
4 Health and Wellness: Infection Prevention and Control at Cape Breton District Health Authority and Capital Health

Summary

Cape Breton District Health Authority has a poor culture of infection prevention and control; the District lacks appropriate infection prevention and control practices. Management need to raise awareness of the importance of best practices and take steps to ensure staff follow these practices. Our work at Capital Health showed a good understanding of infection prevention and control practices; although we did identify problems and make recommendations for improvement.

Poor infection prevention and control practices may have contributed to a significant *C. difficile* outbreak in Cape Breton hospitals in 2011. We found Cape Breton's response to the outbreak was ineffective and was hampered by poor infection prevention and control practices. Infection Prevention and Control Nova Scotia (IPCNS) at the Department of Health and Wellness was not notified until the District-wide outbreak was declared, almost a month after the initial unit outbreak was identified. While districts are not required to inform IPCNS of outbreaks, we have recommended changes to ensure the Department's experts are aware when outbreaks occur. Once IPCNS staff arrived in the District to assist with managing the outbreak, they identified many basic infection prevention and control practices which were not being followed. IPCNS found the failure to follow appropriate practices contributed to the first outbreak. IPCNS also told us that Cape Breton returned to some of its old practices and IPCNS noted these may have contributed to the second outbreak in late 2011.

Reports on Cape Breton's first *C. difficile* outbreak found that hand hygiene practices needed improvement. During our work at the District, we found that hand hygiene audits were infrequent and based on small samples. We also found that infection control practitioners at Cape Breton spend little time visiting patient areas in the hospital or monitoring infection control practices in the District. The manager of infection prevention and control had additional job responsibilities and was not dedicated to this function.

Management at Cape Breton failed to ensure adequate infection prevention and control practices were followed. Cape Breton District Health Authority's leaders must demonstrate the importance of infection prevention and control by ensuring the District takes immediate steps to address the issues identified by our audit and by the IPCNS outbreak report.

Our testing of cleaning and disinfecting practices for gastro, broncho, and colon scopes identified significant problems with both District's practices. Capital had significant gaps in its process to track and record disinfecting procedures; staff were not verifying that the



disinfecting machines completed their cycles. This could result in equipment which is not adequately disinfected between patients. We identified one scope for which there was no evidence of appropriate disinfecting before use on the next patient. At Cape Breton, there was no evidence that two scopes we tested were properly cleaned and disinfected before being used on the next patient.

Additionally, we identified serious problems with the use of flash sterilization (quick sterilization at or near the point of use) at both Districts. This form of sterilizing surgical instruments should only be used in emergency situations. Capital Health regularly uses flash sterilization to compensate for either a lack of surgical instruments or over-scheduling of surgeries. Prior to our audit, Cape Breton did not maintain any records of flash sterilization; these are required under Canadian standards. The District began keeping records when we started audit fieldwork. We tested the records which were available and found Cape Breton was also using flash sterilization in nonemergency situations.

Three years after establishing Infection Prevention and Control Nova Scotia, the Department of Health and Wellness is not adequately monitoring infection prevention and control practices in Nova Scotia hospitals. IPCNS is not sufficiently staffed to allow implementation of its objectives for infection prevention and control in the province. There is no provincial surveillance system for hospital acquired infections. Without monitoring it is impossible to hold the districts accountable and to ensure consistent infection prevention and control practices across the province.

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Background

- 4.1 Infection prevention and control in hospitals is an important component to ensuring safe and appropriate health care for all Nova Scotians. Hospital or health care acquired infections are infections that a patient acquires while in a health care facility being treated for some other condition. Some of these infections are easily spread through a hospital. Examples of common hospital acquired infections include *C. difficile*, MRSA, VRE and SRI (influenza, colds, pneumonia, and others). These can all be spread through contact with someone who carries the disease, an infected person, or with a contaminated surface.
- 4.2 Data reports by the Canadian Nosocomial Infection Surveillance Program show the incidence of MRSA in Canada has doubled from 1999 to 2006; VRE tripled in the same timeframe. Hospital acquired infections can extend a patient's hospital stay, lead to increased costs for treatment or complications, and in the most serious cases, can cause or contribute to the death of a patient.
- 4.3 Good hand hygiene, or hand cleaning, is the most effective way to help prevent or reduce the spread of hospital acquired infections. Hand cleaning is important before and after any contact with a patient, or any procedure involving contact with a patient. Other basic infection prevention and control practices include the use of appropriate protective equipment, proper cleaning and disinfecting of hospital rooms and equipment, screening new patients for risk categories, using isolation rooms when necessary, and maintaining adequate surveillance within hospitals to identify infected patients before a major outbreak can occur.
- 4.4 An outbreak is typically defined as having more instances of a disease than would normally occur. Most infectious diseases can lead to an outbreak. The degree of severity depends on the number of people impacted and the level of impact. Smaller or less significant hospital acquired infection outbreaks may be confined to one or two patient units in a hospital or may only cause minor issues for patients. More significant outbreaks affect more units, may involve multiple hospital sites, or can lead to serious consequences for patients, regardless of the number of people affected.
- 4.5 In April 2009, Nova Scotia created a new provincial organization – Infection Prevention and Control Nova Scotia (IPCNS). IPCNS is intended to provide support to district health authorities while also developing best practices to help infection control practitioners and health care workers across the province.

Audit Objectives and Scope

- 4.6 In 2011, our Office conducted a performance audit of the infection prevention and control practices at Cape Breton District Health Authority (Cape Breton) and Capital Health. We also audited the Department of Health and Wellness' oversight of infection prevention and control in districts. We wanted to determine whether Cape Breton District Health Authority and Capital Health had adequate policies and procedures for the prevention and control of hospital acquired infections, and whether those policies and procedures were applied. We also wanted to assess the Department's monitoring and evaluation of the impact of hospital acquired infections in Nova Scotia hospitals.
- 4.7 The audit was conducted in accordance with Sections 18 and 21 of the Auditor General Act and auditing standards established by the Canadian Institute of Chartered Accountants.
- 4.8 The audit objectives were to assess whether:
- the Department of Health and Wellness' oversight of infection prevention and control in Nova Scotia hospitals is adequate;
 - Cape Breton and Capital Health are adequately monitoring hospital acquired infections and their impact on patients and the health system;
 - Cape Breton and Capital Health are assessing and managing the risk of hospital acquired infections in their districts;
 - Cape Breton and Capital Health have adequate infection prevention and control policies and processes;
 - equipment cleaning policies and procedures are adequate and are followed;
 - hand hygiene policies and processes are adequate and complied with;
 - Cape Breton and Capital Health have adequate policies and processes in place to identify and respond to a hospital acquired infection outbreak; and
 - Cape Breton and Capital Health complied with their respective outbreak management policies in responding to any recent outbreaks.
- 4.9 Certain of the audit criteria for this audit were derived from Accreditation Canada's Qmentum standards, while others were developed by our Office for this audit. The objectives and criteria were discussed with, and accepted as appropriate by, senior management at Cape Breton District Health Authority, Capital Health and the Department of Health and Wellness.
- 4.10 Our audit approach included examination of policies, documents and reports, interviews with various staff and management, and testing of compliance with policies and processes. Our audit period covered April 2009 to June 2011, although



some additional testing was completed following that period in certain areas. This is identified in the Chapter where applicable.

- 4.11 Our audit did not include the second *C. difficile* outbreak in Cape Breton in late 2011. We discussed this outbreak with IPCNS and have included some of their comments in our report. These are identified as IPCNS findings where applicable.
- 4.12 For our audit testing we focused on three specific hospital acquired infections: MRSA, *C. difficile*, and ventilator associated pneumonia. MRSA and *C. difficile* are both bacteria found in hospitals which can be spread and cause significant challenges for patients and the health care system. Ventilator associated pneumonia is a risk for patients who are on ventilators.

Significant Audit Observations

Department Oversight

Conclusions and summary of observations

Three years after establishing Infection Prevention and Control Nova Scotia, the Department of Health and Wellness is not adequately monitoring infection prevention and control practices in Nova Scotia hospitals. IPCNS is not sufficiently staffed to allow implementation of its objectives for infection prevention and control in the province. IPCNS has produced two guidelines but there is no requirement for district health authorities to follow these. Additionally, IPCNS does not know whether district infection prevention and control policies and processes are in accordance with best practices. There is no provincial surveillance system for hospital acquired infections. IPCNS does not collect any data from the district health authorities on the number of hospital acquired infections; as a result, the Department does not know which areas of Nova Scotia have higher rates of infection. Without monitoring it is impossible to hold the districts accountable and to ensure consistent infection prevention and control practices across the province. This can lead to districts or hospitals in which practices are inadequate resulting in a higher risk to patients of acquiring an infection in a health care facility.

- 4.13 Infection Prevention and Control Nova Scotia was created in 2009 and was intended to provide expertise for infection control practitioners in Nova Scotia. IPCNS' objectives include the following.
- *“Providing support for the infection prevention and control needs of the other sectors of the system that provide health related services to help facilitate a more integrated system;*
 - *Developing best practice documents to help health care workers and practitioners in any setting to manage infection prevention and control issues;*



- *Providing infection prevention and control educational resources to health care facilities, community services, allied health care professionals, etc., and integrating core infection prevention and control competencies in the basic education and training programs for all health care disciplines; and*
 - *Developing a provincial surveillance system with common data sets and collection methods necessary to help build capacity for comparison and monitoring of the system.”*
- 4.14 Three years after its inception, IPCNS is failing to meet many aspects of these objectives. The Department of Health and Wellness’ oversight of infection prevention and control programs in district health authorities across Nova Scotia is inadequate.
- 4.15 IPCNS management have developed two best practice guidelines for the districts but they do not know whether the districts use these guidelines. They told us they believe they cannot require the districts to follow IPCNS guidelines, or any other best practices; they also told us they do not know which policies the districts use. Failure to ensure consistent practices across the province means some hospitals may expose patients to a significantly higher risk of infection than others.
- 4.16 Section 60 of the Health Authorities Act states that the Minister shall: “(b) develop or ensure the development of standards for the delivery of health services; (c) monitor, measure and evaluate the quality, accessibility and comprehensiveness of health services.” It is clear that ensuring province-wide infection prevention and control standards are established and implemented is well within the Department’s powers.
- 4.17 When IPCNS was created in 2009, one of its objectives was to develop a provincial surveillance system but there has been no progress to date. Districts are not required to submit their infection rates to IPCNS and the Department does not know the level of hospital acquired infections in Nova Scotia. The lack of provincial monitoring of infection rates means each district is left largely unaware of what may be happening elsewhere in the province. This makes it more difficult to identify an outbreak in its early stages; an outbreak could spread across multiple districts before it is identified.
- 4.18 The lack of provincial monitoring also prevents IPCNS from examining district infection rates to help identify problems with infection prevention and control practices.

