty" equipment (tray of metal supplies going to MDR) stored in clean utility room, next to clean linen

Exhibit 2.9 - Deficiencies Identified during Our Visits to Hospitals (continued)

2.9	**Deficiencies Identified during Our Visits to Hospitals *(continued)***

Doors: missing or left open (doors are barriers and can limit the spread of infection)

- ✗ No doors and open doors to soiled utility room and to clean supplies/linen room.
- ✗ Open door to OR area - door was propped open, despite sign on door saying to keep closed at all times.
- ✗ Open door to scope reprocessing area.
- ✗ Open door to "dirty"/used tub room: feces, soiled laundry outside of bin, laundry bin with open lid.
- ✗ Open door between clean scope storage and patient treatment room.
- ✗ Other doors marked "keep closed" were left open. (**see photo below**)

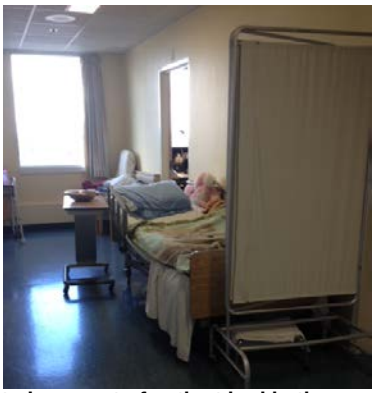
Other

- ✗ Permanent placement of patients in beds in the corridor using commodes (portable toilet) behind privacy screens. (**see photo below**)
- ✗ Shared equipment – using shared equipment without cleaning between patients
- ✗ Shared equipment – uncertainty whether some items were clean or used/dirty (inadequate labelling and/or storage).
- ✗ Outside shipping corrugated cardboard box in OR's core supplies area.
- ✗ Variation in use of signs in hospitals (**See paragraph 2.109**).
- ✗ Inadequate labelling of clean and dirty storage areas.
- ✗ Cafeteria cart cleaning room used for EVS storage including bucket and mop used to clean patient rooms.
- ✗ Entrances to hospital not designated specifically to either the public or staff (signage and restricted access).
- ✗ Infrequent visits from ICP to hemodialysis satellite unit (twice in 7 years).
- ✗ Construction areas not properly sealed-off from patient areas (with proper ventilation and not marked for restricted access). (**See paragraph 2.110**)
- ✗ Tub room used as storage area (and no other tub room in nursing unit).
- ✗ Inadequate signage and availability of masks at public entrances.

Notes: The deficiencies were identified while doing a hospital tour with the ICP and/or facility manager or during "rounds" with ICPs. The deficiencies were confirmed at the time with the ICP or department manager at the hospital.

Source: Observations made by AGNB.

× Doors marked "keep closed" were left open



× Permanent placement of patient bed in the corridor with commode use behind privacy screen

2.84 The deficiencies in **Exhibit 2.9** were identified during our visits to eight hospitals. To serve as examples, we provide details on the following deficiencies:

- healthcare workers wearing rings and bracelets, which is non-compliant with policy;
- biomedical waste was improperly stored;
- overcrowded hemodialysis area;
- overcrowded oncology area;
- no cleaning between patients treated in the same chemotherapy chair;
- clean laundry arriving at hospitals is not always properly covered;
- linen delivery trucks not properly cleaned;
- limited washing or replacing of the cloth cart covers protecting clean linen;
- excess linen inventory;
- clothing worn in the OR improperly stored;
- clean linen room in a poor location;
- improper/inadequate separation of clean and dirty in Medical Device Reprocessing units;
- equipment and testing supplies stored in patient's washroom;
- variation in use of signs in hospitals; and
- construction areas not properly sealed-off from patient areas (with proper ventilation and not marked for restricted access).

2.85 ***Healthcare workers wearing rings and bracelets, which is non-compliant with policy*** – We observed many healthcare workers in several of the hospitals who were wearing jewelry. For example, we observed nurses, nurse managers, doctors and surgeons wearing rings. Similar observations were made throughout the hospitals in various units, including higher risk areas such as intensive care and

surgery.

2.86 Vitalité's hand hygiene policy prohibits rings, wedding bands and arm jewelry. While attending meetings at Vitalité hospitals, we made observations:

- At a nursing unit staff meeting with 11 attendees, seven people were wearing rings and one person had artificial nails (also prohibited by the policy). All of these employees would have had direct contact with patients.

- At a second meeting concerning hand hygiene initiatives, where most of the attendees were nurse managers, we observed four diamond rings, five bands and four bracelets.

- We were also invited to a *Local Area Infection Prevention and Control Committee* meeting in a hospital. There were 11 attendees. Three of the six doctors wore rings and two nurses wore rings.

2.87 ***✗ Biomedical waste improperly stored*** - "*Biomedical waste represents a small proportion (typically 10 to 15%) of the total volume of waste generated by health care facilities. Such waste requires proper handling and disposal because of environmental, aesthetic, and occupational concerns, as well as risks to human health.*" [39] Biomedical wastes include the following:

- Human anatomical waste (human tissues, organs and body parts, not including teeth, hair and nails) which is stored in labelled red plastic bins or bags;

- Cytotoxic waste (drugs used in cancer treatment) which is stored in labelled red plastic bins or bags;

- Blood and blood products (along with any tubing containing blood and items saturated with blood) which are stored in labelled yellow plastic bags;

[39] Canadian Standards Association - Canadian Council of Ministers of the Environment, *Guidelines for the Management of Biomedical Waste in Canada*, 1992.

- Microbiology laboratory waste (cultures, specimens of microorganisms and vaccines) which is stored in labelled yellow plastic bins or bags; and
- Sharps (needles, syringes, scissors, blades, etc.) which are stored in labelled yellow plastic bins.

2.88 Horizon staff indicated waste management standards require final storage areas for general waste (including biomedical waste) within hospitals:

(a) to be totally enclosed;

(b) to be locked when unoccupied;

(c) to have access restricted to authorized personnel only;

(d) to be separate from supply rooms or food preparation areas;

(e) to have negative pressure ventilation; and

(f) to have appropriate signage as required by legislation.

2.89 Standards require human anatomical waste be stored at 4°C or lower, and biomedical wastes other than sharps be stored at 4°C or lower if stored for more than four days. Biomedical waste storage facilities are to be clearly marked with a sign that displays the biohazard symbol.

× Biomedical wastes left unattended in a public corridor

2.90 We observed the following deficiencies regarding the improper handling and storage of biomedical wastes:

- × In one hospital, biomedical wastes (two plastic bins and two red plastic bags) were left unattended in a public corridor. The lid of one red plastic bin was not properly closed. (Bins are to be securely sealed with snapped lids.) We were later informed it was cytotoxic waste (i.e. drugs used in cancer treatment) from the cancer treatment area.
- × In a second hospital, the final storage room for biomedical wastes was not locked, the sign on the door was very small and not readily noticeable, the

× Broken temperature gauge (biomedical wastes storage room)

× Cytotoxic waste kept in the patient treatment area next to a dedicated hand-washing sink and coffee cups

temperature gauge outside of the room was broken, and the refrigeration of the room was not working. We were informed that the room had not been locked for years, and the temperature had been improperly working on-and-off for several months. The facility manager, the EVS manager and the ICP were unaware of the situation.

- × In a third hospital, the final storage room for biomedical wastes was not locked. We were informed that the room was never locked because staff needed access to oxygen tanks that were also kept in the area. The facility manager, the EVS manager and the ICP were unaware of the situation.
- × In a fourth hospital, in the chemotherapy treatment area, red bins for cytotoxic waste were kept in the patient treatment area next to a dedicated hand-washing sink and coffee cups.

2.91 ***× Overcrowded hemodialysis area -*** Hemodialysis is a treatment needed by people whose kidneys are unable to function properly. Patients needing hemodialysis have an increased risk of acquiring an infectious disease. We observed four hemodialysis treatment areas.

2.92 In two hospitals, there appeared to be adequate space between the patient treatment chairs. Upon inquiry, staff informed us the unit complied with space requirement standards.

2.93 In the other two hospitals, the patient treatment chairs were close to each other and the unit appeared very crowded. Upon inquiry in one hospital where several patients were receiving treatment in a relatively small area, staff in the unit informed us the space was currently serving 28 patients at a time, when according to the standards the space should only serve 17.

2.94 ***× Overcrowded oncology area -*** People with cancer sometimes go to a clinic in the hospital to receive chemotherapy. Patients recline in a chair while they receive their medication intravenously. Chemotherapy patients have an increased risk of acquiring an infectious disease due to being

immunocompromised.

2.95 We observed five oncology clinics. In two hospitals, there appeared to be inadequate space between the patient treatment chairs; the ICPs agreed with our observation. In a third hospital, the ICP informed us the space was currently being used to serve 13 patients simultaneously, when according to the standards, the space should only serve 7. We were also told the hospital has a large number of people in their area needing chemotherapy and this overcrowding was one of their many challenges resulting from limited space.

2.96 ***✗ No cleaning between patients treated in the same chemotherapy chair -*** Treatment times vary for each patient and each chair serves multiple patients throughout the day. Proper cleaning between patients should be a priority.

2.97 At the five oncology clinics we visited, we asked about cleaning practices between patients. In most units, nurses changed the linen and wiped surfaces to disinfect between patients. However in one hospital, the treatment chairs and surrounding area were not cleaned between patients. We were informed the area was only cleaned at the end of the day.

✓ Linen cart covered with a large plastic bag to keep laundry clean.

2.98 ***✗ Clean laundry arriving at hospitals is not always properly covered -*** In most hospitals, laundry services are provided offsite by *FacilicorpNB*. (*FacilicorpNB* is a public sector agency managing shared services for the health-care system. Its mandate is to provide safe, cost-effective and innovative support services to RHAs, nursing homes, and the Department.) Dirty laundry is removed from the hospital and clean laundry is provided. Laundry is transported on trucks. Clean laundry is delivered to the hospital on carts. We observed clean laundry being delivered at five hospitals and found three different methods used for covering the clean laundry cart.

