

Infection Prevention and Control

Annual Report 2015 - 2016



northern health
the northern way of caring

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Executive Summary

The Northern Health Infection Prevention and Control (IPAC) program's annual report highlights achievements and continued challenges facing infection prevention and control practices throughout the region. The report summarizes the progress of programs and initiatives, education, hand hygiene compliance, outbreaks, and annual infection rates within Northern Health (NH) during the fiscal year 2015 - 2016 (April 1, 2015 – March 31, 2016).

This fiscal year, the IPAC program has been involved in a number of projects and initiatives both provincially with Provincial Infection Control Network (PICNet), and regionally. The IPAC team members are also involved in the BC chapter of Infection Prevention and Control Canada (IPAC Canada), as well as individual interest groups within IPAC Canada.

Regional:

- Ebola Low Risk Personal Protective Equipment (PPE) Survey
- Customer Improvement Satisfaction Survey
- Northern Health Endoscopy Process Flow Review
- Participated in various Infection Prevention Week Activities
- Participation in BC Patient Safety & Quality 10K initiative
- Participated in the development of Infection Prevention Plan for companies and camps

Provincial:

- Participated in the Provincial Hand Hygiene working group and sub-working groups: communication, best practice guidelines
- PICNet Scientific Operations Advisory Committee (SOAC), Ebola Ethics committee
- Involved in the provincial Ebola Task Force
- Involved in Hand Hygiene Provincial Blitz Campaign

National:

- Participated in the following IPAC Canada Interest Groups: Long Term Care, Medical Device Reprocessing, Surveillance and Applied Epidemiology (SAIEG), Health Care Facility Design and Home and Community Care
- Participated in the Canadian Patient Safety "Clean Shots" National Campaign

Medical Device Reprocessing Department (MDRD):

- Initiated the standardization of disinfectants, detergents and consumables for Northern Health MDRD.
- Assisted in the audit process for Endoscopy suites. Worked with ICP team to design and provide a pre-clean poster and a flow chart for Endoscope, Patient and Environmental Cleaning.
- Participated in Learning Pathway Workshop for Medical Device Reprocessing provided by Organizational Education and Training Department
- Chair of Medical Device Reprocessing Department NH Regional monthly meetings.
- Developed standardized document for high level disinfecting in the Medical Imaging departments in NH.
- Completed 2015 Audit report for NH Acute Care facilities and Non-Acute care facilities.

Based on this year’s report, the key priorities for 2016 - 2017 will be:

2016 - 2017

Introduction

The Northern Health IPAC program is part of the Vice President Planning, Quality, and Information Management portfolio. The program is dedicated to the prevention and reduction of healthcare associated illness in Northern British Columbia residents through a variety of strategies summarized in this annual report.

The IPAC team is comprised of a Regional Manager, an Epi-technologist, eight infection prevention and control practitioners and a Medical Device Reprocessing Coordinator. The group (including a dedicated practitioner for residential care), provides on-site and consultative infection prevention and control and sterile reprocessing expertise, to thirty five acute care facilities, residential care facilities, home and community care, assisted living facilities, Diagnostic and Treatment (D&T) centres and health centres.

Northern Health is geographically divided into three Health Service Delivery Areas (HSDAs) and each of these areas is represented by a multidisciplinary IPAC Committee. Committee membership includes representatives from the following groups: physicians, public health, environmental health, workplace health and safety, plant services, nursing, residential care, lab, support services and Health Services Administrators. The committees report to the NH IPAC Council, the NH Medical Advisory Committee, and the Senior Executive Team.

The IPAC program functions in accordance with international, national, and provincial guidelines and best practices across the continuum of care. The program influences practice through the following:

- Provides infection surveillance (includes Antibiotic Resistant Organisms [ARO], and Surgical Site Infection [SSI]) and disseminates data to appropriate stakeholders;
- Develops and recommends best practices, policies, and procedures;
- Involved in infection prevention and control issues relating to all construction and renovation projects within NH to ensure that infection prevention strategies are followed during construction and renovation projects according to the Canadian Standards Association protocols
- Provides education and training to healthcare providers, patients, non-medical caregivers, and visitors;
- Provides outbreak management support to all acute care facilities, residential care facilities, D&T centres, health centres, and community programs within Northern Health.

Infection Prevention and Control Team Members

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IPAC Manager

Infection Prevention & Control Practitioners

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Acute Care Facilities



Bulkeley Valley District Hospital – Smithers



Chetwynd Hospital & Health Centre



Dawson Creek and District Hospital



Fort Nelson Hospital



Fort St. John Hospital



GR Baker Memorial Hospital – Quesnel



Kitimat General Hospital



Lakes District Hospital – Burns Lake



Mackenzie and District Hospital



McBride Hospital



Mills Memorial Hospital – Terrace



Northern Haida Gwaii Hospital



Prince Rupert Regional Hospital



Queen Charlotte Islands Hospital



St. John Hospital – Vanderhoof



Stuart Lake Hospital-Fort St. James



University Hospital of Northern BC – Prince George



Wrinch Memorial Hospital – Hazelton

Assisted Living Facilities

- Alward Place Seniors Assisted Living – Prince George
- Gateway Lodge Assisted Living Residence – Prince George
- Heritage Manor II – Fort St John
- Laurier Manor – Prince George
- McConnell Estates – Terrace
- Nick Grosse Assisted Living Residences – Masset
- Summit Assisted Living Residences – Prince Rupert

Diagnostic and Treatment Centres, Health Centres

Atlin Hospital
Fraser Lake D&T Centre
Granisle Community Health Centre
Houston Health Centre
Hudson Hope Health Centre
Stewart Health Centre
Stikine D&T Centre – Dease Lake
Tumbler Ridge D&T Centre
Valemount D&T Centre

Home and Community Care

Residential Care Facilities

Acropolis Manor – Prince Rupert
Bulkley Lodge – Smithers
Dunrovin Park Lodge – Quesnel
Gateway Lodge Residential Care – Prince George
Jubilee Lodge – Prince George
Kitimat Mountain View Lodge
Parkside Care – Prince George
Peace Villa – Fort St. John
Rainbow Lodge – Prince George
Rotary Manor – Dawson Creek
Simon Fraser Lodge – Prince George
Stuart Nechako Manor - Vanderhoof
Terrace View Lodge - Terrace
The Pines – Burns Lake

Education

The IPAC team continuously strives to provide NH staff, patients, visitors, and residents with relevant education, based on current evidence-based recommendations. The team completed the task of migrating the hand hygiene, Medical Device Reprocessing MDRD, and infection prevention page to the intranet, OurNH.