Recommendation 4.1

The Department of Health and Wellness should initiate a province-wide surveillance system operated through Infection Prevention and Control Nova Scotia to track key infection rates in all health care facilities in Nova Scotia.

Department of Health and Wellness Response:

DHW agrees with this recommendation and the need for a provincial surveillance system. IPCNS will continue to advocate and explore options for implementing a provincial



surveillance system and real-time reporting of outbreaks to IPCNS by December 2012. This will ensure provincial oversight and support to the DHAs and the fulfillment of the Department's responsibilities under the Health Authorities Act.

- 4.19 Management at IPCNS told us they do not have the resources to effectively audit infection prevention and control practices across the province. At the time of our audit, there were two infection control practitioners at IPCNS. While they work collaboratively with infection control practitioners across the province, IPCNS staff told us they do not have any ability to monitor, measure or evaluate hospital acquired infections or compliance measures related to infection prevention and control practices. Considering the broad range of objectives assigned to this group, two staff is not sufficient to fulfill these objectives.

Recommendation 4.2

The Department of Health and Wellness should review the staffing level at Infection Prevention and Control Nova Scotia and provide adequate staff for this division to fulfill its objectives.

Department of Health and Wellness Response:

DHW agrees with this recommendation. Initial discussions have occurred related to staffing and IPCNS is currently defining resource needs to be complete by July 2012.

Recommendation 4.3

The Department of Health and Wellness should give Infection Prevention and Control Nova Scotia the authority and responsibility to implement monitoring and oversight processes on behalf of the Department to ensure district health authorities across the province have adequate infection prevention and control practices. These practices should be consistent with any best practice guidelines identified or prepared by Infection Prevention and Control Nova Scotia.

Department of Health and Wellness Response:

DHW agrees with this recommendation of having the authority and responsibility to implement monitoring and oversight measures. DHW is currently developing an indicator framework to monitor key performance indicators, including infection prevention and control performance measures. This will ensure provincial oversight and support to the DHAs and fulfilment of the Department's requirements under the Health Authorities Act. Its expected completion is December 2012.

IPCNS will continue to develop best practice guidelines and where appropriate, take a policy-based approach, particularly for high risk issues, ensuring a higher level of accountability and adherence to evidence-based practice. In developing an indicator framework, indicator reporting to the Department will assist in ensuring DHAs are consistently adhering to accepted best practice guidelines.



To accompany recently disseminated guidelines for antibiotic resistant organisms and occupational health management of communicable diseases in healthcare workers, two additional guidelines, namely infection prevention and control in long term care and management of Clostridium difficile, are in the final stages of development and will be released September 2012. In instances where suitable guidelines have been developed by other leading authorities or expert bodies, IPCNS may opt to adopt, support and reference these evidence-based documents. Adherence to guidelines, standards, and policies will be clearly outlined to the DHAs by September 2012.

Systemic Infection Prevention and Control Problems at Cape Breton District Health Authority

Conclusions and summary of observations

We found Cape Breton District Health Authority has a poor culture of infection prevention and control. In addition, external reports from those who reviewed the District's response to a recent 2011 *C. difficile* outbreak identified failures to adopt appropriate infection prevention and control practices throughout the district. Many of the concerns we found were identified by IPCNS as contributing to the two *C. difficile* outbreaks the District experienced in the last 15 months. IPCNS found poor practices which were corrected during the original outbreak and then relapsed may have contributed to the second outbreak. IPCNS also noted poor hand hygiene as a contributing factor during the outbreaks. Our audit found that the District's hand hygiene audits were too small and not enough audits were completed.

- 4.20 *Systemic issues* – During our audit we identified many concerns with infection prevention and control practices at Cape Breton District Health Authority which are indicative of the systemic problems in the District. We also discussed the 2011 *C. difficile* outbreaks with IPCNS and reviewed that entity's report on the first outbreak. In some instances, this Chapter includes IPCNS findings; these are identified separately from our findings.
- 4.21 *Disposal of patient waste* – IPCNS identified inappropriate disposal of patient waste as a factor in the recent *C. difficile* outbreaks. Staff emptied and cleaned patient bedpans in the patient washrooms instead of in a separate dirty utility room. Cleaning in a separate location from patient rooms is a basic infection prevention and control practice which helps to limit the spread of disease by ensuring bacteria do not get recirculated in the patient's environment. Additionally, IPCNS found that spray wands were being used to clean bedpans; these can cause splashing during the cleaning process and further contaminate the environment with bacteria. Cape Breton discontinued spray wands based on recommendations from IPCNS.
- 4.22 IPCNS told us that following the first *C. difficile* outbreak, Cape Breton staff returned to cleaning bedpans in patient washrooms. IPCNS found this was one of the causes of a second *C. difficile* outbreak at that District in late 2011.



- 4.23 *Sterile processing department education* – We found Cape Breton has no requirement for ongoing education or competency checks for staff in its sterile processing department. These individuals are responsible for ensuring equipment such as surgical instruments is appropriately sterilized between patients.
- 4.24 We also found that infection control practitioners are not required to obtain certification related to infection prevention and control. Conversely, at Capital Health, infection control practitioners must obtain certification within five years. Both Districts told us they require infection control practitioners to complete a basic infection prevention and control program upon hiring. This requirement is not included in job descriptions at Cape Breton, although management informed us it is a standard requirement in ads for new hires.
- 4.25 *Lack of full-time manager* – The manager responsible for infection control in Cape Breton at the time of our audit told us this responsibility was only part of her job. She was also responsible for ambulatory care, a large department. Infection prevention and control is an important function in any hospital. Failure to commit a full-time staff member to manage this key function shows a lack of focus on this area by District management.
- 4.26 *Audit observations* – During fieldwork, staff from our Office observed a patient with *C. difficile* leave her room in a wheelchair and go to a common area of the hospital. We were concerned that a person who was supposed to be in an isolation room was allowed to travel around the hospital unaccompanied. Additionally, items from an infected person's room, such as a wheelchair, could carry bacteria to other areas of the hospital, potentially infecting more patients. We informed hospital staff immediately. Rather than returning the patient to her room, staff made sure she was wearing a gown and gloves and allowed her to continue unaccompanied in the wheelchair from her room. At the time, Cape Breton infection control management told us this was an acceptable practice. Subsequent to our fieldwork, Cape Breton senior management informed us this was not acceptable and that District infection control staff are drafting a new policy to address the issue. This also illustrates the lack of a strong and well-developed infection prevention and control culture at Cape Breton District Health Authority.
- 4.27 We found evidence that clean equipment was sometimes stored in a dirty utility room, a space used for cleaning dirty equipment. This could contaminate clean equipment. Additionally, clean items were not always tagged or otherwise identified; staff may not know which items are clean and which are not. This could pose an increased risk to the patient of equipment being used which was not cleaned and disinfected. We also noted dirty items were sometimes stored in open containers which increases the possibility of contamination.
- 4.28 We identified additional indicators of a pervasive lack of attention to infection prevention and control at Cape Breton.



- There are no infection control practitioners on the Quality/Patient Safety Committee. Typically this type of committee would include practitioners to help ensure adequate infection prevention and control.
- The infectious disease doctors at Cape Breton told us they believe senior management at the organization did not fully appreciate the importance of infection prevention and control prior to the recent *C. difficile* outbreaks. They felt the situation improved more recently.
- At the end of our audit, infection control management continued to claim bleach is an effective cleaner. Bleach is a disinfectant and infection prevention and control best practice clearly states that disinfectants should be used after a surface has been cleaned with a general or hospital-grade cleaning agent.

4.29 Infection control practitioners told us they do not visit patient floors regularly, even when a new case of a hospital acquired infection is identified. They told us they phone the unit to ensure proper precautions are in place but do not visit to ensure staff understand the precautions and are applying them appropriately. Additionally, infection control practitioners rarely visit some of the small rural hospitals in the District from November to April each year due to the possibility of poor weather. Infection control practitioners need to be visible on units in hospital facilities year round. This reinforces the need for good infection prevention and control practices with staff and helps illustrate an organization’s commitment to a strong infection prevention and control culture. Staff may also feel more comfortable discussing potential problems with someone they see regularly on the unit. It should be possible for infection control practitioners to plan visits to rural facilities and cancel if the weather forecast shows reason for concern.

Recommendation 4.4

Cape Breton District Health Authority should implement a process to address infection prevention and control in all hospitals throughout its District year round, including regular visits by infection prevention and control practitioners.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation. The District has increased ICP (Infection Control Practitioner) staffing by 3.0 FTE and has assigned ICPs to all facilities. One ICP will be located in Inverness part time and will also visit Cheticamp and Neil’s Harbour routinely. One ICP located in North Sydney will make regular visits to Baddeck. ICPs are also assigned to all industrial Cape Breton facilities and make regular visits.

4.30 Each of the individual issues noted throughout this section is concerning; when considered together, these issues provide a clear picture of the lack of focus on infection prevention and control at Cape Breton. This failure to take infection prevention and control seriously may have contributed to the recent *C. difficile* outbreaks in Cape Breton and may have hampered efforts to limit the impact of those outbreaks.