- ✓ In three hospitals, the clean laundry cart was completely covered with a large plastic bag. The bag was loose, allowing for staff to grip the side of the cart for transporting without tearing the

plastic. This is a good method for keeping laundry clean.

- In a fourth hospital, the clean laundry cart was wrapped tightly in plastic on the sides. The top was open exposed to the air. Holes were torn into the plastic on the side to allow a hand to grip the metal bars of the cart for transporting. It would be difficult to ensure the delivery of clean laundry using this method. Dust, dirt or germs could enter from the top and/or a dirty hand gripping the bar could contaminate the laundry.
- In a fifth hospital, the clean laundry cart was open to the air. Clean laundry was delivered on a cart without a covering. This is not an appropriate method for transporting and delivering clean laundry for hospital use.

2.99 ***Linen delivery trucks not properly cleaned*** - We had the opportunity to see clean linen being delivered in two hospitals. At one hospital, we spoke with the truck driver and examined inside the truck box, where the clean linen was stored during transportation. We noted the following:

Linen delivery truck with dirt on rolling door

Wooden sides in linen delivery truck do not allow for effective cleaning

- The same truck is used to transport both clean and dirty linen. Documented procedures state the truck is to be cleaned with a disinfectant between transporting dirty and clean linens. The sides of the delivery truck were wooden, which would not allow for effective cleaning.
- The truck transports other items with the linen. Clean linen is supposed to be the last item loaded on the truck and the first item unloaded; therefore, the clean linen is stored at the back of the truck box. The back door, next to the clean linen, appeared very dirty. The driver explained the dirt was road splash, which was able to enter the truck during transport because the back door was not airtight.
- The driver informed us he cleaned the truck once a week using soap and water. He confirmed that he did not use a disinfectant.

2.100 At a hospital in another zone, we were told the delivery truck was sprayed with disinfectant every time soiled items are unloaded, then rinsed with warm water. The driver informed us the water freezes on the metal floor of the truck in the winter, therefore he has to spread rock salt on the floor. Since the clean linen cart covers are not attached at the bottom of the cart, the clean linen could become contaminated.

2.101 In a third zone, we were told the linen delivery truck was washed with a pressure washer at a car wash the week before our visit, and prior to this it was last washed several months prior. We were also told the truck was not washed during the winter as the water freezes to the metal floor and creates a hazard.

× Clean linen cart with a dirty cover

2.102 ***× Limited washing or replacing of the cloth cart covers protecting clean linen –*** Some hospitals have onsite laundry services. Since these carts with fabric covers are always in use, neither the cart nor the cloth cover get washed. We observed some dirty cart covers (over clean linen) and some that were torn.

2.103 Patients receiving hemodialysis are considered to have a higher risk of acquiring an infection. In the clean supplies room of a hemodialysis unit, we observed a clean linen cart with a dirty cover.

× Excess OR linen stored in poor location

2.104 ***× Excess linen inventory*** **-** Unused linen can become dirty or contaminated if left for long periods of time. We observed one situation where the amount of stored linen appeared in excess of normal requirements. We noted the following:

- × There were approximately 630 isolation gowns being stored at the hospital. We were told that 300 gowns would be more than sufficient.
- × For the same hospital, it was confirmed that the amount of stored operating room (OR) linen was far in excess of what was needed.

2.105 ***× Clothing worn in the operating room improperly stored*** **-** In one hospital, we went into the

× Clean scrubs next to garbage

OR staff members' change-room. For the convenience of OR staff members, surgical linen in various sizes is kept in the male and female change-rooms. We made the following observations:

- × the clean scrubs were stored in open air. They were not in a closet/cupboard and they were not covered with plastic;
- × in the male change-room, the clean scrubs were next to shoes, potentially a source of contamination; and
- × in the female change-room, the clean scrubs were next to an open garbage can and close to the floor.

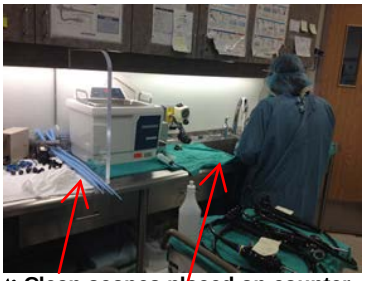
2.106 × ***Clean linen room in a poor location*** – Clean laundry arrives on carts and is stored in the clean linen room until it is distributed to the various nursing units. In one hospital, we found a risk of clean linen becoming contaminated because of the following:

× Clean linen room in a poor location: maintenance employees must walk through the clean linen room daily to access their storage area

- × The clean linen room was located in an area adjacent to two other rooms containing cleaning supplies. None of the three rooms had doors.
- × The maintenance storage garage was next to the clean linen room. This storage garage contained items such as salt for outside use in the winter, oxygen tanks used in the hospital, and the water softener. The clean linen room is the only inside entrance to the storage garage. Consequently, maintenance employees must walk through the clean linen room daily to access their storage area and check the water softener. We were informed that at times the door between the two rooms is blocked open. The storage garage appeared somewhat dirty at the time of our visit.

2.107 × ***Improper/inadequate separation of clean and dirty in Medical Device Reprocessing units*** - Medical Device Reprocessing refers to cleaning, disinfecting and/or sterilizing items so they can be safely reused in the hospital. Examples of items sent for reprocessing include instruments used in surgery,

and bed pans. Most hospitals have a larger main Medical Device Reprocessing unit for general reprocessing, as well as smaller reprocessing units in areas such as gastrointestinal (GI) scope procedure clinics. There are many infection prevention and control standards for Medical Device Reprocessing units. One requirement is that Medical Device Reprocessing units have restricted access and proper signage. We visited five of these smaller units in different hospitals and observed the following:



× Clean scopes placed on counter in "dirty room" close to sink used for processing dirty scopes

× Open storage cabinet with clean gastro scopes in procedure room (area left unattended)

- × Most units had inadequate signage to indicate restricted access and/or the requirement for PPE;
- × The door to the reprocessing room was left open in four units;
- × The clean scope storage cabinet door was kept open in several cases, in two cases unattended. This increases the risk of the clean scopes getting contaminated;
- × In one unit, the decontamination of used scopes and drying of clean scopes was completed in the same room, with only a small glass partition for separation; and
- × In one hospital, the storage cabinet containing clean gastro scopes is located in the same room where the procedure is performed on the patient. At the time of our walk-through, both the door to the procedure room and the scope storage cabinet were open.

× Clean equipment stored in patient's washroom

2.108 ***× Clean equipment and testing supplies stored in patient's washroom*** **-** In a chemotherapy treatment unit/clinic, we observed clean equipment being stored in the bathtub in a patient's washroom. Testing supplies were also stored on a low open shelf across from the toilet in the washroom.

2.109 ***× Variation in use of signs in hospitals*** **-** While both Horizon and Vitalité have hand hygiene

× Testing supplies stored in patient's washroom

✓ Hand hygiene sign with hand hygiene gel dispenser

✓ Good signage regarding the proper use of personal protective equipment was limited.

and respiratory etiquette[40] signs that were commonly posted, we observed inconsistencies regarding infection prevention and control signage in the hospitals. Deficient signage may result in visitors not taking appropriate infection control measures. We observed the following:

- The amount of signage varied. In one hospital, there appeared to be a hand hygiene sign by virtually each hand hygiene gel dispenser. In another hospital signage was rare;
- In one hospital we asked why hand hygiene signs were not prevalent. We were told the hospital had approximately 500 signs that had been awaiting installation for over a year. A few days later, we observed the signs being installed throughout the hospital.
- We observed only one Horizon hospital having a sign indicating the proper sequence for putting on and taking off personal protective equipment. This type of signage was more prevalent in Vitalité hospitals we visited. In hospitals within both RHAs, we observed isolation gowns not worn when required and not worn properly by staff and/or visitors; and
- × Clean utility rooms (where new and/or clean hospital supplies and equipment are stored in each nursing unit) and soiled utility rooms (where garbage and used hospital supplies and equipment are stored) were not properly labelled in many hospitals. We observed one unit where a utility room was labelled as a "soiled utility room"; however, it was being used as a clean utility

[40] **Respiratory Etiquette:** Personal practices that help prevent the spread of bacteria and viruses that cause acute respiratory infections (e.g., coughing or sneezing into a tissue or into one's sleeve or elbow, care when disposing of tissues and the performance of hand hygiene). This is also referred to as '*respiratory hygiene*' or '*cough etiquette*'. (*Infection Prevention And Control Audit for Routine Practices - Toolkit Version 2*, September 2009© CHICA-Canada; Revised September 28, 2012)

✗ **Construction areas not properly sealed at ceiling or floor**

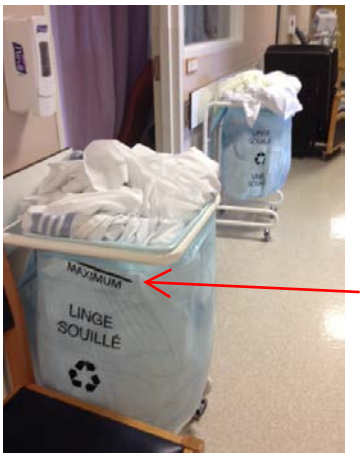
room. Depending on the circumstances, one misplaced item could contaminate clean hospital supplies and equipment in this room.

2.110 ***✗ Construction areas not properly sealed-off from patient areas (with proper ventilation and not marked for restricted access)*** – For example, not realizing the room was under construction, a nurse manager placed a cart with clean linen (uncovered) in a room for temporary storage while the room was being renovated.

Conclusion

2.111 Based on the number and variety of deficiencies we observed, we believe there is inadequate monitoring of infection prevention and control policies and practices in hospitals. Many of the deficiencies were obvious during our hospital tours. Given many of the identified deficiencies relate to healthcare workers not complying with infection prevention and control policies (hand hygiene, use of personal protective equipment, etc.), we also conclude the RHAs need to strengthen enforcement of policies and procedures.