In keeping with Northern Health's vision, messages are communicated using various strategies with the goal of promoting a culture in which infection prevention is integrated into all aspects of care, namely:

- Promotion of hand hygiene and environmental cleaning for the home.
- Outbreak management in non-Northern Health facilities
- Conference presenters
- Workshops and presentations, consultations, "coffee break", "Pod talks", "tea time" sessions, and "huddles" to address client, procedure, or unit-specific concerns to acute and residential care, support services, home health, health promotion, students and third party providers
- Educational resources were reviewed and updated as needed and are available through OurNH intranet.
- A newsletter with pertinent information and current events within the region, as well as fun facts and stories and a 'spot light' introducing individual infection control practitioners (ICPs) continues to be distributed on a quarterly basis.
- Development and initiation of the Northern Health Skin Care Program.

Education and/or consultation provided by NH IPC team this year included but not limited to:

- Health care worker all-hazard personal protection training
- New employee orientation
- Hand hygiene and auditor training
- Reprocessing of medical devices
- Construction and renovation
- Routine practices for acute, community and residential care
- Surgical site infection surveillance
- World hand hygiene day/ Infection Prevention Control Week/ Canadian patient safety week
- Blood and body fluid exposure counselling
- Influenza and employee immunization clinics
- Clostridium difficile, Antibiotic resistant organisms
- Outbreak Management
- Community outreach i.e. Sparks (Girl Guides)

Medical Device Reprocessing Department

Education:

Medical Device Reprocessing monthly meetings via teleconference are used to provide updates on standards, guidelines, practices and education. Guest speakers were invited to provide expertise.

The Medical Device Reprocessing webpage is updated monthly. Information available on the webpage includes minutes for the monthly MDRD meetings, self-study education courses, reference material such as; Best Practices Guidelines For Cleaning, Disinfection and Sterilization of Critical and Semi-critical Medical Devices, Infection Prevention And Control Guidelines for Flexible Gastrointestinal Endoscopy and Flexible Bronchoscopy, as well as other related guidelines, articles, and informative material.

In-services were provided as needed with the purchase of new equipment or consumables.

There are educational opportunities accessed on-line that provide credit hours for education. These include:

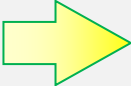
- Webinars
- On-line courses
- Training videos
- Power Points
- In-services

Challenges in accessing educational opportunities have been identified. These include time constraints due to job duties and work load, and little or no computer access at several sites. Recommendations have been made to minimize these challenges.

Surveillance

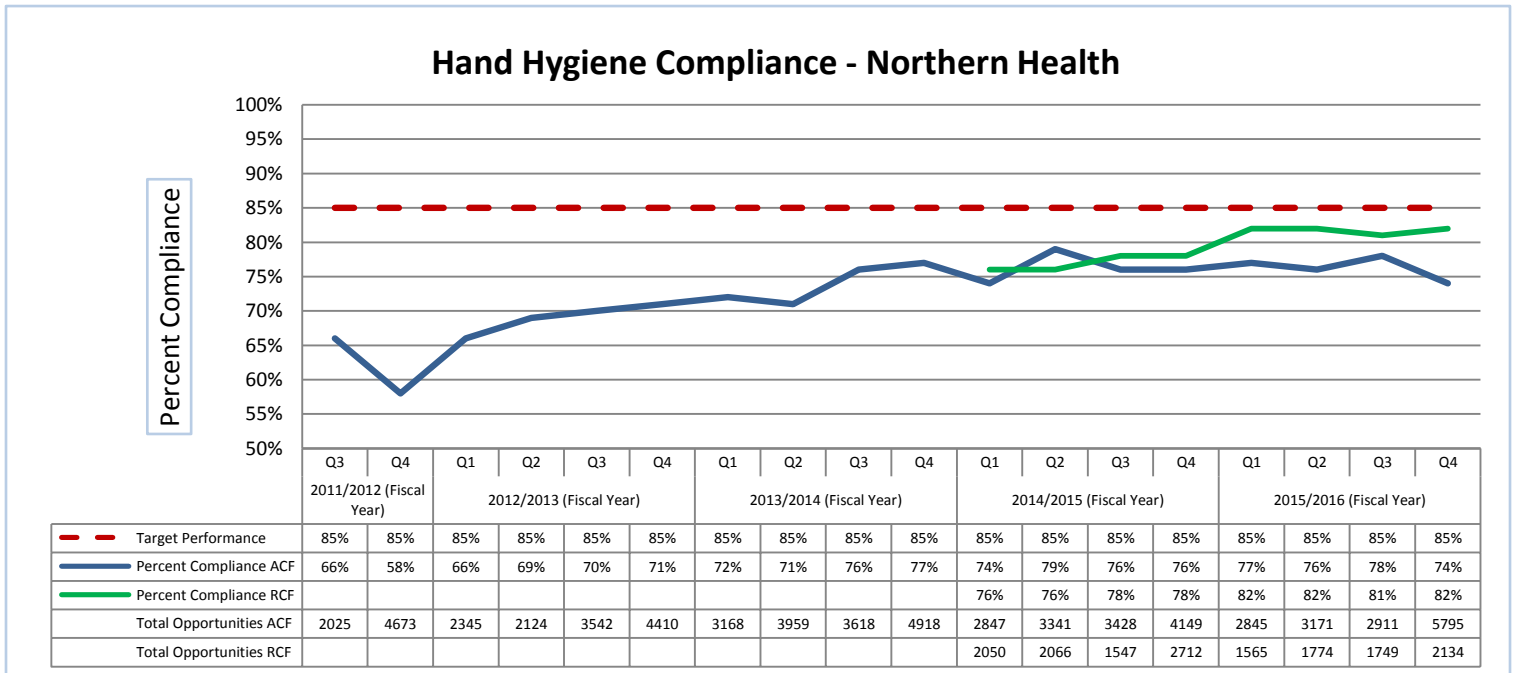
The IPAC program carries out surveillance on a number of quality and patient safety indicators. This section of the report presents information on a number of these indicators. Surveillance case definitions can be found in Appendix 1.