Outbreak Management

Conclusions and summary of observations

We found significant issues with Cape Breton's response to the *C. difficile* outbreak in early 2011. Infection Prevention and Control Nova Scotia issued a report on this outbreak which identified a number of failed infection prevention and control practices. Although Cape Breton has outbreak management policies, we found these were not implemented well in practice. District management also told us their outbreak policies are not adequate and informed us the policies are being updated. Cape Breton's response to the outbreak was not timely. It took almost a week to inform the public and implement visitor restrictions in the District-wide outbreak. IPCNS was not informed of the unit outbreaks, and were called only when the District-wide outbreak was declared. We noted delays in implementing changes once problems were identified during the initial outbreak. We found that Capital Health has appropriate outbreak management policies. There were no significant outbreaks during our audit period so we did not assess the application of these policies.

- 4.31 *Policies* – Outbreak policies are typically somewhat generic so that they can be applied to various types of outbreaks. The policies usually provide for staff and volunteers to fulfill their normal duties. Members of the outbreak team may have more authority than usual.
- 4.32 We found both Districts had outbreak policies. Cape Breton management told us they believed their policy was not adequate. We noted that Cape Breton was in the process of updating its policies to reflect lessons learned from the recent *C. difficile* outbreak.
- 4.33 *Outbreaks* – We asked both Districts to identify any outbreaks they experienced during our audit period (April 2009 to June 2011). An outbreak can range from something minor in which a few patients become ill, to a more serious situation with severely ill patients, or many patients becoming sick. Where applicable, we reviewed the reports prepared following any hospital acquired infection outbreaks.
- 4.34 *Capital Health* – During our audit period, Capital Health had 10 small outbreaks. Due to the limited nature of most of the outbreaks, reports were only prepared for four of these. We reviewed these reports and determined that none of the outbreaks were significant and all related to either influenza-like illnesses or noroviruses, neither of which were the focus of our audit.
- 4.35 *Cape Breton* – We focused our examination of Cape Breton's outbreak response on the first multi-site *C. difficile* outbreak that occurred in early 2011. Subsequent to our audit period, Cape Breton suffered another outbreak of *C. difficile* at the Cape Breton Regional Hospital. We did not audit the response to this outbreak because it occurred after we had completed our fieldwork. However, we did discuss it with Infection Prevention and Control Nova Scotia and include their comments in this Chapter where applicable.



- 4.36 *Outbreak response* – Cape Breton infection control management told us there were 11 hospital acquired infection outbreaks in their District during our audit period. However, despite a District policy requirement, Cape Breton management told us they do not prepare after-outbreak reports. They told us they believe outbreak issues are covered in the minutes of their outbreak meetings.
- 4.37 Best practices in infection prevention and control include internal reviews of outbreak responses to identify what worked well versus what did not. While regular meetings during an outbreak are important, these do not replace the need for a thorough review of the response after the outbreak is over. A review provides an opportunity to examine the entire outbreak response from beginning to end and takes place immediately after the outbreak is finished. Failure to complete a review after an outbreak can result in the same problems occurring in the future.
- 4.38 IPCNS and the Public Health Agency of Canada examined Cape Breton’s response to the initial *C. difficile* outbreak. We reviewed comments from both agencies during our audit work. Although these agencies examined Cape Breton’s response to the outbreak, we believe it would also be beneficial for Cape Breton to prepare its own report focusing on the response to the outbreak and what could be done differently to avoid future outbreaks or to deal better with them. Such a detailed review of the outbreak could also help staff to better understand their role in infection prevention and control.
- 4.39 As discussed, Cape Breton did not review its response to the initial *C. difficile* outbreak. IPCNS told us that Cape Breton staff later resumed many of the problematic routines which may have contributed to this outbreak and in late 2011, the District experienced another *C. difficile* outbreak. District management told us they believe staff returned to their former approach because they do not accept their own responsibility for infection prevention and control. Further, management told us they do not believe outbreak reporting will impact the lack of understanding of infection prevention and control in the District. Cape Breton did prepare an after-outbreak report for the second outbreak. This was released while we were writing this Chapter. We have not included this report in our audit.

Recommendation 4.5

Cape Breton District Health Authority should prepare a formal report for both *C. difficile* outbreaks in the District in 2011. The report should consider the problems which contributed to the outbreak and challenges experienced during the response.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation. A formal outbreak report was issued on March 14, 2012 for the second outbreak. An outbreak report will be prepared for the first outbreak before May 30, 2012 with the benefit of references to the Public Health Agency of Canada Report, the IPCNS Lessons Learned report and the CEO report to the Community pertaining to this outbreak.



Recommendation 4.6

Cape Breton District Health Authority should prepare after-outbreak reports for any significant outbreaks in the District. The reports should address the cause of the outbreak, any issues or concerns with the response and provide recommendations for improvement where applicable.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation. Outbreak reports are now prepared that address the probable cause of any outbreak, discuss issues and concerns with response and identify opportunities for improvement.

4.40 We found there is no requirement for district health authorities to report hospital acquired infection outbreaks to IPCNS. In this instance, Cape Breton management did not inform IPCNS that they were experiencing unit outbreaks in their hospitals. These outbreaks ultimately led to the District-wide outbreak. Cape Breton management did contact IPCNS when they determined the outbreak was District-wide. This was almost a month after the first unit outbreak. IPCNS staff have expertise in infection prevention and control; they should be involved in responding to any significant outbreaks in the province. As well, IPCNS should be informed of all outbreaks so the Department of Health and Wellness can monitor the situation.

Recommendation 4.7

The Department of Health and Wellness should require district health authorities and other health care organizations to report all outbreaks and health care or hospital acquired infections to Infection Prevention and Control Nova Scotia immediately.

Department of Health and Wellness Response:

DHW agrees with this recommendation. IPCNS will determine the most appropriate methods for reporting by the district health authorities and other healthcare organizations, parameters and criteria for what and when to report, and how IPCNS will utilize and respond to the information. The expected timeline is September 2012.

4.41 *Second outbreak*—In late 2011, Cape Breton experienced a second *C. difficile* outbreak. We did not audit this outbreak because it took place after we completed our fieldwork. However, we did discuss it with IPCNS at the conclusion of our audit. They told us that Cape Breton hospital staff returned to some of the routines which IPCNS had identified as problems in the first outbreak. IPCNS noted these issues were at least partially responsible for the second *C. difficile* outbreak in Cape Breton.

4.42 For example, IPCNS told us that Cape Breton staff returned to handling patient waste inappropriately by cleaning bedpans in patient washrooms. This was identified as a problem in the first outbreak. If appropriate infection prevention and control practices are followed, patient waste and bedpans should be moved to a dirty utility room for cleaning.



- 4.43 Returning to old practices which may have contributed to the initial outbreak demonstrates the lack of infection prevention and control culture at Cape Breton District Health Authority. This is not acceptable in a health care organization and is particularly concerning following a significant outbreak.
- 4.44 Failure of District staff to maintain updated practices also magnifies the need for a report to examine the issues around each significant outbreak. This would provide an opportunity for management and staff to assess any issues which may have contributed to the outbreak, as well as look at what could have been done differently during the response. A written report documenting the issues and identifying changes needed may help staff to understand the importance of appropriate infection prevention and control and staff's role in ensuring good practices.
- 4.45 *IPCNS reporting* – We reviewed two after-outbreak reports, one prepared by IPCNS, the other by the Public Health Agency of Canada. These reports identified many areas in which Cape Breton's infection prevention and control practices were not appropriate. IPCNS also provided verbal comments and draft reports to Cape Breton prior to finalizing their outbreak report.
- 4.46 The IPCNS report demonstrates the systemic failure to put in place appropriate infection prevention and control practices in Cape Breton. This report identified 37 recommendations for improvement; these are detailed in Appendix 1 at the end of this Chapter. The following are some examples of the improvements IPCNS recommended.
- Require infection control staff to obtain certification within two to five years of hiring.
 - Require continuing education and recertification for infection control practitioners.
 - Increase the presence of infection control practitioners in hospital units by completing daily rounds.
 - Increase and improve surveillance practices.
 - Infection control practitioners should perform ongoing audits of various aspects of infection control.
 - Ensure infection control practitioners are involved in product procurement and evaluation.
 - Repair or replace non-intact furnishings and surfaces.
 - Adopt best practices for proper cleaning of commodes and bedpans.
 - Ensure removal of all spray wands in patient bathrooms and dirty utility rooms.
 - Increase the number of hand washing units.



- Increase the number of audits and observation of compliance with hand hygiene policies.
- Engage infection control practitioners in selection and purchase of cleaning and disinfectant products.
- Ensure proper cleaning of patient rooms, including preparation of detailed checklists for environmental services and regular audits by infection control practitioners.
- Implement immediate contact precautions for unexplained diarrhea; minimize the number of transfers of symptomatic patients.

Recommendation 4.8

Cape Breton District Health Authority should implement all recommendations identified by Infection Prevention and Control Nova Scotia in its report on the C. difficile outbreak.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and plans to have fully implemented all 37 recommendations by September 2012. Monthly progress reports are currently prepared and submitted to document progress. These reports will be posted on the CBDHA web site.

4.47 *Poor practices* – IPCNS also identified a number of areas in which appropriate infection prevention and control practices were not followed. During our audit, we discussed these issues which IPCNS had identified with Cape Breton management.

- Improper waste management.
- Bedpans and commodes were cleaned in patient rooms.
- Spray wands were used to clean bedpans and commodes in both patient rooms and dirty utility rooms (a space for cleaning dirty equipment).
- Inappropriate cleaning products were used to clean patient rooms. Cape Breton was using bleach alone to clean rooms but bleach is a disinfectant, not a cleaning product. Surfaces need to be cleaned with an appropriate product before applying disinfectant. In addition, staff did not ensure surfaces remained wet for the minimum contact time with bleach to ensure proper disinfection. As a result, the surfaces were neither properly cleaned nor properly disinfected.