Many deficiencies were obvious:

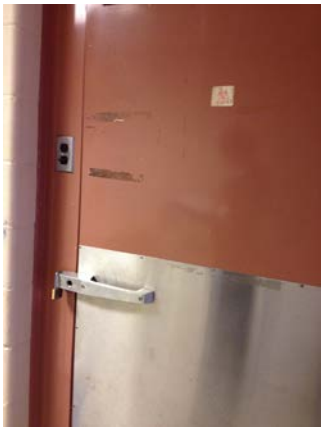


× Overfilled soiled linen hampers

× Tray of "dirty" equipment next to sign indicating not to place there

Storage rooms for biomedical wastes

✓ Proper labelling



× Inadequate labelling

Recommendations

2.112 We recommend the Horizon and Vitalité Health Networks address deficiencies in infection prevention and control practices within their respective programs, including but not limited to those reported in Exhibit 2.9 such as:

- **hand hygiene not done when required by policy, healthcare workers wearing rings and bracelets, areas with inadequate signage and gel;**
- **biomedical waste improperly stored;**
- **overcrowding in hemodialysis and oncology areas whose patients have an increased risk of acquiring an infectious disease;**
- **no cleaning between patients treated in the same chemotherapy chair;**
- **isolation inadequacies (signage, carts supplies, use of personal protective equipment, etc.);**
- **linen deficiencies (clean laundry arriving at hospitals without being properly covered, linen delivery trucks not properly cleaned, uncovered clean linen transported through the hospital, inadequate washing or replacing of the cloth cart covers protecting clean linen, excessive linen inventories, improper storage of clothing worn in the operating room, etc.);**
- **containers of disinfectant wipes left open;**
- **inadequate separation of clean and dirty items and storage space (clean linen stored in poor locations, inadequate separation within nursing units and Medical Device Reprocessing units, equipment and testing supplies stored in patient's washrooms, poor placement of soiled linen hampers, etc.);**
- **doors missing or being left open;**
- **permanent placement of patients in beds in the corridor;**
- **inadequate cleaning, labelling and storage of shared equipment;**
- **insufficient signage (public entrances) and**

labelling ("clean" and "soiled" items, storage areas, etc.); and

- **construction areas not properly sealed-off from patient areas (with proper ventilation and signs restricting access).**

2.113 We recommend the infection prevention and control professionals and all managers do regular "walk-arounds" observing for compliance with policies and standards, reporting deficiencies to the units/departments, and ensuring corrective action is taken by those units/departments. Deficiencies should be monitored and reported to appropriate committees and/or department heads.

2.114 In smaller hospitals without on-site managers, we recommend the infection prevention and control professional and unit/department managers perform site visits on a regular basis. These visits will provide the opportunity to better monitor the smaller facility. Also, it will provide staff members with the opportunity to ask questions and identify challenges with which they are dealing.

2.115 We recommend the Horizon and Vitalité Health Networks enforce compliance with infection prevention and control policies by all staff members, in all hospitals.

Key Finding: ✗ There are Inconsistencies within and between the RHAs' Infection Prevention and Control Programs.

Background

2.116 Hospitals around the Province provide different services and patients may get services at more than one hospital. (For example, Fredericton residents may travel to the hospital in Saint John for radiation treatments for cancer.) We believe New Brunswickers should be provided with consistent quality services regardless of the hospital, including a consistent infection prevention and control program.

2.117 During our visits to hospitals and our review of documentation, we observed inconsistencies:

- within Horizon's infection prevention and control program;
- within Vitalité's infection prevention and control program; and
- between the two RHAs' programs.

Specific inconsistencies observed within programs

2.118 **Exhibit 2.10** presents our observations about specific inconsistencies within Horizon's and/or Vitalité's programs. We provide further details on a few of our observations, which included the following:

- ✗ There are variations in the ICPs' work in different zones;
- ✗ Inconsistencies with isolation gowns may result in the spread of infections; and
- ✗ Administrative support and expert resources are not available in each zone.

Exhibit 2.10 - Inconsistencies within Horizon's and/or Vitalité's Program

2.10 Inconsistencies within Horizon's and/or Vitalité's Programs

- ***Program policies and procedures are different in each zone (and between the two RHAs).***

  Prior to the formation of Horizon and Vitalité in 2008, there were eight RHAs operating independently. Each had their own policies and procedures. Both Horizon and Vitalité were formed from four of the RHAs. This has resulted in four different sets of infection prevention and control policies and procedures within each of the current two RHAs.

  We were informed Horizon intends to standardize the program's policies and procedures. However, at the time of our audit, only five of their program policies were regional. Vitalité also informed us it intends to standardize the program's policies and procedures. At the time of our audit, 23 of their program policies were regional. Given it has been six years since the RHAs were established, we expected further progress in standardized policies and procedures.

- ***Inconsistencies in ICPs' knowledge of appropriate practices and education***- examples include the following:
  - There are different practices for personal protective equipment used by reprocessing staff. Inside the "dirty room" is an acceptable location for storing, putting on and taking off in some hospitals, but not in others.
  - There are different locations for storing clean commodes. Some hospitals informed us the soiled utility room is an acceptable location, others told us it was not.
  - There are different collection procedures for biomedical waste. In some hospitals it is collected separately from other garbage and/or linen, while in other hospitals, it was not.
  - Performing hand hygiene audits (explained later starting in **paragraph 2.166)**
  - While all ICPs are nurses, only some have taken additional education in infection control.

  We believe all ICPs should have specialized training in infection prevention and control.

- ***The allocation of the ICPs does not appear consistent.***

  We did an analysis on the number of ICPs and the number of acute care beds in each zone, which provides a reasonable comparison of resource levels in various geographic zones.

  In three of Horizon's zones, the average number of beds per ICP ranged from 141 to 151. In the fourth zone, the average number of beds per ICP was 81. This suggests one zone has more ICP resources than the other three.

  In three of Vitalité's zones, the average numbers of beds per ICP ranged from 181 to 205. In the fourth zone, the average number of beds per ICP was 148. Again, this suggests one zone has more ICP resources than the other three.

  Comparing Horizon to Vitalité, Horizon appears to have more ICP resources. While there is no national standard or mandated ratio for resourcing, literature suggests one ICP for every 100-133 acute care beds (with more resources required for specialized programs) and resourcing should not be made on the basis of bed numbers alone. We believe if the beds are spread between multiple hospitals, this would increase the resources required. ICPs having too much work was discussed with us by people in various positions in several zones. Based on the literature and our findings, the ICP workload appears excessive.

- ***There are variations in the ICPs' work in different zones.*** (**See paragraph 2.119**)
- ***Inconsistencies with isolation gowns may result in the spread of infections.*** (**See paragraph 2.127**)
- ***Administrative support and expert resources are not available in each zone***. (**See paragraph 2.134**)

Notes: The observations were made during our visits to hospitals and our review of documentation.

Source: Observations made by AGNB.

There are variations in the ICPs' work in different zones.

2.119 While the role of the ICP is essentially the same in each of the eight zones, we did observe variations in the ICP's day-to-day work in the following areas:

- presence in the nursing units and clinics;
- surveillance work; and
- auditing for compliance with routine practices. (This is discussed later in the chapter, starting with **paragraph 2.164**.)

Clean linen is stored too close to dirty linen. Typically ICPs would correct this situation and remind staff of proper procedures during their rounds in the nursing units.

2.120 *Presence in the nursing units:* The ICP's work in the nursing units typically involves following-up on cases identified during the ICP's surveillance work and performing audits (monitoring for compliance with infection prevention and control standards). We believe the ICP's work in the nursing units is very important in preventing the spread of infections between patients.

2.121 During our interviews with ICPs from each zone in Horizon and Vitalité, we learned there is inconsistency in the frequency of the ICPs' visits in the nursing units. Some zones reported their ICPs visited the units every day in their main hospital. Other zones reported the ICPs usually visited the nursing units a couple of times each week. All zones reported less frequent visits to nursing units in remote hospitals. In one zone, we were informed one hospital is visited by the ICP only once every three months.

2.122 Clinics, "ambulatory" or "out-patient", refer to areas in a hospital where services are provided to patients not staying in the hospital. Community residents go to the hospital to access healthcare services provided in clinics, for example: hemodialysis, blood testing, and gastrointestinal scope procedures. In many hospitals, the ICP does not visit the clinic areas on a regular basis.

2.123 Hemodialysis is a treatment needed by people whose kidneys are unable to function properly. Patients recline in a chair with tubing attaching them to a machine. Their blood circulates through the machine which removes impurities, performing the function of healthy kidneys. The treatment takes a few hours. People receiving hemodialysis are considered to have a higher risk of getting an infection.

2.124 We expected hemodialysis clinics to be visited regularly. However, we found this was not the case in many hospitals. In some zones, there are hemodialysis

clinics administered by the hospital that operate off-site. We asked about the frequency of ICP visits at two such clinics. At one location, the ICP reported visiting approximately three times per year. At the other, the ICP had visited twice in the past seven years.

2.125 The RHAs do not have documented guidelines for the frequency of visits to the nursing units and clinics, and we believe the current frequency of visits to some units is insufficient.

2.126 *Surveillance work:* In each zone, the ICP's day typically begins with surveillance work. This involves reviewing several reports to identify the presence or possible presence of infections in the hospital in order to mitigate the risk of spreading. We observed a significant difference in the amount of time it took the Horizon ICPs to do their daily surveillance work. We were informed this was due to there being different information systems in the various zones. (Some systems were able to generate exception reports which reduced the time for the ICPs.) We were also informed that Horizon was at the time looking at the area of surveillance work for potential improvements.

✗ Inconsistencies with isolation gowns may result in the spread of infections.

2.127 To mitigate the risk of spreading infection, isolation gowns are worn by healthcare workers and visitors when a patient is isolated. A sign is posted notifying all people to put on a gown prior to entering an isolation room. We observed inconsistencies in appearance, location and labelling of isolation gowns used throughout hospitals.