Hand Hygiene

Indicator	2015 – 2016 Rate	Trend*	Target
Hand Hygiene Compliance	Acute Care Facilities: 76% Residential Care Facilities: 82% Nursing Staff: 79% Physicians: 61% Clinical Support Services: 77% Other: 73%		85%

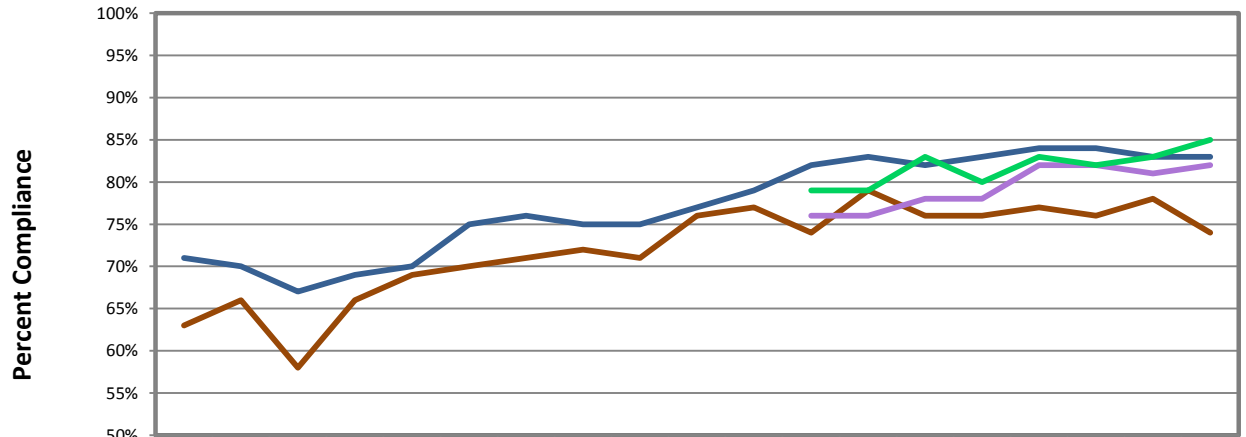
Hand hygiene (HH) with either soap and water or alcohol based hand rub is recognized as a key component in the prevention of healthcare associated infections. HH is required both before and after contact with patients and their environment. The minimum provincial requirement is 200 observations per quarter for each facility with 25 or more beds. For facilities with fewer than 25 beds, the audit data is aggregated into NH data.

Ongoing challenges within NH are recruitment of HH auditors, and maintaining sustainability with auditing at both acute and residential care facilities.



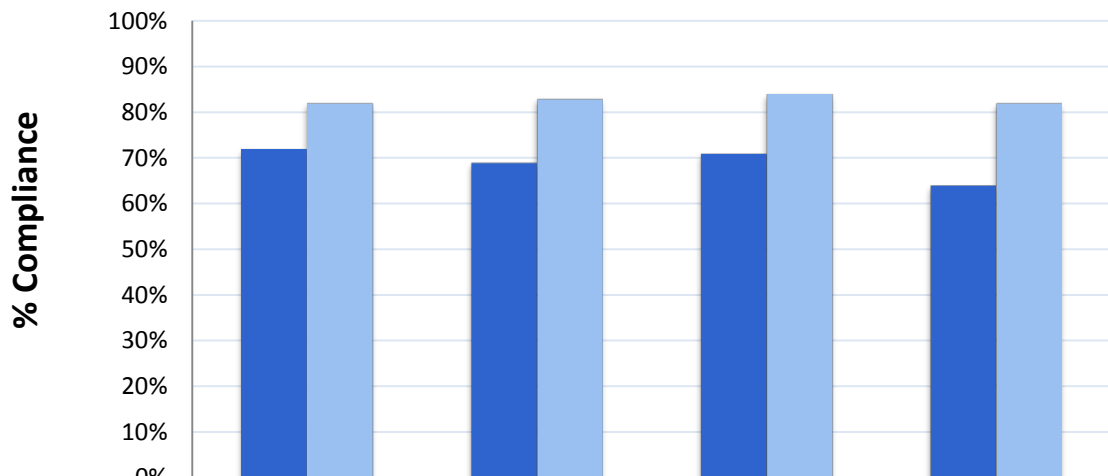
*  = improving; at least 4 consecutive data points moving towards target  = deteriorating; at least 4 consecutive data points moving away from target  = steady; fewer than 4 consecutive data points moving in either direction