4.48 These are basic infection prevention and control practices that should be properly addressed under any circumstance in a hospital setting. Failure to properly monitor, or to understand the importance of these practices, is indicative of the systemic infection prevention and control issues in Cape Breton.



- 4.49 *Furnishings and equipment* – IPCNS outbreak report noted areas in which furniture and equipment in Cape Breton was deemed unacceptable, usually because it was not possible to fully clean. We also identified some of these same issues during our audit. Examples of unacceptable furniture and equipment include:
- commodes with uneven surfaces;
 - backsplash or facing materials in washrooms;
 - bedside tables with chips in the finish exposing rough wood surfaces; and
 - furniture with rough or porous surfaces.
- 4.50 *Timing of Cape Breton's outbreak response* – We identified a number of situations in which Cape Breton was slow to respond or to seek assistance in the early stages of the outbreak.
- Service providers were not notified until four days after the district outbreak was declared.
 - The public was notified and visitor restrictions put in place five days after the outbreak began.
 - After IPCNS told Cape Breton that using spray wands to clean was inappropriate, it took five days for all spray wands to be removed from all patient bathrooms.
 - It took 12 days to replace inappropriate cleaning products identified by IPCNS. While cleaning staff were told to change existing practices in late March, this directive came from materials management rather than someone involved with infection prevention and control. Additionally, no information was provided to cleaning staff to explain that existing practices did not kill *C. difficile*.
 - Emergency call cords in patient bathrooms were identified as not able to be cleaned, but it took Cape Breton 25 days to replace them. Cape Breton ordered the replacement products 12 days after they were identified as a problem but experienced delays in receiving replacements.
- 4.51 *Infection control compliance audits* – In its report on Cape Breton's outbreak response, IPCNS identified the need for more compliance auditing and the general lack of visibility of infection prevention and control staff throughout hospitals in Cape Breton. We identified similar issues during our audit. Audits of hand hygiene, equipment reprocessing or other areas, help to address both of these issues. Without assessing compliance, infection control practitioners have no way to know whether staff are following policies. Completing audits also requires infection control practitioners to visit hospital units and interact with staff, service providers and volunteers. This provides opportunities for education and can help improve the understanding of infection prevention and control in the District.



4.52 *Capital Health* – During the course of our audit, infection prevention and control management at Capital Health told us that they also had spray wands in many of their facilities. In light of the findings from Cape Breton, Capital Health management told us they decommissioned spray wands to ensure they were no longer used, with the exception of the Dartmouth General. This hospital has no rooms on each unit in which dirty equipment can be cleaned so there is no alternative but to continue to use the spray wands. Management told us that building renovations would be required to remedy this situation.

Recommendation 4.9

Capital Health should approve and implement necessary changes to discontinue the use of spray wands in all its facilities.

Capital Health Response:

Capital Health accepts this recommendation. Where possible, all spray wands have already been decommissioned in the District. Renovations to Dartmouth General are required to ensure compliance with a human waste disposal program and were requested through a submission to the Department of Health and Wellness for funding as a repair/renewal project. Renovations to construct dirty utility rooms with an automated system for disposing human waste and cleaning bedpans would result in a decrease in the number of patient care beds, with a resulting negative impact on patient flow. Proposed construction of the 5th floor of the Dartmouth General presents an opportunity to relocate patient care rooms and provide space to incorporate the required human waste disposal systems

Policies and Practices

Conclusions and summary of observations

We found that both Capital Health and Cape Breton have infection prevention and control policies, although in both Districts, many policies were outdated. Both Districts told us their infection prevention and control policies are developed from evidence-based best practices, but neither district consistently references the source of their policies. We found Capital Health includes its infection control practitioners in key areas across District operations. In contrast, Cape Breton does not include its infection control practitioners in many important decisions, including equipment and furniture purchases and new construction planning.

4.53 *Policies* – Both Capital Health and Cape Breton have extensive infection prevention and control policies and both Districts told us that they use evidence-based or best practice policies where possible. However, we found neither District consistently notes the source of its policies making it difficult to assess whether policies are in fact evidence-based. We found eight policies at Capital Health and five policies at Cape Breton with no sources identified.

Recommendation 4.10

Capital Health and Cape Breton District Health Authority should reference all infection prevention and control policies to the evidence-based best practices on which they were developed.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has commenced immediate referencing to evidence based practice for all new policies and procedures and will revise all existing policies and procedures to include reference to evidence based best practices.

Capital Health Response:

Capital Health agrees with this recommendation. Capital Health considers information from all recognized sources of (e.g. Public Health Agency of Canada, Centers for Disease Control and Prevention, Canadian Standards Association, Legislation, Accreditation Standards, the Ontario Provincial Infectious Disease Advisory Committee (PIDAC)), and expert opinion (particularly if no authoritative sources are identifiable) when developing policies. The available literature is reviewed and interpreted and the policy developed. Capital Health will ensure that these references are cited on all future policies.

- 4.54 Both Districts require policies be reviewed every three years to determine if updates are required. Despite this, we identified eight policies in Capital Health and 14 in Cape Breton which had not been reviewed in more than three years.

Recommendation 4.11

Capital Health and Cape Breton District Health Authority should implement a process to review all infection prevention and control policies on a regular basis. Policies should be updated based on any changes identified from these reviews.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has developed a schedule for routine review and revision of all IPAC policies and procedures and has assigned responsibility to ensure that this activity occurs regularly. 17 of 18 policies over 3 years old have been updated as of April 25, 2012.

Capital Health Response:

Capital District agrees with this recommendation. Capital Health uses a broad stakeholder engagement process to develop and review policies. Capital Health's new document management system (Medworxx Policy Document Management System) provides automatic notification to the responsible departmental contact on a regular basis until the new/updated policy is submitted to the Policy Office. As well, an audit process, with feedback to leadership on all outdated policies, is being implemented.

- 4.55 *District-wide involvement* – Infection control practitioners should be involved in a wide variety of decisions in a hospital setting. Everything from the cleaning



solutions used to the type of furniture purchased for patient rooms or lounges can have a significant impact on the ability to prevent or control the spread of hospital acquired infections.

- 4.56 We found that Capital Health's infection control practitioners were involved in all the areas we expected including product evaluation for equipment and furniture purchases, policy development for food delivery and housekeeping, and construction project planning.
- 4.57 We found infection control practitioners in Cape Breton were not adequately involved in decision making throughout the District. Although infection control practitioners are supposed to be involved in the product evaluation committee, this group did not meet between April 2009 and August 2011. Practitioners were involved in policy development around food delivery and housekeeping but were not active participants in construction planning.
- 4.58 Failure to involve infection prevention and control expertise can lead to many issues including furniture and equipment which is difficult or impossible to properly clean, inappropriate construction materials used in washrooms and other areas, and inappropriate equipment from an infection prevention and control standpoint.

Recommendation 4.12

Cape Breton District Health Authority should implement processes to ensure that infection prevention and control staff are involved in all decisions with the potential to impact infection prevention and control in the District. Among other areas, this would include construction projects and all equipment and furniture purchases.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has established process to ensure that IPAC staff participates in Materiel Management, Engineering Services, Environmental Services and Quality and Patient Safety decisions to ensure that infection prevention and control implications are recognized and addressed.

- 4.59 We noted both Districts have fairly extensive education programs and literature available to help staff, service providers, volunteers, patients, and patients' families understand their respective roles in infection prevention and control.

Medical Equipment Cleaning and Disinfecting

Conclusions and summary of observations

We found significant problems in Capital Health's processes to ensure internal scopes are appropriately disinfected. We identified one scope for which there was no evidence that the scope was disinfected before being used on another patient. We also identified issues with Cape Breton's processes to ensure these scopes are properly cleaned and disinfected.



We found two scopes for which there was no evidence the scopes were cleaned and disinfected prior to being used again. Overall, sterile processing in both Districts was adequate, although we identified a few situations in which the process was not consistent with the manufacturer's requirements. We found many instances at both Districts in which flash sterilization was used to sterilize equipment in nonemergency situations. This is considered inappropriate based on Canadian guidelines; this form of quick sterilization is only to be used in emergencies.

- 4.60 *Internal scope cleaning and disinfecting* – Internal scopes are used for a variety of procedures at both Districts. We examined the processes for cleaning and disinfecting gastrointestinal scopes, bronchoscopes and colonoscopes. We wanted to assess whether each District had an adequate process to ensure scopes are cleaned and disinfected before being used again; we also wanted to verify there was adequate evidence of this.
- 4.61 Generally both Districts use a similar process to clean and disinfect scopes. This starts with a pre-cleaning immediately after use, followed by a more thorough manual cleaning, and finally a cycle in a high-level disinfectant machine prior to being returned for use on another patient.
- 4.62 *Sterile processing* – Hospitals clean equipment for surgeries and other procedures in sterile processing departments. These departments have procedures, including manual cleaning, washing/disinfecting machines, and sterilization machines, to ensure items are properly sterilized before being returned for use. While facilities may have different machines, these are all designed to sterilize equipment before use.
- 4.63 *Sample selection* – We selected a sample of 20 days at each hospital we visited and tested scope cleaning and disinfecting records and sterile processing records. The number of scopes versus sterile processing items included in our sample depended on the volume of scope procedures at each facility.
- 4.64 *Capital Health scope testing* – We tested scope cleaning and disinfecting practices at the Victoria General, Halifax Infirmary, Dartmouth General and Hants Community Hospital. We found Capital Health did not have adequate processes to ensure its scopes were adequately disinfected before being returned to use. Capital Health's logs showed manual cleaning was completed for all the scopes we tested. However, we found staff were not reviewing printed tapes from the disinfectant machines to ensure high-level disinfecting cycles were completed. For many of the scopes we tested, the printed tapes showed cycles were aborted or the tape stopped mid-cycle. When we discussed this issue with Capital Health staff, they were able to download detailed data from these machines and were eventually able to demonstrate that most scopes in our sample were properly disinfected. However, there was one scope for which there was no evidence it was properly disinfected before being returned for use on the next patient. Following our testing, Capital Health staff told us that they contacted this patient to inform them of what happened.