✓ Blue disposable isolation gowns on cart with other personal protective equipment

2.128 In one hospital, disposable isolation gowns were provided. They were neatly folded and provided on a cart with other isolation supplies. It was very clear the gowns were new and for use.

2.129 In another location, cloth isolation gowns were used. They were neatly folded and provided on a cart wrapped with clear plastic. It was clear the gowns were clean and for use.

✓ Cloth isolation gowns on cart wrapped with clear plastic

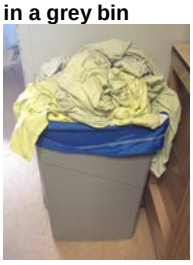
2.130 In another hospital, clean cloth isolation gowns were in plastic bags. The gowns were not folded and the bag appeared to be a transparent garbage bag. Sometimes the large bag was put on a cart with other isolation supplies. Other times it was on the floor. We believe these gowns could confuse visitors expected

to wear them. Visitors may see them as a bag of garbage and put garbage in with them or they may see them as dirty gowns and put used contaminated gowns in with the clean ones. This could cause the spread of infection.

× Clean isolation gowns in a plastic bag on floor

2.131 In a fourth hospital, clean isolation gowns were in a grey plastic bin on the floor. The gowns were not folded. The grey plastic bin looked virtually identical to the grey garbage cans used in the hospital. We believe visitors may see the gowns as dirty and put used contaminated gowns in with the clean ones. This could cause the spread of infection.

Clean isolation gowns in a grey bin



Garbage can

2.132 We observed more confusion with the grey bins. One was labelled “Clean Isolation Gowns” and had a cloth lining, yet it contained garbage.

Grey bin labelled “Clean Isolation Gowns” containing garbage

2.133 The inconsistencies in appearance, location and labelling of isolation gowns currently used throughout hospitals can cause confusion. This is a risk because the proper use of isolation gowns is important to infection prevention and control and improper use may result in the spread of infections.

× Administrative support and expert resources are not available in each zone.

2.134 We found two significant inconsistencies regarding the resources supporting ICPs in Horizon’s and Vitalité’s zones (see **Exhibit 2.11**).

Exhibit 2.11 – Inconsistency in Allocation of Administrative and Expert Resources

2.11 Inconsistency in Allocation of Administrative and Expert Resources

Zone (note 1)	Administrative Support (note 2)	Expert (microbiologist/infectious disease specialist)
Horizon		
A	1.0 FTE	Yes
B	1.0 FTE	No
C	0.4 FTE	Yes
D	0	Yes
Vitalité		
A	< 0.4 FTE	No
B	< 0.25 FTE	Yes
C	< 0.25 FTE	No
D	< 0.1 FTE	Yes

Notes:

1. For anonymity, zones are identified by letters in this exhibit.
2. Time allocated to Infection Prevention and Control Program in full-time equivalent (FTE) units, as estimated by administrative support staff.

Source: Chart created by the AGNB with information provided by Horizon Health Network and Vitalité Health Network.

✓ **In some zones, administrative support ensure infection prevention and control program signs are present and in good condition throughout the hospital and public entrances are supplied with hand hygiene gel, masks & good signage**

2.135 The first inconsistency involves administration support to the program. In three of the four Horizon zones, there was a person assigned to provide administrative support to the ICPs. We met with them and discussed their responsibilities. In addition to performing general office duties, their tasks included processing data from hand hygiene audits and generating compliance reports, monitoring compliance of MRSA[41] and VRE[42] screening with policy, and helping the *Local Area Infection Prevention and Control Committee* (making meeting arrangements, preparing documents, recording minutes, etc.)

2.136 In the zones with little or no administration support, these tasks are either done by the ICPs or not completed at all. We believe the administrative employee provides valuable support to the ICPs by allowing them to use their time on more demanding professional infection prevention and control activities, such as monitoring for compliance with standards.

2.137 In each of the four Vitalité zones, there was a person assigned to provide administrative support to the ICPs. However they were providing less than 0.4 FTE in terms of time dedicated to the program due to their other assignments. In one zone, while the allocated time was supposed to be 0.5 FTE, the actual time dedicated was estimated to be less than 0.1 FTE. We met with them and discussed their responsibilities, which were similar to the tasks done by their peers within Horizon.

2.138 The second inconsistency involves access to

[41] MRSA - *Methicillin-resistant Staphylococcus aureus: Strains of a common bacterium (S. aureus) that are resistant to beta-lactam antibiotics and that have been responsible for many outbreaks of infection over the past two decades.* ("*Essential Resources for Effective Infection Prevention and Control Programs: A Matter of Patient Safety: A Discussion Paper*".)

[42] VRE - *Vancomycin-resistant enterococcus: A strain of a common bacterium (enterococcus) that is resistant to many commonly used antibiotics, including vancomycin.* (Nosocomial and Occupational Infections Section - Division of Blood Safety Surveillance and Health Care Acquired Infections - Centre for Communicable Diseases and Infection Control - Public Health Agency of Canada, excerpts from *Essential Resources for Effective Infection Prevention and Control Programs: A Matter of Patient Safety: A Discussion Paper*.)

expert resources. In three of the four Horizon zones, there was an infectious disease specialist and/or a medical microbiologist assigned as an expert resource to support the ICPs. Two zones had access to multiple experts. One zone did not have an expert to consult with when difficult infection control issues arose.

2.139 Within Vitalité, there was an infectious disease specialist and/or a medical microbiologist assigned as an expert resource to support the ICP(s) in two of the four zones. (One of these zones actually employed four experts.) The other two zones did not have an expert to consult with when difficult infection control issues arose.

2.140 Having access to expert resources, including an infectious disease physician and/or a medical microbiologist, is considered essential for effective infection prevention and control programs, as discussed earlier. Without access to these specialists, it is possible for an infectious outbreak to occur or for an existing outbreak to become more severe because proper preventive and containment practices were not promptly exercised.

Specific inconsistencies observed between programs

2.141 **Exhibit 2.12** presents our observations of specific inconsistencies between Horizon's and Vitalité's programs, which relate to the following:

- regional policies and procedures for the program;
- requirements for healthcare workers to take refresher training on infection prevention and control routine practices and hand hygiene;
- hand hygiene;
- public awareness;
- environmental services;
- hospital areas undergoing construction;
- MRSA screening and monitoring;
- infection prevention and control committees; and
- performance indicators for the program.

Exhibit 2.12 - Inconsistencies between Horizon's and Vitalité's Programs

2.12 Inconsistencies between Horizon's and Vitalité's Programs

Program component	Horizon	Vitalité
1. Regional policies and procedures *for the infection prevention and control program*	As of April 2014, Horizon had 5 regionalized policies and procedures.	As of April 2014, Vitalité had 23 regionalized policies and procedures.
(Horizon and Vitalité were established in 2008.)	No regional policy on routine practices.	Regional policy on routine practices dated Nov. 2012.
2. Requirements for healthcare workers to take refresher training *on infection prevention and control routine practices and hand hygiene*	Annually	Every two years.
3. Hand hygiene		
• *Hand hygiene **policy** (very significant to the program)*	Regional policy dated Dec. 2013 Allows wedding rings – "smooth band."	Regional policy dated May 2011 No rings allowed.
• *Hand hygiene **signage** in hospitals*	Very prevalent throughout most hospitals.	Lacking in many areas in hospitals, even at some public entrances.
• *Hand hygiene **compliance rate** is a performance indicator for the program*	Yes – target compliance rate is 80%. Compliance figures for each hospital measured since 2010.	Yes – target compliance rate is 100%. Compliance figures for each hospital yet to be consistently measured.
4. Public awareness	Most public entrances had good signage relating to infection prevention and control and adequate supplies (hand hygiene gel and masks).	Few public entrances had good signage relating to infection prevention and control; most had hand hygiene gel and some had masks.

Continued …

Notes: The importance of the "**Program components**" noted above is explained here:

1. ***Regional policies and procedures*** are to be followed by all hospitals within the RHA, while zone policies apply only to hospitals within that specific zone (i.e. a specified geographic area).
2. ***Refresher training*** reminds healthcare workers of significant procedures and reinforces the importance of performing them consistently.
3. ***Hand hygiene*** is one of the most effective ways to stop the spread of germs and infections.
4. ***Public awareness*** ensures everyone knows their role and responsibilities in infection prevention and control.

Source: Observations made by AGNB during our visits to hospitals and our review of documentation.

Exhibit 2.12 - Inconsistencies between Horizon's and Vitalité's Programs (continued)

2.12 Inconsistencies between Horizon's and Vitalité's Programs *(continued)*

Program component	Horizon	Vitalité
5. EVS ("housekeeping")		
• ***Regional*** *policies and procedures*	The same Standard Operating Practices (SOPs) are used by all zones to ensure housekeeping services are consistent in all hospitals. Horizon understands them to be "provincial" SOPs used by both RHAs.	Different policies and procedures used in each zone. Vitalité does not see Horizon's SOPs as provincial policies yet (believes the SOPs are "draft" and not using them).
• *EVS* ***manager sits on Local Area Infection Prevention and Control Committee***	Yes in all four zones.	Yes in one zone; no in three zones.
• *Regular* ***meetings of managers*** *from hospitals*	Meet quarterly to share recent challenges and best practices.	Do not meet regularly.
• ***E-learning for infection prevention and control training modules on hand hygiene & routine practices***	Yes in all four zones. Annual refresher training is monitored and reported as a performance indicator (% of EVS staff that completed required training).	New initiative: available in two zones. Monitoring yet to be established.
• ***Auditing*** *by EVS manager/supervisor*	Yes in the four zones. Auditing of cleaned rooms only.	Yes in two zones; beginning to audit in 3rd zone (not all hospitals) In addition to auditing cleaned rooms, some auditing of staff while cleaning (procedures and products).
• ***Performance indicators*** *for EVS department (other than financial & statistics)*	Yes – consistent in the four zones.	No, but starting to develop in fall of 2014.
6. Hospital areas undergoing construction	ICPs informed. Area sealed-off from patient areas with proper ventilation and well-marked for public awareness.	ICPs not always informed. Areas not always sealed-off with proper ventilation or well-marked for public awareness.