Hand Hygiene Compliance - NHA & Province of BC



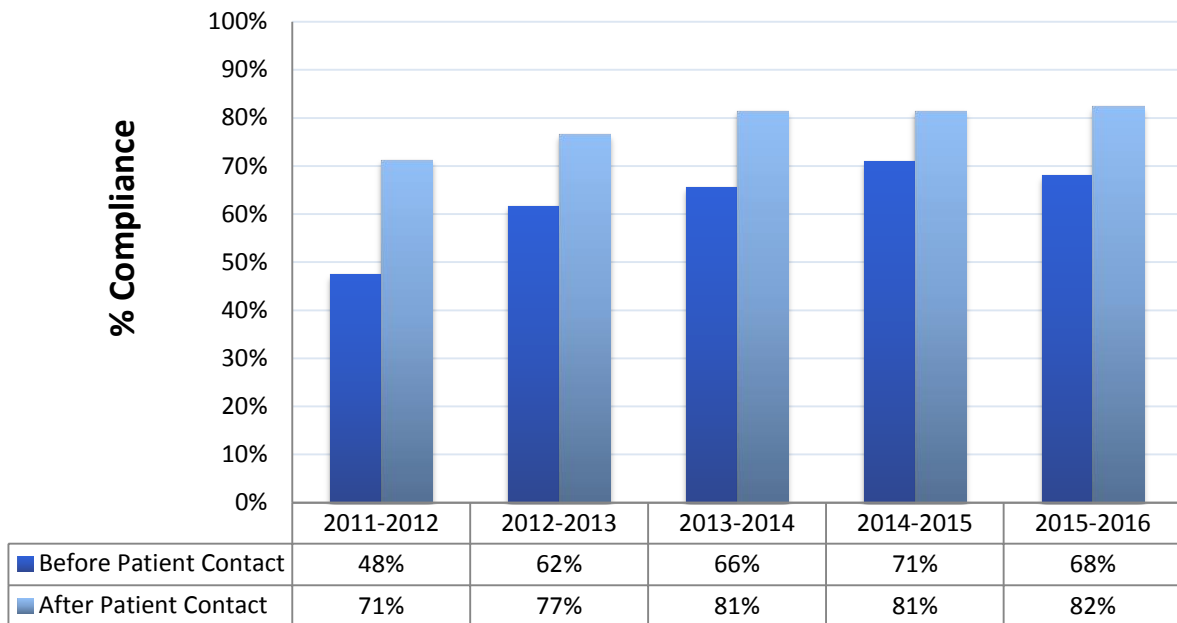
	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
	2011/2012			2012/2013				2013/2014				2014/2015				2015/2016			
NH Percent Compliance ACF	63%	66%	58%	66%	69%	70%	71%	72%	71%	76%	77%	74%	79%	76%	76%	77%	76%	78%	74%
Province of BC Percent Compliance ACF	71%	70%	67%	69%	70%	75%	76%	75%	75%	77%	79%	82%	83%	82%	83%	84%	84%	83%	83%
NH Percent Compliant RCF												76%	76%	78%	78%	82%	82%	81%	82%
Province of BC Percent Compliant RCF												79%	79%	83%	80%	83%	82%	83%	85%
NH Opportunities ACF	1790	2025	4673	2345	2124	3542	4410	3168	3959	3618	4918	2847	3341	3428	4149	2845	3171	2911	5827
Province of BC Opportunities ACF	25429	20883	31026	36974	39901	43076	54779	44867	45303	46079	58009	52299	54547	62038	78864	56411	53452	48393	61967
NH Opportunities RCF												2050	2066	1547	2712	1565	1774	1749	2134
Province of BC Opportunities RCF												8778	10057	8191	12231	9775	10455	9631	12832

Hand Hygiene Compliance in Northern Health Before and After Patient Contact (2015-2016)



	Q1	Q2	Q3	Q4
Before Patient Contact	72%	69%	71%	64%
After Patient Contact	82%	83%	84%	82%

Hand Hygiene Compliance in Northern Health Before and After Patient Contact Averages (2011-2016)

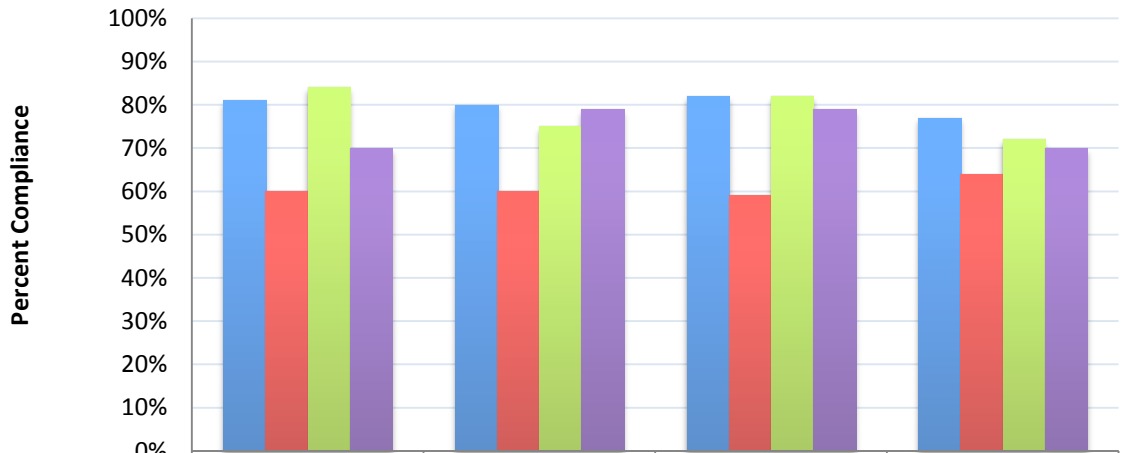


Overall in 2015-16 all healthcare provider groups improved their HH compliance rates.

Actions taken in 2015-16 include:

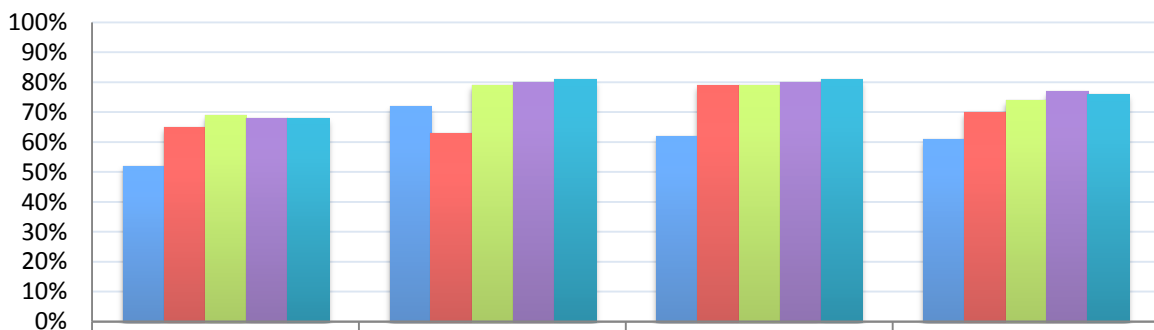
- Increased communication and involvement with senior management
- Increased participation of NH facilities in the HH auditing process resulting in an increased number of HH audits performed
- Beta testing of a HH app for electronic monitoring
- Participation in “Stop clean your hands day” and patient safety week
- Ongoing education for healthcare workers on how and when to perform HH
- Encourage patients to ask their healthcare provider if they have washed their hands
- Participated in provincial hand hygiene communications campaign
- Efforts to combine Hand Hygiene with Influenza clinics