- 4.65 The process we followed to get this evidence was extremely time consuming and tedious. Although we were able to verify that all scopes tested except for one were properly disinfected, we are concerned that the printed tapes had no evidence to prove this. Staff could not have been certain scopes were properly disinfected before being returned to use. If Capital Health had to trace the history of a scope in an emergency situation, they might be delayed by the lack of evidence. If staff were required to verify each completed disinfecting cycle, this would reduce the risk an aborted or incomplete cycle could go undetected.
- 4.66 *Cape Breton scope testing* – We tested scope cleaning and disinfecting practices at Cape Breton Regional Hospital and Glace Bay Hospital. While the process staff at Cape Breton Regional Hospital described to document scope cleaning and disinfecting was appropriate, we found it was not applied consistently.
- 4.67 At Glace Bay Hospital, staff used a variety of processes to document scope cleaning and disinfecting during our audit period. Sometimes patient logs were maintained and at other times, logs were not kept. Much of the documentation supporting cleaning and disinfecting cycles was not stored by date and it was difficult to locate records. Again, this could be an issue if a scope had to be traced to patients or cleaning and disinfecting cycles in an urgent situation.
- 4.68 Our testing identified two scopes at Cape Breton District Health Authority for which there was no evidence the scopes were properly cleaned and disinfected before being returned to use. We downloaded data from the disinfectant machines where possible but there was nothing to indicate these two scopes were appropriately cleaned and disinfected.

Recommendation 4.13

Capital Health and Cape Breton District Health Authority should implement a consistent process for all hospitals in the District that ensures:

- ***all scopes are properly cleaned and disinfected;***
- ***staff verify the cleaning processes were completed; and***
- ***clear and well-documented evidence of the cleaning process.***

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has developed and implemented new policies and procedures that will consistently ensure that there is evidence that all scopes have been properly cleaned.

Capital Health Response:

Capital Health accepts this recommendation, most specifically the recommendation which identifies the need to implement a process for documenting subsequent reprocessing steps (see further detail below). Capital Health has a written process for endoscope and bronchoscope reprocessing. The process follows the Public Health Agency of

Canada's guidance document "Infection Prevention and Control Guideline for Flexible Gastrointestinal Endoscopy and Flexible Bronchoscopy". We have had, for a number of years, 1) written policies and procedures and written protocols for cleaning and reprocessing each type of endoscope that are based on current recognized standards and recommendations as well as manufacturer recommended protocols and 2) formal, documented endoscope reprocessing staff training and annual recertification.

As the Auditor General's Report indicates, we have good documentation of our cleaning process. We agree that we need to implement a process for documenting subsequent reprocessing steps. An Endoscopy Reprocessing Quality Improvement group was established in November 2011. A formal audit process for evaluating endoscope reprocessing was implemented in January 2012. This includes self-audit of documentation practices by the unit's leadership and reconciliation of the reprocessing documentation practices on a daily basis. In March 2012, Infection Control commenced monthly audits of the reprocessing processes, with direct observation of the reprocessing procedure from cleaning to storage.

- 4.69 *Sterile processing department* – All the hospitals we visited had dedicated sterile processing departments for cleaning and sterilizing most medical equipment used in the facility other than scopes. This includes surgical equipment, such as scissors, clamps and drills, as well as any other equipment requiring sterilization.
- 4.70 *Records and testing* – We found all the facilities we audited maintained appropriate records of equipment sterilization. We selected a sample of equipment and verified that the cleaning process matched the manufacturer's requirements. Our overall equipment cleaning testing was divided between scopes and sterile processing; accordingly the sample sizes of sterile processing testing vary between facilities depending on the volume of scopes used at a facility.
- 4.71 *Capital Health sterile processing testing* – We tested 50 items to ensure they were appropriately sterilized. We found no issues in the length of sterilization, the temperature ranges achieved or the daily monitoring of the sterilization equipment. We identified two items for which the drying time in the sterilization cycle did not meet the manufacturer's requirements.
- 4.72 *Cape Breton sterile processing testing* – We tested 20 items at Cape Breton; we had no concerns with the length of sterilization, temperatures, or daily monitoring of sterilization equipment. We did identify two items for which the drying cycle was not consistent with the manufacturer's requirements.

Recommendation 4.14

Capital Health and Cape Breton District Health Authority should implement processes to ensure that all aspects of sterilization are consistent with manufacturer's requirements.



Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has established processes that ensure that all existing and new equipment requiring sterilization has both policy and standard operating procedure developed to ensure that all aspects of sterilization are consistent with the manufacturer's requirements.

Capital Health Response:

Capital Health agrees with this recommendation. The drying time in the sterilization cycles for the two identified items was changed, in accordance with the manufacturer's recommendation. Capital Health follows the Canadian Standards Association's Recommended Standards of Practices for Sterilization. This includes a process for obtaining validated manufacturer's reprocessing instructions for all new medical devices.

A multi-disciplinary Reprocessing Committee is in the process of being formed to standardize processes to ensure equipment is reprocessed using CSA Standards and best practice guidelines. Prior to purchase of the equipment/device, all parties involved must be in agreement that the procedure for reprocessing the equipment/device satisfies the required reprocessing criteria and is achievable in the health care setting.

- 4.73 *Flash sterilization* – Flash sterilization is a means of sterilizing a piece of equipment at or near the point of use (such as an operating room), rather than returning the equipment to the sterile processing department. Canadian Standards Association (CSA) guidelines and Health Canada guidelines both indicate flash sterilization should only be used in emergency situations in which an instrument has fallen on the floor, or otherwise become unsterile, and is needed immediately for a surgery. These guidelines also require that hospitals keep records of flash sterilization. Scheduling too many surgeries for the equipment available or the lack of necessary instruments should never be used as a reason to flash sterilize an instrument or set of instruments.
- 4.74 Both Districts have policies governing the use of flash sterilization which are consistent with Health Canada and CSA guidelines. However, neither District is in compliance with its policies. Additionally, Capital Health's policy is still draft, and Cape Breton's policy was approved during our audit.
- 4.75 Capital Health had records of items sterilized using flash technology. Cape Breton only started maintaining these records at the start of our audit. Cape Breton staff informed us that the flash log was started in response to our audit.
- 4.76 *Capital Health testing* – We reviewed Capital Health's flash sterilization records and identified 20 types of equipment which were most often flashed at the Capital facilities we visited. We asked management why these items were flashed. For 18 of the 20 equipment types, we determined the hospitals used flash sterilization either because too many surgeries were scheduled or the hospital did not have a sufficient inventory of that equipment. Neither of these reasons is considered acceptable under Canadian guidelines.



4.77 Since flash sterilization is only to be used in emergencies, we asked District management what they were doing to address this situation.

- In 11 instances, Capital Health had already acquired additional inventory of instruments. Management told us this should be sufficient so that flash sterilization will not be required due to lack of equipment.
- One item is still pending approval for additional inventory purchase.
- In one situation, management told us they are monitoring surgery scheduling to ensure flash sterilization is no longer needed.
- The remaining five equipment types have not been flash sterilized in over a year and management told us they believe no further action is needed.

4.78 *Cape Breton testing* – Since Cape Breton only began maintaining records of its flash sterilization at the start of our audit, we extended our audit period to early February 2012 in this area. We found that Cape Breton was using flash sterilization in nonemergency situations. We tested 10 items logged as flash sterilized since Cape Breton began keeping records and found six were flashed for inappropriate reasons. In all six cases, management told us they are working to acquire or have already acquired additional pieces of equipment to ensure flash sterilization is not required in the future.

Recommendation 4.15

Capital Health should finalize its flash sterilization policy.

Capital Health Response:

Capital Health agrees with this recommendation.

Recommendation 4.16

Capital Health and Cape Breton District Health Authority should implement processes to ensure flash sterilization is only used in situations which are acceptable based on national best practices.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation. Policy and procedure for flash sterilization that references best practices was developed and implemented in November 2011. Routine audits of flash sterilization records are conducted to evaluate compliance and detect opportunities for improvement.

Capital Health Response:

Capital Health accepts this recommendation. Capital Health uses the Canadian Standards Association's Recommended Standards of Practices for Emergency (Flash) Sterilization. Capital Health has taken actions to decrease the use of flash sterilization: purchasing more equipment, transferring equipment among hospitals, increasing availability of



single wrapped equipment. Peri-operative portfolio leadership reviews flash records for equipment purchase recommendations and adjusts OR booking to prevent overbooking of instrumentation.

- 4.79 *Sterile processing department audits* – Capital Health infection control staff conduct regular audits of the sterile processing department to ensure workflow and processes are compliant with policy. Cape Breton has not completed any audits of sterile processing, instead relying on staff to conduct self-audits and identify issues. As discussed earlier, audits by infection control practitioners are an important mechanism to ensure infection prevention and control policies are followed.
- 4.80 The lack of regular sterile processing audits by Cape Breton infection control practitioners is another indicator of that District’s poor infection control culture.

Recommendation 4.17

Cape Breton District Health Authority should immediately implement a process to ensure that infection control staff conduct regular audits of all sterile processing units in the District.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has assigned a dedicated Infection Prevention and Control Nurse to complete regular audits for all sterile processing units in the District. Auditing by an ICP commenced in January 2012.

- 4.81 *Sterile processing staff qualifications* – Both Districts have specific qualifications which staff working in the sterile processing departments must meet. We tested staff qualifications at Capital Health and Cape Breton and found the following.
- All 31 staff reviewed at Capital Health met the District’s requirements to work in sterile processing.
 - Nine of the 11 staff reviewed at Cape Breton met that District’s requirements. The remaining two staff members obtained the necessary qualifications two and six months later than required.
- 4.82 We noted that Capital Health’s job description for sterile processing staff included an education requirement which District staff told us is not necessary.

Recommendation 4.18

Capital Health should review sterile processing position descriptions to verify education requirements are accurate.

Capital Health Response:

Capital Health agrees with this recommendation. Steps are already under way to ensure that any discrepancies in relation to documentation of such requirements are rectified.