Continued …

Notes: The importance of the "**Program components**" noted above is explained here:

5. ***EVS ("housekeeping")*** staff members with appropriate training provide a clean and safe environment for patient care.
6. ***Hospital areas undergoing construction*** must comply with specific infection prevention and control standards, which include having the area sealed-off from patient areas.

Source: Observations made by AGNB during our visits to hospitals and our review of documentation.

Exhibit 2.12 - Inconsistencies between Horizon's and Vitalité's Programs (continued)

2.12 Inconsistencies between Horizon's and Vitalité's Programs *(continued)*

Program component	Horizon	Vitalité
7. MRSA screening and monitoring	Questionnaire used by admission staff to determine when swabbing is needed. Monitoring of swabbing done with a lag time.	Admission screening of all admitted patients. Daily monitoring to ensure all swabbing done.
8. Infection prevention and control committees	Stable *Local Area Infection Prevention and Control Committee* in three zones (one zone without committee for 2 years and then re-established in Sept. 2013).	*Local Area Infection Prevention and Control Committee* in each zone; however some committees appear to be less stable (There has been much turnover in the chairpersons and meeting frequency of two committees was not complying with its *Terms of Reference*.).
	Local Area Infection Prevention and Control Committees report to the *Regional Infection Prevention and Control Committee*, which reports to the *Regional Quality and Safety Committee*.	*Local Area Infection Prevention and Control Committees* reports to the *Local Quality and Patient Safety Committee* for the zone, which report to the *Regional Quality Management and Patient Safety Committee.*
9. Performance indicators for the program	Currently no program performance indicator relating to surgical site infections. Surgical site infections are monitored and reported internally only.	Surgical site infections are monitored and reported as a program performance indicator.

Notes: The importance of the "**Program components**" noted above is explained here:

7. ***MRSA screening and monitoring*** are intended to reduce the spread of this infection within the hospital.
8. ***Infection prevention and control committees*** allow health professionals of various disciplines to work together to plan, monitor and troubleshoot.
9. ***Performance indicators*** are a tool that can be used to hold responsible management and staff accountable for program performance.

Source: Observations made by AGNB during our visits to hospitals and our review of documentation.

• There is limited provincial guidance.

2.142 There is limited guidance by the Department regarding infection prevention and control. There are three provincial guidelines which relate to specific nosocomial infections including CDI, MRSA bacteremia and VRE among others. They were published by the Department in 2010 and 2011 and address many topics including screening, surveillance, outbreak management, education, decolonization and disclosure of the specific infections. In addition to the guidelines, there are policies ("bulletins") regarding the reprocessing of medical devices and provincial surveillance reporting.

2.143 With the exception of the mandatory reporting of CDI and MRSA bacteremia infection rates required by the provincial guidelines and influenza incidences required by the *Office of the Chief Medical Officer of Health*, there is very little reporting of infection control issues, challenges, etc. by the zones to the Department. With the current reporting structure it is possible for the Department (the *Healthcare Consultant - Infection Prevention & Control*) to be unaware of infection prevention and control issues in the RHAs' zones.

2.144 There is no provincial strategy for infection prevention and control or for hand hygiene. Some provinces provide more direction. For example:

- Alberta has both a provincial hand hygiene policy and an infection prevention and control resource manual for acute care which "*supports healthcare workers to manage the care and placement of patients with known or suspected diseases and is applicable to acute care emergency, inpatient, and ambulatory medical surgical and outpatient settings.*"[43]

- In Prince Edward Island, the Department of Health and Wellness has developed a provincial infection prevention and control program with ICPs in all Health facilities (acute care, community hospitals, and long term care); and

[43] Website – Alberta Health Services –Infection Prevention & Control

- In the province of Newfoundland and Labrador, the Department of Health and Community Services in collaboration with the *Provincial Infection Control group (PIC-NL)* operate the infection prevention and control program. Their *Infection Control Guidelines* include one titled, *Routine Practices and Additional Precautions Across the Continuum of Care* which was published in 2009 and revised in 2014.

Conclusion

2.145 From our visits to hospitals, review of documentation and interviews with staff members, we concluded there are inconsistencies within and between the RHAs' infection prevention and control programs delivered in the hospitals. In comparison to other provinces, there is limited provincial guidance by the Department regarding infection prevention and control.

Recommendations

2.146 We recommend the Department of Health in consultation with the Horizon and Vitalité Health Networks develop a provincial infection prevention and control program and strategy for use in all New Brunswick hospitals. This should address both routine practices and additional precautions. The provincial program should include, but not be limited to, the following:

- **documented provincial infection prevention and control policies, standards and practices;**
- **a strategy for monitoring compliance with infection control standards; and**
- **a comprehensive hand hygiene strategy.**

2.147 We recommend the Horizon and Vitalité Health Networks engage sufficient resources for their programs to ensure all zones have access to Infection Prevention and Control Professionals (ICPs), experts and administrative support.

2.148 We recommend the Vitalité Health Network require their ICPs obtain specialized training in infection prevention and control.

2.149 We recommend the Horizon and Vitalité Health Networks address the inconsistencies within their respective programs, including but not limited to:

- **inconsistencies in ICPs' knowledge of appropriate practices and standards;**
- **variations in the ICPs' work in different zones; and**
- **inconsistencies with isolation gowns.**

Key Finding: ✓ There is Monitoring of some Routine Practices.

Background

2.150 Routine practices are required by everyone for every patient every day and include actions such as hand hygiene, use of gloves, gown and masks when appropriate, and proper handling of sharp instruments such as needles. **Exhibit 2.6** presented earlier, provides information on routine practices. We visited a sample of hospitals to speak with staff members and review documentation to determine if there was monitoring of routine practices in hospitals. (Hospital staff members refer to this monitoring as "auditing".)

Summary of Findings

2.151 We found the following:

- ✓ Many hospitals have been auditing hand hygiene for a number of years.
- ✓ ICPs also audit the use of personal protective equipment (PPE) and isolation rooms.
- In many zones, EVS perform audits to ensure effective cleaning of patient rooms.
- Other auditing and monitoring is performed.

✓Many hospitals have been auditing hand hygiene for a number of years.

2.152 *"Hand hygiene saves lives and reduces the economic and personal strain on our healthcare system."*[44] It is considered to be the most important routine practice because it *"is the single most effective measure to prevent the transmission of a Health Care Associated Infection"*[45].

[44] Horizon Health Network, *Policies & Procedures Manual – Hand Hygiene Policy*, Dec. 2013.
[45] Ibid.

✓ Hospitals audit for compliance with the four key moments of hand hygiene

2.153 *"The 4 Moments for Hand Hygiene in All Health Care Settings* [are]*:*

- *Before initial patient/patient environment contact.*
- *Before aseptic procedure* [such as inserting intravenous lines or urinary catheters].
- *After body fluid exposure risk.*
- *After patient/patient environment contact."*[46]

2.154 Within Horizon, the ICPs audit healthcare workers in the nursing units to determine if they are performing hand hygiene (gel or wash) at the appropriate times. A standard form is used while observing in the nursing units. Results are entered into a software application that generates standard reports. These reports are posted in staff rooms. The results are also discussed at various meetings. ICPs have been auditing hand hygiene since at least 2010. Performance reports show the results of hand hygiene audits for each of the hospitals starting in fiscal 2011/2012. Horizon's auditing results are shown as hand hygiene compliance rates in **Appendix V**.

2.155 Within Vitalité, summer students have been hired in some zones to do hand hygiene auditing for the past few years. ICPs do hand hygiene auditing in some hospitals. Since not all four zones have been able to secure a summer student each year, the number and timing of hand hygiene audits was not consistent. While Vitalité does not post hand hygiene compliance rates for staff to see, the results are provided to unit managers. Vitalité's auditing results are shown as hand hygiene compliance rates in **Appendix VI**.

✓ICPs also audit the use of personal protective equipment (PPE) and isolation rooms.

2.156 Routine practices include the proper use of gown, mask, eye protection and gloves (PPE). The ICPs in some zones have started auditing the proper use of PPE.

2.157 Routine practices also include patient

[46] Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. *Best Practices for Hand Hygiene in All Health Care Settings.* 4th ed. Toronto, ON: Queen's Printer for Ontario; April 2014.

placement/accommodation, which means putting a patient with an infection or a patient with higher risk of obtaining an infection in a single room. ICPs audit to ensure patients with an infection are put in isolation, appropriate signage is in place, a cart with PPE supplies is outside the room, and other appropriate precautions have been taken.

2.158 We observed ICPs performing isolation audits in four Horizon hospitals. When deficiencies were noted during these audits, the ICP spoke with a staff member and action was taken to correct the deficiency. We reviewed documentation indicating isolation auditing had been done in one Vitalité hospital.

• In many zones, EVS perform audits to ensure effective cleaning of patient rooms.

2.159 We met with the Environmental Services (EVS) manager in each of Horizon's and Vitalité's four zones. Our findings on EVS and the inconsistencies between the two RHAs were reported earlier in **Exhibit 2.12.**

2.160 Within Horizon, supervisors in each of the zones do audits of patient rooms after they have been cleaned. We observed supervisors doing audits in two hospitals and reviewed audit results in the other zones. Within Vitalité, supervisors in two of the zones do audits.

• Other auditing and monitoring is performed.

2.161 Our audit focused on routine practices, hence our observations primarily relate to this area. However within Horizon, we observed evidence of other audits occasionally done by the ICPs in such areas as Medical Device Reprocessing units (where medical devices are sterilized and other equipment is disinfected) and storage and transportation of clean and sterile medical devices (sterile storage).

2.162 The ICPs informed us audits are also done within other departments similar to those done by EVS. We observed several forms of monitoring during our tours of the Medical Device Reprocessing units and our tour of a *FacilicorpNB* laundry facility.