Hand Hygiene Compliance in NorthernHealth per Healthcare Provider (2014-2016)




	Q1	Q2	Q3	Q4
■ Nursing Staff	81%	80%	82%	77%
■ Physicians	60%	60%	59%	64%
■ Clinical Support Services	84%	75%	82%	72%
■ Other	70%	79%	79%	70%

Hand Hygiene Compliance in Northern Health Averages 2011 - 2016

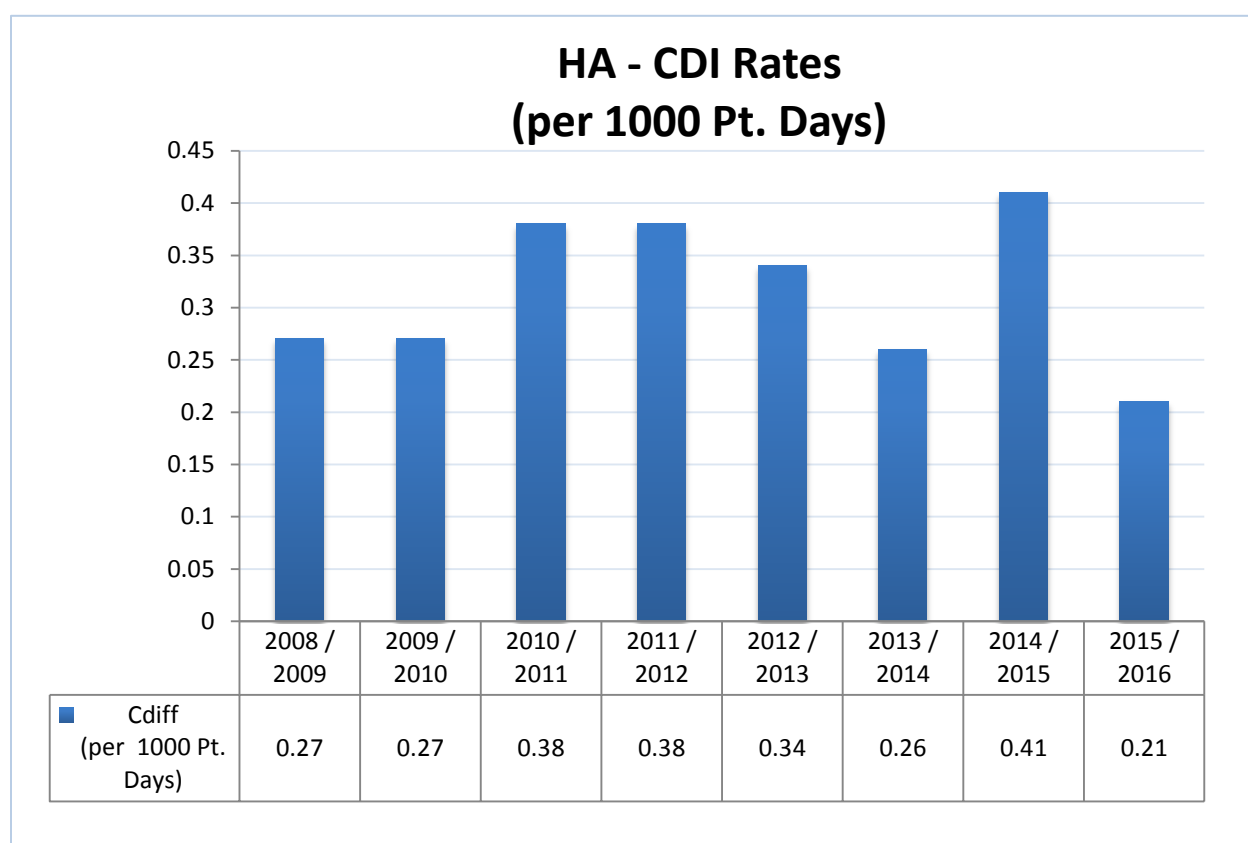





	NI	NE	NW	NH
■ 2011 / 2012	52%	72%	62%	61%
■ 2012 / 2013	65%	63%	79%	70%
■ 2013 / 2014	69%	79%	79%	74%
■ 2014 / 2015	68%	80%	80%	77%
■ 2015 / 2016	68%	81%	81%	76%

Clostridium difficile Infections (CDI)

Indicator	2015 – 2016 Rate	Trend*	Target
Hospital-acquired (nosocomial) CDI rates	0.21 per 1000 pt. days		< 0.3 per 1000 pt. days

Clostridium difficile is a spore forming bacterium that can cause infections of the gastrointestinal system. *Clostridium difficile* infection (CDI) is one of the most common infections acquired in health care settings as the physical environment plays a significant role in transmission of CDI more so than any other healthcare associated infection.



*  = improving; at least 4 consecutive data points moving towards target  = deteriorating; at least 4 consecutive data points moving away from target  = steady; fewer than 4 consecutive data points moving in either direction

The annual rate of hospital acquired *Clostridium difficile* infection (HA-CDI) is the number of new cases of CDI in NH facilities, divided by the total number of in-patient days, multiplied by 1000.

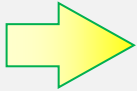
The projected 2015-16 target is a HA-CDI rate of < 0.2 cases per 1000 pt. days.

In comparison to the Antimicrobial Resistance Surveillance, Public Health Agency of Canada 2015 rate of 0.42 HA-CDI cases per 1000 pt. days, NH rates were lower at 0.21 per 1000 pt. days in 2015 - 2016.