4.83 *Staff competency and continuing education* – In the fall of 2010, Capital Health implemented annual competency checks for all sterile processing staff. At the time of our audit, a competency check had been completed for 15 of the 31 staff. Capital Health also requires staff complete an annual continuing education program; the District monitors compliance. We reviewed the process in place to monitor continuing education for sterile processing staff and found it was adequate.

Recommendation 4.19

Capital Health should update its processes for annual competency checks of sterile processing staff to ensure these checks are completed as required by District policy.

Capital Health Response:

Capital Health agrees with this recommendation and will continue with its current process of annual competency review of sterile processing staff. Competency assessments were completed by all SPD staff (with the exception of those on leave) by the end of 2011.

4.84 Cape Breton does not complete competency checks of sterile processing staff; the District has no continuing education requirements for those staff. Competency checks and ongoing education are important to ensure staff are aware of the most recent developments in their area.

Recommendation 4.20

Cape Breton District Health Authority should implement regular competency checks of sterile processing staff.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has established both a process and schedule for regular yearly competency checks of all staff by the Supervisor utilizing a validated checklist in addition to a random and routine auditing process. The first round of competency checks will be completed by September 2012.

Recommendation 4.21

Cape Breton District Health Authority should implement continuing education requirements for sterile processing staff.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and to this end has developed and commenced a continuing education program for staff with monthly required education sessions ranging from 30 minutes to 4 hours duration. Education sessions target all core competencies and those functions requiring regular recertification.

4.85 *Reprocessing single-use devices* – Certain health care devices have been declared as suitable for single-use only by manufacturers. This means these items are disposable, intended to be used once and discarded. However this practice can prove very costly



and some areas of health care have explored implementing third party reprocessing (cleaning and disinfecting) of certain of these devices.

- 4.86 *Capital Health* – In 2011, Capital Health began sending certain single-use devices for reprocessing in order to help mitigate budget pressures. The District has a detailed policy which includes the requirement that reprocessing will only occur at a facility approved by either Health Canada or the Food and Drug Administration (USA). Capital Health has a list of items they have approved for reprocessing and have an agreement with an FDA-approved facility to carry out reprocessing.
- 4.87 *Cape Breton* – Cape Breton had not determined whether to proceed with reprocessing of single-use devices at the time of our audit. Various groups at that District have considered this issue and concerns were noted over both the process and the limited potential cost savings to Cape Breton. District senior management told us they are actively reviewing the options available at the current time.
- 4.88 There is no clear analysis of the potential cost savings associated with reprocessing single-use devices, but given the costs involved – up to \$3,900 for certain items in the cardiac catheterization lab at Capital Health – the impact on the provincial health budget is significant enough that the Department of Health and Wellness should consider the issues.

Recommendation 4.22

The Department of Health and Wellness should review single-use device reprocessing and develop a provincial policy which all district health authorities can follow.

Department of Health and Wellness Response:

DHW agrees with the recommendation to review and develop a provincial policy for all DHAs to follow. IPCNS has been providing evidence-based support to districts investigating reprocessing of single-use devices; however IPCNS will develop a consistent, policy-based approach to ensure current standards and best practices are implemented in the DHAs by December 2012.

Hand Hygiene

Conclusions and summary of observations

Capital Health has adequate policies regarding hand hygiene and District infection control practitioners have done a good job of auditing to assess existing practices and improve performance. Although Cape Breton has similar policies to Capital Health, at the time of our audit, Cape Breton had only completed a small number of hand hygiene audits, each of which was quite small relative to the Capital Health audits. We found that Cape Breton did not adequately monitor to ensure appropriate hand hygiene practices in its facilities.



- 4.89 *Hand hygiene policies* – Both Districts have hand hygiene policies based on national programs, although the signage and materials used by Cape Breton are based on an older version of these programs.
- 4.90 *Monitoring compliance* – Staff at both Districts told us that auditing hand hygiene is the primary means by which infection control staff can monitor compliance, and that the communication of those results and subsequent education sessions are the primary approach to improving hand hygiene practices in their Districts.
- 4.91 Basic hand hygiene audits involve infection control practitioners spending time on a health care unit monitoring staff and service providers as they interact with patients. There are four moments identified during patient interaction in which the health care professional should either clean their hands with soap and water or use an alcohol-based rub. The four moments for hand hygiene are before contact with the patient environment, before an aseptic procedure, after exposure to body fluids, and upon leaving the patient’s environment. The premise of the audits is to record each moment and note whether the staff member properly cleans his or her hands.
- 4.92 Audits are typically conducted in two phases. The first is a baseline audit to determine the level of hand hygiene prior to taking any specific action. These baseline audits are followed by education programs, particularly for areas with lower results. Subsequent audits are completed to assess the success of the education programs.
- 4.93 *Capital Health* – At Capital Health, the infection control practitioner visits a hospital unit and records information whenever health workers or support staff enter rooms. In some instances, the practitioner may not be able to observe what happens when a health care worker enters a patient room, depending on the nature of the procedure and concerns with patient privacy. This is a common issue with hand hygiene audits but is a reasonable compromise given the nature of these situations.
- 4.94 All infection control practitioners at Capital Health conduct hand hygiene audits on the units they are responsible for. During our audit, we completed walkthroughs of Capital’s hand hygiene audits and found there is a high level of awareness of infection control practitioners on those units.
- 4.95 Capital Health completed hand hygiene audits on all of its inpatient units as well as other areas such as emergency. During our audit period, Capital conducted 52 audits at the four facilities we visited. This represents 31 initial audits and 21 follow-up audits. Capital Health’s audits have averaged approximately 184 moments for health care workers including physicians, nurses and others.
- 4.96 *Cape Breton* – Cape Breton’s methodology for hand hygiene audits is different from Capital Health, but consistent with national guidelines. The infection control practitioner conducting the audit follows a single health care worker as this person completes work on a unit. Similar to Capital Health, the infection control practitioner



does not follow the worker into a patient's room. All of Cape Breton's hand hygiene audits are completed by one infection control practitioner who works on a part-time basis having retired in 2009.

- 4.97 Although both Districts follow national practice guidelines, we believe the process Capital Health uses is more effective. It involves more staff completing the audits and provides for better coverage by observing many staff members' hand hygiene habits.

Recommendation 4.23

Cape Breton District Health Authority should have all infection control practitioners conduct hand hygiene audits on the units and facilities for which they are responsible.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has developed an improved auditing process for hand hygiene as a component of the new comprehensive Hand Hygiene program. All ICPs will conduct hand hygiene audits in their areas of assigned responsibility as well as a variety of other trained health care workers who will assist in providing accurate audit results.

- 4.98 At the time we completed our fieldwork, Cape Breton had only conducted 14 hand hygiene audits – eight initial audits, including one long term care unit, and six follow-up audits. Each of these audits was limited in size and only captured an average of 33 patient interaction moments. The small number of hand hygiene audits, and the limited nature of the audits which were completed, led us to conclude that Cape Breton was not doing enough to monitor and enforce compliance with hand hygiene policies. As discussed earlier in this Chapter, Infection Prevention and Control Nova Scotia noted the lack of infection control practitioner presence on patient units in Cape Breton as a concern. Regular hand hygiene audits help to ensure these practitioners visit patient units regularly.

Recommendation 4.24

Cape Breton District Health Authority should implement processes to ensure all hospital units have an initial hand hygiene audit and regular follow-up audits.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has developed a schedule and process for hand hygiene auditing that will ensure that all hospital units have both scheduled and random hand hygiene audits with regular follow up audits to ensure that improvements are evident and sustained.

Recommendation 4.25

Cape Breton District Health Authority should implement processes to ensure all hand hygiene audits are of sufficient size to ensure meaningful results.



Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has developed a plan to expand both its' auditing capacities and reporting capabilities to ensure that all units have sufficient hand hygiene auditing by a variety of auditors with a view to creating meaningful and accurate results that will inform decisions regarding culture improvement initiatives.

4.99 *Communication of audit results* – Capital Health infection control practitioners report the results of hand hygiene audits to those in charge of each unit; results are also posted on public bulletin boards in each unit and are available publicly on the District's website. The display includes a highly visible sign with the overall compliance rate for the unit, plus detailed results by staff category. It is useful because it is available to patients and their families. This is important as patients can have an impact on hand hygiene by asking health care workers if they have washed their hands.

4.100 Cape Breton does not post their hand hygiene audit results in any publicly visible location, but this information is provided to those in charge of a unit for discussion at staff meetings. The results are also reported in a District digest available to all staff. We noted there was no communication of hand hygiene audit results that easily reaches patients or their families. Failure to report these results so that patients can review them misses an opportunity to improve health care workers' hand hygiene through better-informed patients and families.

Recommendation 4.26

Cape Breton District Health Authority should post the results of its hand hygiene audits in a publicly visible location.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has developed a plan to post all hand hygiene audit results for all hospital units on the unit itself, the internal web site, the public web site and in designated public waiting areas for the public to view.

4.101 *Education* – Both Districts provided many examples of education materials and told us that they use the results of hand hygiene audits to direct this information to areas of higher need. District staff also showed us posters and pamphlets available throughout their hospitals for patients and visitors to review.

Hospital Acquired Infection Surveillance

Conclusions and summary of observations

While both Districts track an extensive list of hospital or health care acquired infections, neither has sufficient knowledge of the impact of those infections or of which infections are of most consequence to their District. Capital Health and Cape Breton both use case



definitions based on evidence-based best practice but we noted Cape Breton does not consistently apply its definitions. We also found that Capital Health does a better job of communicating infection rates to the people impacted by them.