Conclusion

2.163 From our observations, we concluded there is monitoring of some routine practices in hospitals. The next section of this chapter deals with deficiencies we noted in the monitoring of routine practices.

Key Finding: ✗ Monitoring for Compliance with Routine Practices needs Improvement.

Background

2.164 Monitoring for compliance with routine practices ensures they are being regularly followed and identifies deficiencies needing corrective action. During our work at the hospitals we made observations suggesting monitoring for compliance with routine practices needs improvement.

Summary of Findings

2.165 We found the following:

- ✗ Hand hygiene auditing needs improvement to provide accurate information.
- ✗ Certain routine practices are not monitored.
- ✗ There are no policies and procedures for auditing infection prevention and control programs.
- ✗ We observed deficiencies in infection control practices during our visits to eight hospitals. (This was discussed earlier.)

✗ Hand hygiene auditing needs improvement to provide accurate information.

2.166 The hand hygiene compliance rate (%) is one of the key performance indicators for infection prevention and control in each of the RHAs. For the results to be useful, they must be accurately measured. The ICPs measure compliance by auditing "*the four key moments of hand hygiene*"[47]. We reviewed the hand hygiene audit work done in calendar 2013 and found:

- ✗ incomplete audit coverage;
- ✗ an inadequate volume of audits; and
- ✗ bias towards recording positive results and other inconsistencies;

We briefly describe each of these.

2.167 ✗ ***Incomplete audit coverage*** – Hand hygiene audits are not completed in all units of the hospitals. Some nursing units, such as psychiatry, were not audited in some hospitals. Some ambulatory units,

[47] Horizon Health Network, *Policies & Procedures Manual – Hand Hygiene Policy*, Dec. 2013

such as “out patient clinics” and “specimen collection” (where one goes for blood tests) were not audited. In early 2014, Horizon informed us they were expanding their hand hygiene auditing coverage to include all hospital units.

2.168 Further, hand hygiene audits are not completed each month in every hospital. Six of Horizon’s eleven acute care hospitals had at least one month in 2013 without hand hygiene audits being performed. Three of Vitalité’s nine acute care hospitals had no hand hygiene audits performed in 2013. Eight of the nine hospitals had at least three months in 2013 without hand hygiene audits being performed.

2.169 × ***An inadequate volume of audits***- There is not enough auditing done in some hospitals. A small number of audit observations may not be representative and therefore may not accurately support the hand hygiene compliance percentage reported. Within Horizon, one hospital having less than 30 beds had only 74 hand hygiene audit observations during 2013. Another hospital of similar size had 339 hand hygiene audit observations during the same time period. Within Vitalité, one hospital having more than 150 beds had only 44 hand hygiene audit observations during 2013. Another hospital of similar size had 1,254 hand hygiene audit observations during the same time period.

2.170 × ***Bias towards recording positive results and other inconsistencies*** – We observed ICPs doing hand hygiene auditing in the hospitals we visited. We found there was a bias towards recording positive results. When appropriate hand hygiene practices were observed, it was always recorded as compliance. However, when the ICPs were not certain the healthcare worker did not clean their hands, they did not record it as non-compliance.

2.171 One ICP recorded a positive result each time she observed a healthcare worker do hand hygiene as we walked around a unit. Auditing in this manner would rarely result in recording a miss, and is not an acceptable method to audit.

2.172 While most ICPs audit for the presence or absence of performing hand hygiene, one ICP audited for “proper” hand hygiene and recorded a “non-compliance” if the healthcare worker did not use soap while washing, did not use paper towel when turning

off the taps, touched the sink with clean hands, etc. We believe this is a better form of auditing; however, given that most are not auditing in this manner, a comparison of audit results would not be valid.

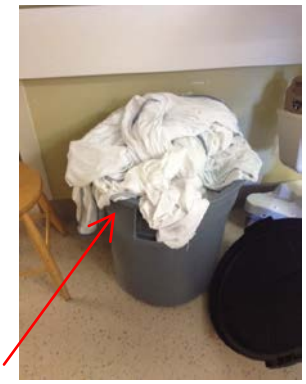
2.173 Within Horizon, "champions" (i.e. a healthcare worker from within the unit) have recently started to do hand hygiene auditing. Within Vitalité, summer students are often hired to do hand hygiene auditing. It is our understanding that both "champions" and summer students are trained to do hand hygiene audits by ICPs in the respective zones. Therefore, the inconsistencies in the manner in which the ICPs are auditing would be passed on to others performing audits.

2.174 Hand hygiene auditing needs improvement to provide accurate information. A standard practice with documented procedures and training of new auditors is needed.

× Certain routine practices are not monitored.

2.175 While we commented earlier the ICPs did audit some routine practices (hand hygiene, PPE, patient placement), there are other routine practices they do not monitor. It may not be appropriate for the ICP to audit each department involved in routine practices (linen, EVS, etc.), however, the ICPs should monitor audit results from other departments, such as:

- linen management (We observed deficiencies with clean linen in the hospitals, which was discussed earlier in **Exhibit 2.9**.);
- waste management (We observed deficiencies in the storage of biomedical wastes in the hospitals, which was discussed earlier in **Exhibit 2.9**.);
- shared equipment (We observed deficiencies in the cleaning between patients, proper labelling of clean and dirty storage areas, and we observed clean items being kept in close proximity to dirty items, which was reported earlier in **Exhibit 2.9**.); and
- nails and jewelry - We observed nurses in an intensive care unit wearing rings and bracelets. Horizon's hand hygiene policy states the following regarding jewelry, "*HCWs* [health care workers], *who are involved in direct patient care, are not to wear jewelry, with the exception of a smooth band without projections or mounted stones as rings can*



× Deficiency in linen management – improper storage of clean sheets in nursing unit

Proper labelling of shared equipment is very limited

become contaminated and/or puncture gloves." The policy also states artificial nails and nail enhancements are prohibited. The hand hygiene audit tool used by the ICPs has boxes to verify compliance for rings, bracelets and nails. However, the ICPs are not auditing these. Vitalité's policy prohibits rings, wedding bands and arm jewelry, yet we observed several healthcare workers (including nurses, doctors and surgeons) in most units, in all hospitals visited, wearing rings.

2.176 Providing education on infection prevention and control is also a routine practice. There is mandatory refresher training of all healthcare workers which includes courses on hand hygiene and routine practices. However, Horizon was unable to provide data on the percentage of employees who had completed the mandatory annual infection prevention and control training. We were told the existing information systems made it difficult to generate organization-wide information and that education was monitored by managers in the hospitals as part of each employee's annual performance review. Similarly, Vitalité was unable to provide the percentage of employees who had completed the mandatory infection prevention and control training. We were told the zones had only a listing of the names of their employees who had received the training.

✗ There are no policies and procedures for auditing infection prevention and control programs.

2.177 With the exception of hand hygiene, there are no auditing requirements to guide the ICPs. While all zones audit hand hygiene using virtually the same form, this is not the case for other types of audits done. Some zones do more auditing than others. In general, Horizon does more auditing of infection prevention and control practices than Vitalité.

2.178 Policies and procedures provide direction and describe an expected level of performance. They help staff know which tasks need to be performed and how to complete them properly. Consistent application of sound policies and procedures should result in the delivery of quality services. At present though, there are no policies and procedures regarding the auditing of infection prevention and control practices, nor have frequencies of required audits been established.

Conclusion

2.179 We concluded monitoring for compliance with routine practices needs improvement in order to ensure minimum standards of infection control are being met

in all hospitals.

Recommendation

2.180 We recommend the Horizon and Vitalité Health Networks improve monitoring for compliance with infection prevention and control standards, including the monitoring of routine practices. This should include, but not be limited to, establishing policies and procedures for:

- **consistent unbiased hand hygiene auditing of appropriate quantity and including coverage of all areas in the hospitals;**
- **auditing jewelry and nails of healthcare workers to ensure compliance with the hand hygiene policy;**
- **auditing of linen management, including delivery trucks;**
- **auditing of waste management, including all types of waste; and**
- **auditing of shared equipment (proper cleaning, storage, etc.).**

Key Finding: ✓ The Regional Health Authorities Measure the Effectiveness of their Infection Prevention and Control Programs.

Background

2.181 Reporting on the effectiveness of a program is an important component of accountability.

Summary of Findings

2.182 We found the following:

- ✓ Measuring effectiveness is a priority to the Department.
- ✓ The RHAs' infection prevention and control programs have key performance indicators (KPIs) with targets.
- ✓ The infection prevention and control programs' KPIs are measured, reported and monitored.
- ✓ Performance results are shared with staff members.

✓Measuring effectiveness is a priority to the Department.

2.183 The Department's strategic plan had three areas of priority, one of which was, *"developing our capacity to plan, fund, monitor and deliver strategic services."*[48] Monitoring was further explained as monitoring program compliance with legislation and regulation and, *"It also includes evaluating the degree health system programs produce the outcomes identified in their planning stages and identifying areas of potential improvement. It ensures the development of measurement and evaluation processes to support an Accountability Framework for our major health system partners."*

✓The RHAs' infection prevention and control programs have key performance indicators (KPIs) with targets.

2.184 The Horizon program has six performance indicators. The ICP managers from all four zones were involved in selecting the common KPIs for the program. The KPIs involve hand hygiene compliance and infection rates for specific diseases: methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile* (CDI), and Vancomycin-resistant *enterococcus* (VRE). The program has set a target for each indicator.

[48] Department of Health Province of New Brunswick, *Our Way Forward 2009-2014 – A Strategic Plan for Department of Health Employees*, Sept 2009.

2.185 Similarly, the Vitalité program has five performance indicators that were selected by ICPs from each zone. The KPIs involve hand hygiene compliance, infection rates for MRSA, CDI and VRE, as well as surgical site infection rates for class 1 surgeries (clean wounds). The program has set a target for each indicator. Hand hygiene compliance rates have not been compiled and reported in a consistent manner in recent years (see **Appendix VI**). Vitalité has begun improving their hand hygiene compliance reporting for the fiscal year 2014/2015.