Actions taken in 2015-16 include:

- Implemented protocol for cleaning with sporicidal for all suspected and confirmed cases
- Facilitated increased communication between front line nursing staff and environmental services
- Increased education sessions for HCWs, patients, visitors and families on appropriate transmission precautions
- Development of CDI power point with voice over for NH staff

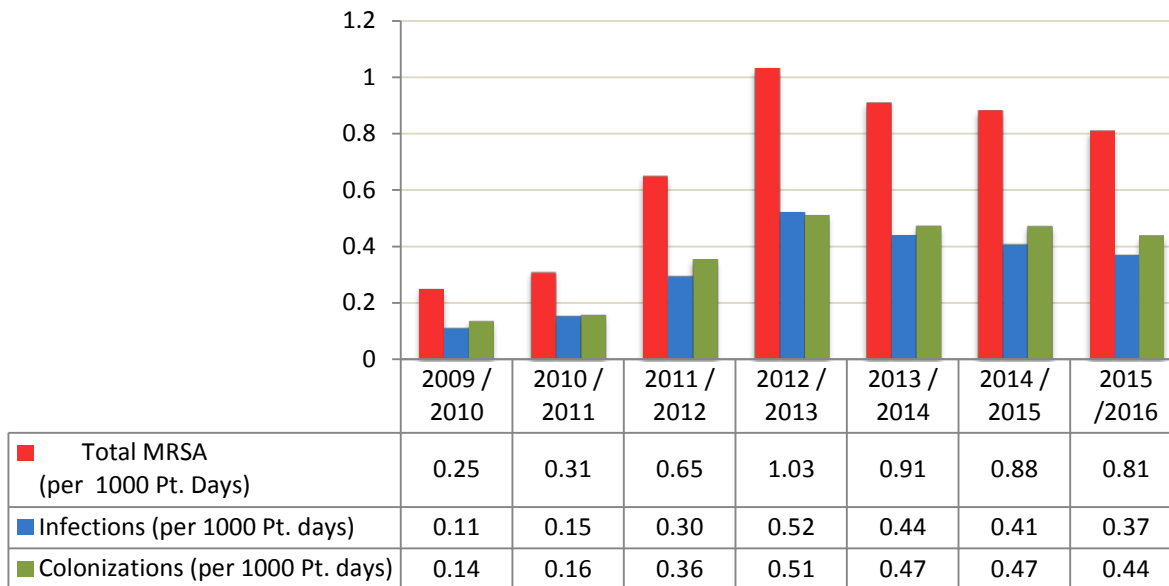
Methicillin-resistant *Staphylococcus aureus* (MRSA)

Indicator	2015 – 2016 Rate	Trend*	Target	Actual
Hospital-acquired (nosocomial) MRSA Infection & Colonization Rates	0.80 per 1000 pt. days		< 0.6 per 1000 pt. days	Infections 0.37/1000 pt. days Colonizations 0.44/1000 pt. days

Methicillin-resistant *Staphylococcus aureus* (MRSA) is a strain of *Staphylococcus aureus* resistant to a number of antibiotics such as methicillin, penicillin, and amoxicillin. MRSA is primarily spread by skin to skin contact or contact with items and surfaces contaminated by the bacteria. The principle mode of transmission in healthcare facilities is considered to be from one (colonized or infected) patient to another via the contaminated hands of healthcare providers. Patients at greatest risk of acquiring MRSA are the elderly, have chronic diseases and/or undergo invasive procedures.

*  = improving; at least 4 consecutive data points moving towards target  = deteriorating; at least 4 consecutive data points moving away from target  = steady; fewer than 4 consecutive data points moving in either direction

MRSA Infection and Colonization Rates



The incidence rate of MRSA is the number of newly identified cases of MRSA (colonized and infected) acquired by patients as a result of their stay in a Northern Health acute care facility, divided by the total number of in-patient days, and multiplied by 1000.

Northern Health MRSA rates have remained steady from 0.88 in 2014-15 to 0.81 in 2015-16.

Limitations included:


- Difficulty with accommodating patients with an ARO (s) or risk factors for AROs in appropriate single rooms due to overcapacity and due to many shared wards with older hospitals design structure
- Rates of hand hygiene compliance remained steady at 77% but remain below 85% target

In comparison to the Antimicrobial Resistance Surveillance, Public Health Agency of Canada 2015 infection rate of 0.29 MRSA cases per 1000 pt. days, NH MRSA infection rates were higher at 0.37 per 1000 pt. days in 2015 -2016.

Ongoing Actions:

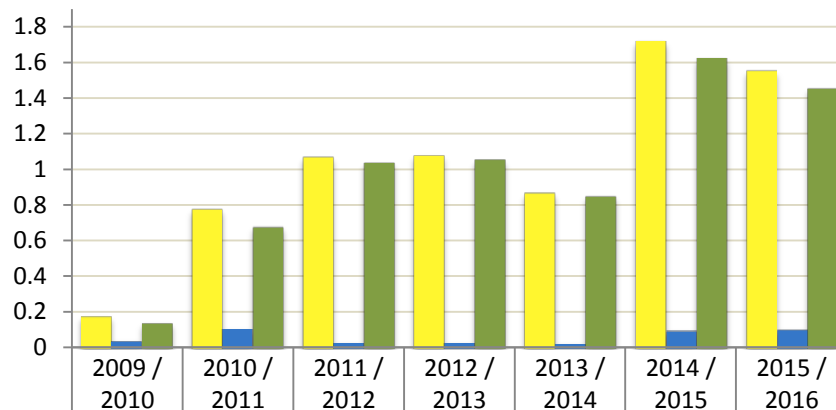
- A revision of ARO screening form was completed. All acute care admissions are screened.
- All NH patients who test positive for an ARO have their health record flagged with that ARO alert
- Continued 30 day prevalence screening of all previously tested negative in-patients
- Continued education for HCWs and patients regarding rationale for ARO screening




Vancomycin Resistant *Enterococci* (VRE)

Indicator	2015 – 2016 Rate	Trend *	Target	Actual
Hospital-acquired (nosocomial) VRE Infection & Colonization Rates	1.55 per 1000 pt. days		< 1.0 per 1000 pt. days	Infections 0.10 /1000 pt. days Colonizations 1.45 /1000 pt. days




Vancomycin-Resistant *Enterococcus* is a strain of enterococci that has developed resistance to the antibiotic Vancomycin, making infections more difficult to treat. Most patients are colonized with VRE rather than infected. VRE, like MRSA, is most often spread via contact with contaminated hands or surfaces and equipment.

VRE Nosomical Cases and Colonization Rates



 Total VRE (per 1000 Pt. Days)	0.18	0.78	1.07	1.08	0.87	1.72	1.55
 Infections (per 1000 Pt. days)	0.04	0.10	0.03	0.03	0.03	0.09	0.10
 Colonizations (per 1000 Pt. days)	0.14	0.68	1.04	1.05	0.85	1.62	1.45

The incidence rate of Vancomycin-Resistant *Enterococci* (VRE) is the number of newly identified cases of VRE (colonized and infected) acquired by patients as a result of their stay in a Northern Health acute care facility, divided by the total number of in-patient days, and multiplied by 1000.