- 4.102 *Policies* – Although both Districts have policies related to hospital acquired infections, most are outdated. As noted earlier, these policies are supposed to be reviewed every three years and updated as needed but this has not happened consistently.
- 4.103 *Case definitions* – Both Districts use definitions based on established best practice guidelines from organizations such as Health Canada or the Centers for Disease Control and Prevention in the United States. Although we had no concerns with the definitions used, the variety of sources supports the need for greater oversight by Health and Wellness to ensure that all district health authorities are using a consistent approach to monitor and track hospital acquired infections.
- 4.104 We tested cases recorded as hospital acquired MRSA, *C. difficile*, and ventilator associated pneumonia to determine whether these were properly classified. We did not test to determine whether the diagnosis of the disease was correct, but rather that the definition for hospital acquired MRSA, *C. difficile*, or ventilator associated pneumonia was met.
- 4.105 Due to differing infection rates in the hospitals we visited, our sample sizes vary from location to location. Different hospitals have experienced lower or higher rates of MRSA and *C. difficile* while some hospitals do not have ventilators and therefore did not have cases of ventilator associated pneumonia.
- 4.106 *Capital Health testing results* – We tested 30 MRSA files, 25 *C. difficile* files and 15 ventilator associated pneumonia files. 69 out of 70 files tested had sufficient evidence to support the District’s conclusion that the patient had a particular hospital acquired infection. In one instance, the patient should not have been classified as a hospital acquired *C. difficile* case. This patient file was from 2009 and the patient had *C. difficile* when he or she arrived in hospital.
- 4.107 *Cape Breton testing results* – We tested 30 MRSA files, 30 *C. difficile* files, and 20 ventilator associated pneumonia files. We found that 25 of the 30 MRSA files tested met the definition. 25 of 30 *C. difficile* files tested met the definition. Only nine of 20 ventilator associated pneumonia files tested met the definition. Cape Breton management told us they are taking what they consider a more cautious approach to classifying this infection; they are not excluding all cases which do not meet the requirements to classify as ventilator associated pneumonia and will re-examine their methodology.

Recommendation 4.27

Cape Breton District Health Authority should implement a process to ensure the classification of hospital acquired infections is consistent with District policies.



Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has developed an improved process for documentation of hospital acquired infections on the paper multidisciplinary progress note and in our new Infection Prevention and Control Database as a component of routine surveillance activities by IPCs. Classification is determined utilizing the best practice case definitions for designated hospital acquired infections that are reviewed annually and approved by the Infection Control Committee.

4.108 *Timeliness* – Capital Health tracks infection rates on a daily basis, with each infection control practitioner responsible for monitoring infections on their units. Cape Breton infection control staff told us they track infection rates retrospectively at month end. They spend a significant amount of time and effort attempting to tabulate the information, but are often late with this reporting. This delayed surveillance may allow outbreaks to go unrecognized for longer periods. In addition, the time infection control practitioners spend tabulating the statistics might be better spent visiting hospital units.

Recommendation 4.28

Cape Breton District Health Authority should develop a more efficient and timely surveillance approach for hospital acquired infections.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and is developing an improved surveillance program that will soon be supported by electronic laboratory results summary reporting (requested from HITS-NS on July 29, 2011) as well as a newly developed internal Infection Prevention and Control database. The program will be based on best practices outlined in relevant Ontario PIDAC (Provincial Infectious Diseases Advisor Committee) documents.

4.109 Cape Breton infection control practitioners told us that they do not visit units regularly, whether for surveillance, audits or on routine rounds. Even when new hospital acquired infections are identified on a particular unit, practitioners often phone the unit to ask whether appropriate precautions are in place rather than visiting in person.

4.110 Many of the facilities in Cape Breton are in rural areas. Infection control practitioners told us that they rarely visit some of these facilities from November to April of each year, relying instead on phone calls to facility staff. We believe practitioners could maintain a presence in these facilities during winter months by monitoring the weather and timing visits accordingly.

4.111 This is another instance in which Cape Breton’s infection control practitioners are not visible on patient units or in the facilities they are responsible for.

4.112 *Analysis performed* – Cape Breton and Capital do not have a complete analysis of the hospital acquired infection data collected, although both are attempting to monitor



for trends and outbreaks. Neither District is tracking morbidity or mortality rates associated with hospital acquired infections and neither has done any analysis of the costs associated with these infections, either to the patient or to the health care system.

- 4.113 Capital Health completes high level analysis of morbidity and mortality impacts for all areas within the District. This is done through its quality monitoring program and not connected to infection prevention and control. The rates for infections during our audit period were such that Capital Health management determined no further investigation was necessary.
- 4.114 Capital Health told us that they do track the isolation days and the costs associated with semi-private versus private rooms, but this is done from a billing perspective, not for infection control purposes.
- 4.115 One of Cape Breton's infectious disease doctors did a small research study in 2010 to assess the relative costs of treating a hospital acquired infection versus the costs of preventing the infection. While this was a small study, the results showed the costs of preventing hospital acquired infections were considerably lower than treating patients with these infections.
- 4.116 *Communication of hospital acquired infection rates* – Capital Health is doing a much better job of communicating rates to staff, service providers, volunteers, patients, families and visitors. Infection rates are posted on publicly-visible bulletin boards on patient units and are available publicly on the District's website. As noted, Cape Breton does not use public bulletin boards, instead posting the information on their intranet and encouraging staff to review it. Subsequent to our audit we noted that Cape Breton began posting infection rates on its website. While this is an improvement, posting this information directly in the unit would be more visible to patients and families at the time they are in hospital.

Recommendation 4.29

Cape Breton District Health Authority should improve its communication of hospital acquired infection rates by posting information in areas which health care workers, patients and families or visitors can easily access.

Cape Breton District Health Authority Response:

CBDHA accepts and agrees with this recommendation and has developed a new internal Infection Prevention and Control Database that will eliminate manual rate calculation and facilitate accurate and efficient report preparation for defined hospital acquired infection rates. Since December 2011, District rates have been posted on the public web site. Reports will also be posted monthly on patient care units, the internal web site and designated public areas in hospitals illustrating unit specific as well as site and District rates.



- 4.117 *Province-wide trends* – Neither District is monitoring province-wide trends in other district health authorities, or trends for similar infections occurring in other non-health facilities in their own districts. Similarly, Health and Wellness does not have any information on the incidence of infectious diseases and hospital acquired infections in the province.
- 4.118 Both Districts told us that the lack of a provincial surveillance system means there is virtually no ability to monitor possible trends or to identify hospitals with outbreaks so that patient transfers from those facilities can be treated with appropriate caution. Through Infection Prevention and Control Nova Scotia, the Department of Health and Wellness should lead the development of a surveillance system. Recommendation 4.1 earlier in this Chapter covers this issue.
- 4.119 *Role of infection control* – This audit illustrates the importance of infection prevention and control in limiting and controlling serious outbreaks of infectious diseases. As Government moves forward with attempting to reduce costs in health care, we understand that infection control has been included as an administrative service, rather than a patient care service. This could potentially lead to more significant cuts to infection control programs in the future. The results of this audit show the impact a poorly run infection prevention and control program can have in a district. Significant reductions to an infection prevention and control program are likely to result in negative impacts for patients and for overall health budgets as the system cares for patients with hospital acquired infections.



Cape Breton District Health Authority Additional Comments

The Cape Breton District Health Authority accepts the recommendations in this audit report and has taken steps to implement changes. The findings in this report are consistent with the previous reports released by the District. Following the initial *C. difficile* outbreak in 2011, steps were taken to increase the number of infection control practitioners and reorganize the service in order to be more effective. Further additions to infection control practitioner staff to bring the District to best practice levels have also been implemented. These additional resources represent an 86 percent increase over pre 2011 levels of staffing.

In late summer 2011, the District completed an assessment of sterile processing practices and was in the process of implementing changes recommended from this review at the time of the Auditor General's study. The commitment of additional resources to infection control at a time of restrained health care funding, the review initiated prior to the Auditor General's visit and the transparency in releasing all of the reports completed on the outbreaks demonstrate the District's commitment to improving its culture of infection prevention and control as well as sharing the lessons learned from our experiences with other health care organizations.

While acknowledging that a review of events always identifies opportunities for improvement, the District does not accept the premise that the District's response to the outbreaks was not effective. The report of the Public Health Agency of Canada clearly demonstrates that action in response to the outbreak resulted in a significant reduction in the transmission of *C. difficile* in District hospitals. Subsequent to the declaration of the second outbreak, specialized laboratory testing identified that the three patients diagnosed with *C. difficile* in the Intermediate Care Unit at the Cape Breton Regional Hospital had three different and distinct strains of the disease signifying that the transmission did not occur on this unit. Case review of the three patients diagnosed with *C. difficile* on 4B identified a single room as a common factor. It is important to note that in both of these units no further transmission to other patients occurred.

The District acknowledges the need to improve and strengthen its culture of infection control with significant focus on preventative issues starting with improvements in hand hygiene. The District has also introduced an antimicrobial stewardship program as reduction and improved use of antibiotics has been demonstrated to reduce the potential for *C. difficile*.

The District thanks the Auditor General staff for their input into the identification of areas to further enhance and strengthen infection control as part of an overall strategy to enhance patient safety.



Capital Health Additional Comments

Capital Health accepts the recommendations as outlined in this report. From Capital Health's perspective, it is important to stress that:

1. access to a very strong co-leadership team of an infection control manager and physician experts in infectious diseases;
2. employment of a dedicated team of infection control practitioners; and
3. senior leadership and organization wide commitment to continuous quality improvement, patient safety and overall quality;

are key to an effective infection control and management program.



Department of Health and Wellness Additional Comments

Although no provincial surveillance system is in place at this time, IPCNS has made some progress in data collection for healthcare-associated infections (HAIs). IPCNS has collaborated with Public Health in the process of making *Clostridium difficile* a notifiable disease as of April 1, 2012. This requires all *Clostridium difficile* isolates to be reported provincially to Communicable Disease Control, Public Health Services. IPCNS has been designing the data collection process to identify HAIs in conjunction with district-based infection control practitioners (ICPs) and Public Health.

Additionally, during the large *Clostridium difficile* outbreak in Cape Breton District Health Authority, IPCNS was monitoring the outbreak on a daily basis with case reports submitted by the Cape Breton District Health Authority. Given the Department's intimate involvement in that outbreak, IPCNS drafted a 'Lessons Learned' document (available publically) to share some of the findings and important mitigation strategies that were required to bring the outbreak under control, with other DHAs.