2.186 Each KPI has a source validating it as a measure. *"Health care associated C. difficile and MRSA infections represent a significant risk to the individuals receiving care and are a substantial resource burden to organizations and the health care system. Measuring infection control performance measures has the additional benefit of informing and shaping the staff's view of safety. Evidence suggests that as staff become more aware of infection control rates and the evidence related to infection control there is a change in behaviour to reduce the perceived risk."*[49]

2.187 Other programs within Horizon have KPIs relating to infection prevention and control. For example, the surgical program measures surgical site infections. Another example is environmental services which measures:

- the percentage of patients who scored cleanliness as excellent or satisfactory on a patient survey;
- the average cleaning audit score (results of inspections done by supervisors after a patient's room was cleaned); and
- the percentage of staff who have completed each required annual education module (hand hygiene and routine practices).

[49] Accreditation Canada, *Accreditation Report - Horizon Health Network*, May 2011.

✓The infection prevention and control programs' KPIs are measured, reported and monitored.

2.188 Each of the two RHA programs has common methods for measuring and reporting on their KPIs. All four zones within the RHA use the same "dashboard" for reporting their results. The dashboard records each zone's performance for each quarter and reports performance not only for each zone, but for the RHA in total. This allows each zone to see their own performance and also compare it to that of other zones in their RHA. Dashboards show cumulative results over time for comparative purposes. This allows a zone to see their performance progress overtime.

2.189 Dashboards are reviewed and monitored by the *Local Area Infection Prevention and Control Committee*, as well as the *Regional Infection Prevention and Control Committee* (Horizon) or *Regional Quality Management and Patient Safety Committee* (Vitalité) as a standing item on each committee's agenda. Several committee members reported the dashboards as a useful tool for monitoring performance. They indicated they believe the KPIs to be relevant in measuring the performance of the program. They also indicated the committee may offer suggestions to improve performance.

✓Performance results are shared with staff members.

✓ Hand hygiene results posted on staff bulletin boards

2.190 One of the activities[50] of effective infection prevention and control programs is, *"Health care organizations should ensure that surveillance of both infection prevention and control processes and outcomes related to health care associated infections is performed; and that the data are analyzed appropriately, provided to front line staff, clinical leadership and administrators, and used to monitor and improve related patient outcomes."*[51]

2.191 Performance results are shared with front-line staff members via staff bulletin boards in Horizon. Vitalité shares results with some hospital employees but not in a consistent manner. Results are also reported and discussed at meetings.

[50] Nosocomial and Occupational Infections Section - Division of Blood Safety Surveillance and Health Care Acquired Infections - Centre for Communicable Diseases and Infection Control - Public Health Agency of Canada, excerpts from *Essential Resources for Effective Infection Prevention and Control Programs: A Matter of Patient Safety: A Discussion Paper*.
[51] Ibid.

Conclusion

2.192 From our observations, we concluded the Regional Health Authorities adequately measure the effectiveness of its infection prevention and control programs.

Key Finding: ✗ The Regional Health Authorities need to enhance their Public Reporting on the Effectiveness of their Infection Prevention and Control Programs.

Background

2.193 Publicly reporting on the effectiveness of a program is a key component of accountability.

Summary of Findings

2.194 We found the following:

- ✓ The Department publicly reports on CDI and MRSA bacteremia.
- ✓ One hospital is involved in national reporting.
- ✓ The New Brunswick Health Council publicly reports on safety in hospitals.
- ✗ The RHAs do limited public reporting on the effectiveness of their infection prevention and control programs.

✓ The Department publicly reports on CDI and MRSA bacteremia.

2.195 The Department (through the *Office of the Chief Medical Officer of Health*) implemented a *"Provincial Surveillance System"*. Mandatory reporting by the hospitals for specific infections began in fiscal 2010/2011. The hospital-based surveillance program began public reporting on the Department's website commencing in May 2013. Two hospital-associated infections are currently being reported: CDI and MRSA bacteremia. The website presents information on the program and infection rates for each hospital in the Province, similar to **Exhibit 2.4**.

✓One hospital is involved in national reporting.

2.196 New Brunswick participates in Public Health Agency of Canada's (PHAC's) *Canadian Nosocomial Infection Surveillance Program* (CNISP). The national program includes the ten provinces with 54 hospitals participating. The Moncton Hospital represents New Brunswick for this program.

✓The New Brunswick Health Council publicly reports on safety in hospitals.

2.197 The *New Brunswick Health Council* (Council) fosters *"transparency, engagement, and accountability by: Engaging citizens in a meaningful dialogue; Measuring, monitoring, and evaluating population health and health service quality; Informing citizens on health system's performance; and Recommending*

improvements to the Minister of Health." [52] The Council conducts surveys "*that captures care experiences from patients who have used hospital acute care services in New Brunswick,*" [53]and provides a "Health System Report Card" on their website. The purpose of the report "*is to provide survey results for each hospital in order to measure, monitor and evaluate improvements over time*."[54]

2.198 We reviewed the Council's website and some of their reports. We found the Council reports on a few indicators relating to infection prevention and control including:

- hand hygiene;
- CDI, MRSA and VRE rates; and
- cleanliness of the hospital room and bathroom.

✗ The RHAs do limited public reporting on the effectiveness of their infection prevention and control programs.

2.199 During our fieldwork, we reviewed the RHA's websites and various reports. Neither RHA clearly reported on the effectiveness of its infection prevention and control program. (While Horizon's website had a link to the Department's public reports on CDI and MRSA bacteremia, the link was not easily identified. Vitalité's website had no performance reporting on the program.) Without publicly reporting on performance, the RHAs cannot be adequately held to account for the performance of the program.

2.200 We also observed that while the Department is publicly reporting on rates for two infections, neither the Department or the RHAs are reporting on hand hygiene. (Only the Council has reported on hand hygiene, which was based on a patient survey.) The ICPs have been monitoring hand hygiene in the hospitals for several years and report results internally. We believe their results should be publicly reported. In addition to providing accountability, this would have the added benefit of increasing public awareness of the importance of proper hand hygiene in hospitals.

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[52] Website – New Brunswick Health Council – What We Do – Mandate.
[53] New Brunswick Health Council, *Hospital Patient Care Experience in New Brunswick, 2013 Acute Care Survey Results*
[54] Ibid.

Conclusion

2.201 From our observations, we concluded the Regional Health Authorities should enhance their public reporting on the effectiveness of their infection prevention and control programs.

Recommendation

2.202 We recommend the Department of Health and/or the Regional Health Authorities enhance its public reporting on the effectiveness of its infection prevention and control program(s) by reporting on hand hygiene and other infection prevention and control program performance indicators.

Appendix I – General Information on Infection Prevention & Control

General Information on Infection Prevention and Control

The mandate of an Infection Prevention and Control Program *is to prevent and control health care associated infections.* ***Examples of health care associated infections include*** *bloodstream, surgical site, urinary tract, pulmonary, and skin and soft tissue infections. Other infectious diseases, including respiratory (e.g., severe acute respiratory syndrome or SARS, influenza, tuberculosis) and gastrointestinal (e.g., Clostridium difficile colitis, Norovirus) infections, and infections with antibiotic-resistant organisms (e.g., MRSAs, VRE) transmitted in health care settings are also considered health care associated infections.*

Many patient factors increase a patient's risk of developing health care associated infections including *advanced age, prematurity, and increasingly complex treatment modalities in both hospital and out-of-hospital settings.*

Restructuring has occurred within the Canadian health care system, as it has in both the United States and Europe. Changes in nurse staffing numbers and staff mix related to restructuring have been ***associated with an increased risk for health care associated infections*** *and have contributed to the deterioration in both quality and outcome of patient care throughout North America and Europe.*

The emergence of new infectious agents *such as the severe acute respiratory syndrome coronavirus (SARS-CoV) and the re-emergence of community-acquired communicable diseases such as group A streptococcal disease, community-acquired methicillin-resistant Staphylococcus aureus , and multi-drug resistant tuberculosis are also causes of concern for Infection Prevention and Control Programs. Other concerns include infections due to contaminated drinking water (e.g., E. coli O157:H7), food borne infections (e.g., Salmonella), zoonoses (e.g., plague), and the potential for bioterrorism events.*

Evidence has been published in support of having an effective Infection Prevention and Control Program*. The landmark Study on the Efficacy of Nosocomial Infection Control (SENIC) project estimated that one-third of health care associated infections in the hospital setting could be prevented if hospitals instituted the essential components required for Infection Prevention and Control Programs. Recent data regarding Infection Prevention and Control Programs in Canada (Quebec and Ontario specifically), the United Kingdom, Italy, Belgium, Australia, and the United States have reported deficits in the essential resources and components of current Infection Prevention and Control Programs.*

To meet its infection prevention and control mandate, staffing, training, and infrastructure requirements are needed. However, administrators may be tempted to reduce the infection prevention and control budget as it consumes resources and does not generate revenue.

Infection prevention and control is a critical component of patient safety, as health care associated infections are by far the most common complication affecting hospitalized patients. *The human and economic burdens that health care associated infections place on Canadians and their health care system speak to the importance of an effective Infection Prevention and Control Program.*

Source: Nosocomial and Occupational Infections Section - Division of Blood Safety Surveillance and Health Care Acquired Infections - Centre for Communicable Diseases and Infection Control - Public Health Agency of Canada, excerpts from *Essential Resources for Effective Infection Prevention and Control Programs: A Matter of Patient Safety: A Discussion Paper*.