*  = improving; at least 4 consecutive data points moving towards target  = deteriorating; at least 4 consecutive data points moving away from target  = steady; fewer than 4 consecutive data points moving in either direction

Northern Health VRE rates decreased from 1.72 in 2014-15 to 1.55 in 2015-2016. The projected 2015-16 target is a decrease to < 1.0 per 1000 pt. days.

Limitations included:

- Difficulty with accommodating patients with an ARO (s) or risk factors for AROs in appropriate single rooms due to overcapacity and due to many shared wards with older hospitals design structure
- Rates of hand hygiene compliance remained steady at 77% but remain below 85% target

In comparison to the Antimicrobial Resistance Surveillance, Public Health Agency of Canada 2015 infection rate of 0.04 VRE cases per 1000 pt. days, NH VRE infection rates were higher at 0.10 per 1000 pt. days in 2015 -16.

Ongoing Actions:

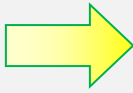
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- All NH patients who test positive for an ARO have their health record flagged with that ARO alert
- Continued 30 day prevalence screening of all previously tested negative in-patients
- Continued education for HCWs and patients regarding rationale for ARO screening

Management of Carbapenemase Producing Organisms (CPO)

Carbapenemase Producing Organisms are gram negative bacteria that harbor Carbapenemase producing genes. These genes allow the organism to be resistant to the carbapenem family of antibiotics. Similar to VRE and MRSA, the most common mechanism of transmission is contact, both direct and indirect.

In 2015 - 2016, no cases of CPO were identified in NH.

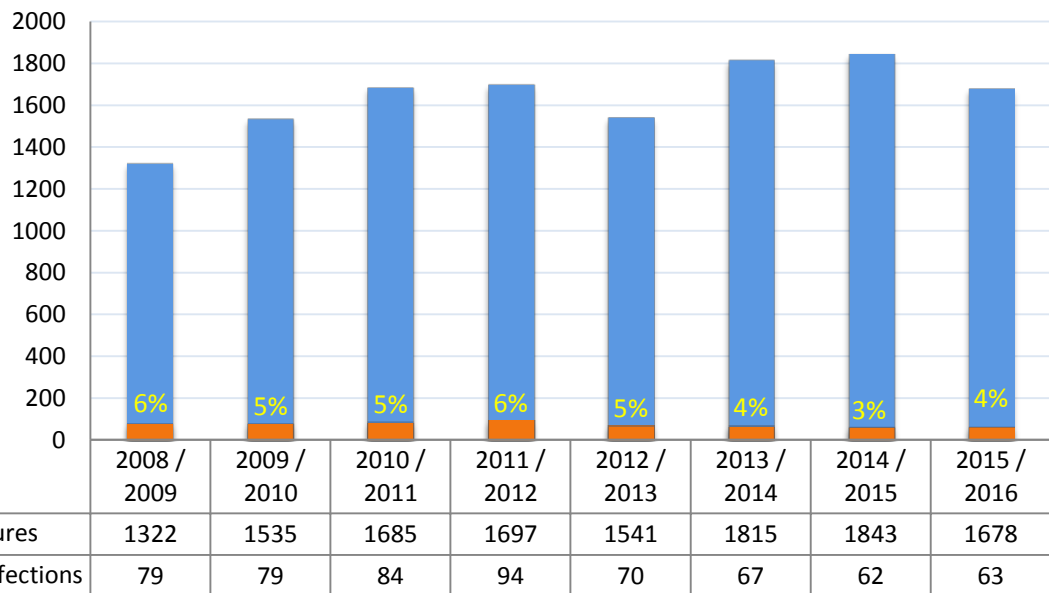
Surgical Site Infections (SSI)




Indicator	2015 – 2016 Rate	Trend *	Target
Surgical Site Infection Rates	4 per 100 procedures		< 3 per 100 procedures

Surgical Site Infections (SSI) are the most common healthcare-associated infections as found in a prevalence study done by the CDC. SSI's remain a substantial cause of morbidity, prolonged hospitalization, and death.

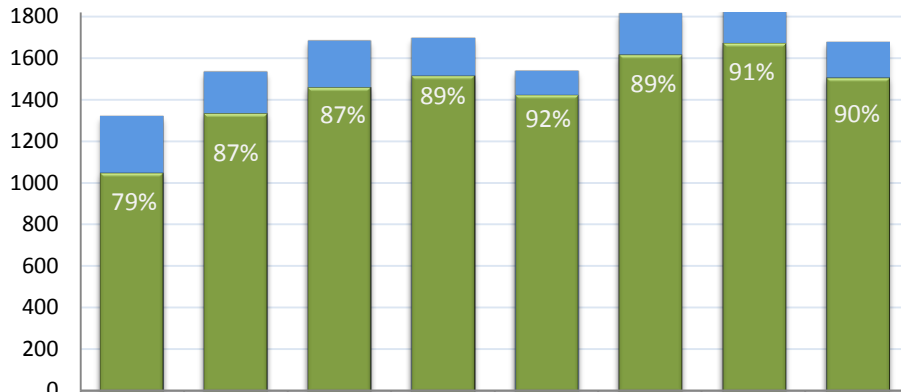
Surgical procedures surveyed for infection include: Caesarean section, total abdominal hysterectomy, total primary hip replacement, total primary knee replacement, and bowel resection (not including the rectum). Surveillance of antibiotic prophylaxis given within one hour of surgical cut time is also monitored.