The Department appreciates the thorough review by the Auditor General on infection prevention and control. The Department agrees with all of the recommendations pertaining to the Department and recognizes the importance of accountability in its relationship with the DHAs. Over the next year, the Department will develop and enhance existing measures for monitoring and evaluating the districts' compliance with standards of care and Department expectations.

Infection Prevention and Control Nova Scotia – Recommendations from A Report on Lessons Learned Following a Clostridium difficile Outbreak in Acute Care

Following the *C. Difficile* outbreak at Cape Breton District Health Authority in early 2011, Infection Prevention and Control Nova Scotia produced a report titled *A Report on Lessons Learned Following a Clostridium difficile Outbreak in Acute Care*. This report included a number of recommendations; some were directed to the District, while others had broader applicability. We have reproduced these recommendations below for information purposes.

1. Develop the IPAC program that meets the mandate and goal of decreasing the risk of health care-associated infections and improving health care safety. This should be in line with the District mandate and reviewed yearly with a multidisciplinary infection prevention and control committee. It should include annual goal-setting, program evaluation and ensuring that the IPAC program meets current legislated standards and requirements as well as the requirements of the facility.
2. The District has increased ICP FTE position by 1.5; however it should continue to increase the FTE compliment to meet the needs of the IPAC program.
3. Require all ICPs to obtain Certification in Infection Control, within two to five years of hire. This should be included in the job description.
4. Ensure that ICPs maintain their knowledge and skills through continuing education relevant to their professional practice and recertification in infection control every five years.
5. Facilitate ICPs' active participation in professional activities at the provincial and national levels of CHICA NS and CHICA Canada.
6. Increase visibility of ICPs on their respective units. Daily rounds will enhance relationships between infection control and the clinical unit.
7. Conduct regular and ongoing educational programs for healthcare providers (including volunteers, family members and students) to reinforce current best practices of infection prevention and control, emphasizing the importance of hand hygiene.
8. Review and revise surveillance practices for data collection, collation, analysis, and reporting to ensure timely and efficient identification of trends can be detected. Ideally, surveillance should be facility-based, i.e. each ICP conducting surveillance of hospital acquired infections in the facilities they are responsible for.
9. Develop a process to store data so that it can be accessed and reviewed by ICPs in the various sites. Consistent documentation storage on a secure shared drive will facilitate this process.
10. Ensure the use of line listing occurs at the outset of an outbreak to better monitor cases, patient movement, and trends.
11. Ensure reporting of surveillance information to the involved services/programs and hospital administration in a format that is easily understood.
12. Consider reporting surveillance data as part of the hospital score card for quality and patient safety on the public web site in an understandable and easy to access format. This will improve transparency and confidence in the hospital.
13. Ensure infection control practitioners perform ongoing audits (hand hygiene, adherence to additional precautions, environmental, and construction-site audits) and daily rounds of all hospital sites, either in person or by phone. Regularly scheduled visits to rural sites will



Infection Prevention and Control Nova Scotia Recommendations (continued)

- increase visibility and provide opportunities to deliver targeted education to healthcare staff. Use of technology may assist in virtual visits to more remote rural sites when travel is difficult.
14. Provide opportunities for ICPs to expand their technical expertise, particularly in the area of reprocessing and construction/renovation-related auditing. Gaps in knowledge should be identified and a plan developed to facilitate closing the knowledge gap.
 15. Outbreaks should be managed by a multidisciplinary team that includes the ICP team. Delegate legitimate authority to the ICP to implement prompt outbreak management measures.
 16. Ensure Infection Prevention and Control has input in product procurement and evaluation, coordination with safety, and other quality assurance initiatives. It is imperative that they be involved at all stages of facility design and renovation and have the authority to halt projects if there is a risk to client/patient/resident or staff safety. Selected finishes should be able to withstand frequent exposure to hospital-approved disinfectants, be water impermeable and easily cleaned.
 17. Non-intact furnishings and surfaces identified by staff and through environmental audits should be repaired or replaced.
 18. Ensure that:
 - a) Commode chair is dedicated to the patient/resident;
 - b) Commode is cleaned and disinfected whenever the room/bathroom is cleaned;
 - c) When precautions are discontinued, dedicated commodes and bedpans are cleaned and disinfected before use with another patient/resident;
 - d) Items used to clean the bathroom of a patient/resident with CDI must be dedicated to that bathroom and discarded once Contact Precautions are discontinued (e.g., toilet brush)
 19. Ensure removal or decommissioning of spray wands in patient bathrooms and soiled utility rooms. It is acknowledged that CBDHA immediately disconnected the taps of the wands upon receiving this recommendation from IPCNS.
 20. Develop and enforce a strict process for bedpan/commode waste management to prevent further splashing and contamination of the environment. The process should utilize the soiled utility rooms or consider alternative management strategies that do not result in unnecessary environmental contamination of patient's toileting room. Installation of bedpan flusher/disinfectors may be considered a viable alternative.
 21. Dedicated hand washing sinks should be available for staff to wash their hands. Hand hygiene should not be carried out at a patient sink as this will recontaminate the health care worker's hands. A plan should be developed in consultation with nursing staff and ICPs to determine the most appropriate locations for hand washing sinks to ensure they correlate with work flow practices.
 22. Audit and observe meticulous hand hygiene with either soap and water or alcohol-based hand sanitizer (ABHS). Soap and water is theoretically more effective in removing spores than ABHS but if a dedicated sink is not immediately available ABHS is a reasonable alternative.
 23. Provide education to staff and patient's on the need and procedure to be used for hand hygiene (i.e., The 4 moments for hand hygiene).
 24. Ensure continuance of environmental audits. These should be carried out using a standard checklist and all audit results should be documented and analyzed. Audit results should



Infection Prevention and Control Nova Scotia Recommendations (continued)

be shared and reviewed with environmental services staff as part of ongoing professional development.

25. Engage IPAC in the selection and purchase of cleaning and disinfectant products. A system that utilizes automated dispensing/dilution technology may streamline the process of mixing for staff eliminating any room for error with dilution ratios. All environmental services staff should receive in-depth education of both the cleaning chemistries they are using and the best practices for cleaning and disinfection.
26. Develop detailed checklists for environmental services staff to use during outbreak and non-outbreak times.
27. The proper cleaning of a *C. difficile* room involves twice daily cleaning and disinfection using a hospital approved cleaning and disinfection agent. The timing of the cleaning should be spaced as much as possible to improve the effectiveness of this process. A sporicidal agent should be used twice daily in the patients bathroom.
28. If an outbreak is suspected or confirmed switching to a sporicidal agent should be considered and used throughout the rooms of patients with suspected or confirmed CDI. It is important to note that bleach is not a cleaning agent and therefore if this is the selected sporicidal agent, cleaning must still be done using a compatible approved hospital cleaning and disinfection agent prior to application of bleach (this applies to #26 above).
29. When otherwise unexplained new onset of diarrhea occurs, those patients should be immediately placed on contact precautions while awaiting investigations to determine the cause.
30. Make every effort to minimize the amount of in-house and between-site transfers of symptomatic, isolated patients.
31. During an outbreak, it is strongly recommended not to manage patients with confirmed *C. difficile* in the same room as patients who do not have the infection.
32. A single room with dedicated toileting facilities (i.e., private bathroom or individual commode chair) is preferred. In instances where a patient is unable to be accommodated in this manner, priority should be given to patients who are fecally incontinent. If a symptomatic patient is in a multi-bed room, the patient should be provided a dedicated commode chair which must be emptied in a dedicated site (i.e. soiled utility hopper, bed pan flusher/disinfector) to avoid contamination of the environment. The stool must not be discarded in a washroom used by other patients.
33. Cohorting lab-confirmed cases with other lab-confirmed cases is an acceptable approach however placement should always be done under the direction of the ICP.
34. Initiate a formal and inclusive outbreak management team which will meet frequently, if not daily to assess outbreak data and update team on status of interventions. The Outbreak Management Team (OMT) directs and oversees the management of all aspects of an outbreak.
35. Ensure representation from the following: ICPs, Infectious Disease physician, if available, senior administration and appropriate hospital departments (i.e. environmental services, pharmacy, laboratory, purchasing, bed utilization/discharge planner personnel, Occupational Health, public relations/communications staff to handle media inquiries, etc.). It is important that representatives on OMT have decision-making power, particularly the ICP to direct practice changes of an infection prevention and control nature.



Infection Prevention and Control Nova Scotia Recommendations (continued)

36. Through a multidisciplinary approach, including pharmacy, physicians, technological support, medical microbiology, infection prevention and control, and clinical resource nursing, implement an antibiotic stewardship program ensuring targeted antimicrobials meet the local epidemiology and strains present.
37. In patients with CDI, consideration needs to be given to changing the implicated antibiotic(s) to antimicrobial agent(s) felt to pose a lower risk for CDI. Nonessential antibiotics must be discontinued. Other elements of management include the avoidance of prescribing antimotility agents and the prompt institution of supportive care (i.e. hydration and electrolyte replacement).

To identify the specific agent to use in the treatment of CDI, the patient should be evaluated to determine the severity of illness. The laboratory criteria that have been associated with more severe disease are a WBC count greater than 15,000 and/or a serum creatinine level greater than 1.5 the premorbid level, particularly in those over the age of 60 yrs. For mild to moderate disease, metronidazole is the recommended treatment. For those with severe disease, as determined by the clinical presentation and/or laboratory criteria, treatment with oral or nasogastric vancomycin is recommended. Those with more complicated disease (e.g. requiring ICU admission because of the CDI, shock, ileus and toxic megacolon) should have consultation with a physician experienced in treating CDI, as well as potentially surgical consultation. For further information, the Infectious Diseases Society of America (IDSA) provides guidance on the management of CDI infection on their website. (<http://www.jstor.org/stable/10.1086/651706>)