Appendix II – Glossary of Terms, Abbreviations and Acronyms

Glossary of Terms, Abbreviations and Acronyms	
AGNB	The office of the Auditor General of New Brunswick.
Environmental Services (EVS)	Unit within the hospital responsible for housekeeping services and waste management.
Hand Hygiene	*A comprehensive term that refers to hand washing, hand antisepsis and actions taken to maintain healthy hands and fingernails*. (1)
Hand Hygiene Gel or Alcohol-Based Hand Rub (ABHR)	*A liquid, gel or foam formulation of alcohol (e.g. ethanol, isopropanol) which is used to reduce the number of microorganisms on hands in clinical situations when the hands are not visibly soiled. ABHRs contain emollients to reduce skin irritation and are less time-consuming to use than washing with soap and water*. (2)
Healthcare associated infections (HAI)	*Infections acquired while receiving health care irrespective of site: hospital; long-term care facility; ambulatory care; or home. This term reflects the shift away from hospitals as the predominant provider of health care services and has largely replaced the term nosocomial.* (3)
Infection Control	*The original term used to describe the hospital program responsible for monitoring and preventing nosocomial infections.* (3)
Infection Control Professional (ICP)	*A health care professional (e.g., nurse, medical laboratory technologist) with responsibility for functions of the Infection Prevention and Control Program. This individual, who must have specific Infection Prevention and Control training, is referred to as an infection control practitioner/professional or ICP*. (3)
Infection Prevention and Control Program	*The program consisting of the hospital epidemiologist, practitioners, and support staff charged with the responsibility to minimize the occurrence of infections in patients, health care workers, and visitors.* (3)
Nosocomial Infection	*The term used for an infection acquired while receiving health care. Since this is a term historically associated with infections acquired while in hospital, there has been a move to the term HAI (defined above) to more clearly reflect the continuum of care.* (3)
Personal Protective Equipment (PPE)	Items worn by a healthcare worker, visitor, volunteer, etc. to protect oneself from getting infected. Personal protective equipment includes; gloves, gowns, masks, goggles and face shields.
RHAs	Regional Health Authorities: Horizon Health Network and Vitalité Health Network.
Zone	A geographical area. Both Horizon and Vitalité contain four zones.

Source:

1. Horizon Health Network, *Policies & Procedures Manual – Hand Hygiene Policy*, Dec. 2013.
2. Ontario Agency for Health Protection and Promotion (Public Health Ontario), Provincial Infectious Diseases Advisory Committee. *Best Practices for Hand Hygiene in All Health Care Settings.* 4th ed. Toronto, ON: Queen's Printer for Ontario; April 2014.
3. Nosocomial and Occupational Infections Section - Division of Blood Safety Surveillance and Health Care Acquired Infections - Centre for Communicable Diseases and Infection Control - Public Health Agency of Canada, excerpts from *Essential Resources for Effective Infection Prevention and Control Programs: A Matter of Patient Safety: A Discussion Paper*.

Appendix III – Criteria Used in Our Audit

Criteria Used in Our Audit

Criteria serve as the basis for our audits. They are benchmark statements we use to assess the programs. Criteria provide the framework for collecting audit evidence. Our criteria for this audit on infection prevention and control in hospitals were:

- *The Department's and the Regional Health Authorities' responsibilities for infection prevention and control in hospitals should be clear.*
- *There should be infection prevention and control practices in hospitals.*
- *Hospitals should be monitored to ensure compliance with routine practices.*
- *The Department &/or the Regional Health Authorities should publicly report on the effectiveness of its infection prevention and control program(s).*

Source: Criteria developed by AGNB using information from: other Offices of the Auditor General (Saskatchewan, Manitoba, Nova Scotia, Newfoundland and Labrador), PHAC (Public Health Agency of Canada), IPAC Canada - formerly CHICA (Community & Hospital Infection Control Association of Canada), *Best Practices for Infection Prevention and Control Programs in Ontario In All Health Care Settings*- 3rd edition, and Accreditation Canada- *Standards - Infection Prevention and Control* - April 2012.

Appendix IV – Work Performed by AGNB for this Audit

Work Performed by AGNB for this Audit

Our work for this audit included the following:

- reviewing legislation and policies for the programs;
- holding discussions with staff from various divisions at the Department of Health, including the *Office of the Chief Medical Officer of Health*;
- corresponding with staff from each of the two RHAs. This included speaking with representatives from eight *Local Area Infection Prevention and Control Committees*, two representatives from Horizon's *Regional Infection Prevention and Control Committee*, and two representatives from Vitalité's *Quality Management and Patient Safety Committee*. Committee representatives were from different healthcare disciplines including: infectious disease, patient safety and quality services, public health, microbiology, and risk management;
- visiting eight hospitals. In Horizon, we visited five hospitals representing 68% of their acute-care beds (Upper River Valley Hospital, Miramichi Regional Hospital, Dr. Everett Chalmers Regional Hospital, Saint John Regional Hospital, and Sackville Memorial Hospital). In Vitalité, we visited three hospitals representing 55% of their acute-care beds (Chaleur Regional Hospital, Dr. Georges-L.-Dumont University Hospital Centre, and Grand Falls General Hospital). We visited hospitals of various sizes and from different zones in the Province.
- interviewing people from each of the eight zones;
- touring four laundry facilities and meeting with representatives of *FacilicorpNB* regarding laundry services provided to the hospitals (*FacilicorpNB* is a public sector agency managing shared services for the health-care system. Its mandate is to provide safe, cost-effective and innovative support services to RHAs, nursing homes, and the Department.);
- examining program standards and best practices from PHAC (Public Health Agency of Canada), IPAC Canada - formerly CHICA (Community and Hospital Infection Control Association of Canada), Accreditation Canada, and PIDAC (The Provincial Infectious Diseases Advisory Committee in Ontario);
- analyzing information provided by the Department and the two RHAs; and
- performing other procedures as determined necessary.

Our work at the hospitals included the following:

- touring the facility with the ICP manager and/or facility manager, and making observations;
- meeting with the manager of environmental services, reviewing policies and procedures relating to cleaning patient rooms and equipment, touring and observing linen and waste management practices, and observing a supervisor performing a room inspection for cleanliness and compliance with procedures;
- accompanying the ICPs while doing their routine work in the units of the selected hospitals. Their work included discussing infection prevention and control practices with healthcare workers, as well as auditing hand hygiene practices, the use of personal protective equipment (PPE) and patient isolation practices; and
- meeting with other staff members including the administration support for the program, the executive director of the hospital, etc.

Appendix V – Horizon's Hand Hygiene Compliance

Horizon's Hand Hygiene Compliance

RÉSEAU DE SANTÉ Horizon HEALTH NETWORK

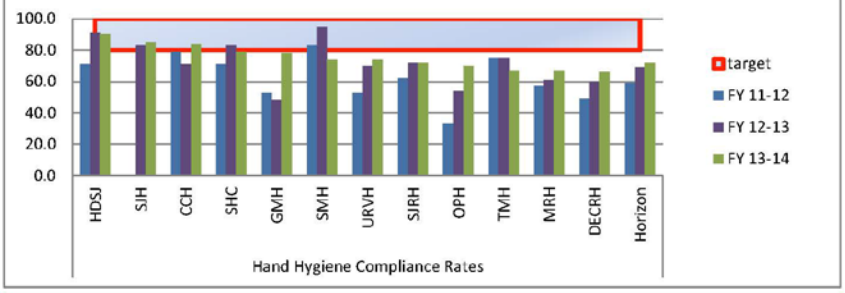
Performance Indicators Factsheet FY 13-14

Hand Hygiene Compliance

Definition: The percentage of staff observed to follow the hand hygiene protocol established by the organization as part of safe practices for patients. Effective hand hygiene practices play a key role in improving patient and provider safety, and in preventing the spread of health care- acquired infections.
# of staff that followed hand washing protocol / Total staff observed
Target/benchmark source: CPSI received February 6, 2012 and PIDAC received July 2012

Figure 3a: Horizon Quarterly % Hand Hygiene

Figure 3b: Facility Hand Hygiene Compliance Rate (last 3 years)



Analysis Summary: The hand hygiene compliance has been trending up with a slight decrease in Q3 2012-13 and back up within the following quarters (Figure 3a). Overall, Horizon has been showing an increase over the last 3 years, with three facilities (HDSJ, SJH and CCH) achieving target in FY 13-14 (Figure 3b). This indicator is based on audits, therefore represents a sample. If this trend continues, achieving the target of 80% should be achievable by each facility within 1-3 years.

Action Summary: 143 Hand Hygiene Champions have been trained across Horizon to provide daily reinforcement on the 4 moments of hand hygiene and complete audits at the unit level. Work is underway to enable all Areas to submit hand hygiene data to the National Hand Hygiene Metrics, a reporting system sponsored by the Canadian Patient Safety Institute.

Legend:

HDSJ: Hotel-Dieu of St. Joseph
SJH: St. Joseph's Hospital
CCH: Charlotte County Hospital
SHC: Sussex Health Centre
GMH: Grand Manan Hospital
SMH: Sackville Memorial Hospital
URVH: Upper River Valley Hospital
SJRH: Saint John Regional Hospital
OPH: Oromocto Public Hospital
TMH: The Moncton Hospital
MRH: Miramichi Regional Hospital
DECRH: Dr. Everett Chalmers Regional Hospital

Source: Horizon Health Network, *Performance Indicators Factsheet*.

Appendix VI – Vitalité's Hand Hygiene Compliance

Vitalité's Hand Hygiene Compliance

Our findings and observations

- Hand hygiene data provided to us included the following. This data is not comparable with that shown in **Appendix V** for Horizon, as the methodology used to generate the two sets of data were different. Hand hygiene auditing was not done at all Vitalité hospitals prior to the summer of 2014.

	Zone 1B ***Beauséjour (Moncton)***	**Zone 4** ***Nord-Ouest (Edmundston)***	**Zone 5** ***Restigouche (Campbellton)***	**Zone 6** ***Acadie-Bathurst***
		Nov 2010 – Dec 2011		
Compliance rate	51%	74%	42%	60%
Number of observations	1,874	54	211	2,249
		May 2012 – March 2013		
Compliance rate	44%	23%	67%	40%
Number of observations	2,425	373	1,867	3,089
		April 2013 – March 2014		
Compliance rate	57%	42%	36%	59%
Number of observations	269	1,535	330	1,016

Source: Compiled by AGNB from unaudited information provided by the Vitalité Health Network