NH Overall Total Surgical Site Infection 2008 - 2016



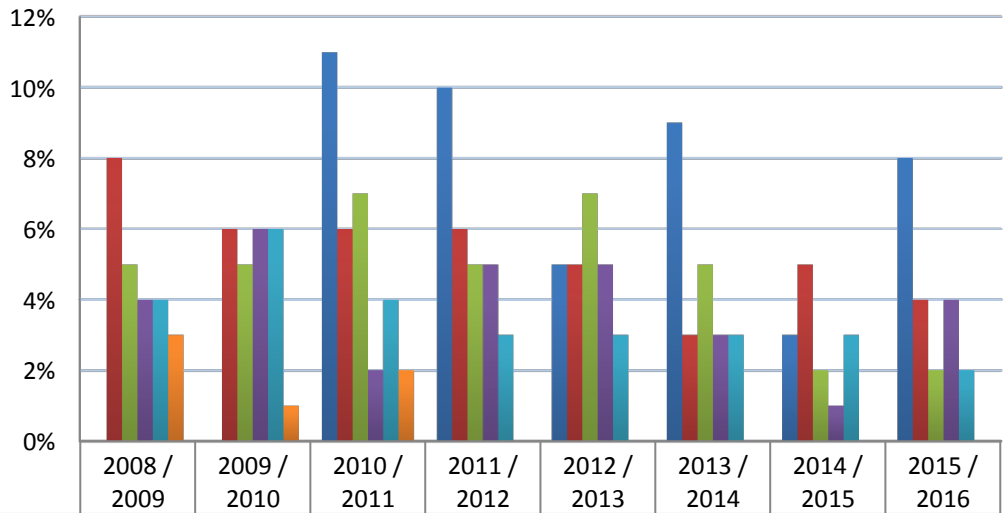
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NH Overall Total Prophylactic Antibiotic 2008 - 2016



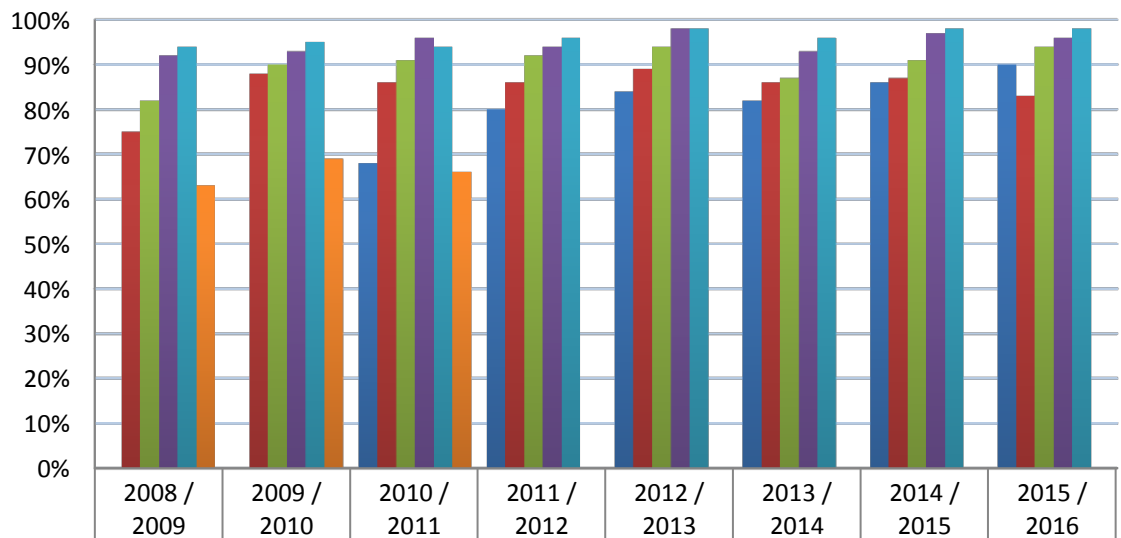
	2008 / 2009	2009 / 2010	2010 / 2011	2011 / 2012	2012 / 2013	2013 / 2014	2014 / 2015	2015 / 2016
NH Total # of Procedures	1322	1535	1685	1697	1541	1815	1843	1678
NH Total Prophylactic Antibiotic	1050	1335	1460	1517	1424	1617	1672	1506

Surgical Sites Infection Rate (%)



	2008 / 2009	2009 / 2010	2010 / 2011	2011 / 2012	2012 / 2013	2013 / 2014	2014 / 2015	2015 / 2016
Bowel Resections Total %			11%	10%	5%	9%	3%	8%
C-sections Total %	8%	6%	6%	6%	5%	3%	5%	4%
Abdominal Hysterectomies Total %	5%	5%	7%	5%	7%	5%	2%	2%
Total Hip Replacements Total %	4%	6%	2%	5%	5%	3%	1%	4%
Total Knee Replacements Total %	4%	6%	4%	3%	3%	3%	3%	2%
Abd / Inguinal Hernias Total %	3%	1%	2%	NS	NS	NS	NS	NS

Antibiotics Given within 1 Hour of Cut Time (%)



■ Bowel Resections			68%	80%	84%	82%	86%	90%
■ C-sections	75%	88%	86%	86%	89%	86%	87%	83%
■ Abdominal Hysterectomies	82%	90%	91%	92%	94%	87%	91%	94%
■ Total Hip Replacements	92%	93%	96%	94%	98%	93%	97%	96%
■ Total Knee Replacements	94%	95%	94%	96%	98%	96%	98%	98%
■ Abd / Inguinal Hernias	63%	69%	66%	NS	NS	NS	NS	NS

Northern Health SSI rates increased from 3 per 100 procedures in 2014-15 to 4 per 100 procedures in 2015-16. The projected 2016-17 target is a continual decrease to < 3 per 100 procedures.

Rates of antibiotic prophylaxis administered within one hour of procedure cut time have remained stable in all of the surgeries followed. Difficulty in finding prophylactic antibiotic administration information on the patient chart continues to be an ongoing challenge.

Benchmark and Rate Comparison with previous years:

Procedure	Benchmark*	SSI 2011/2012	SSI 2012/2013	SSI 2013/2014	SSI 2014/2015	SSI 2015/2016
Abdominal Hysterectomy	1.10-4.05 per 100 procedures	4.8 per 100 procedures	7 per 100 procedures	5 per 100 procedures	2 per 100 procedures	2 per 100 procedures
Caesarean Section	1.46-3.82 per 100 procedures	6.5 per 100 procedures	5 per 100 procedures	3 per 100 procedures	5 per 100 procedures	4 per 100 procedures
Bowel Resection	**3.99-9.47 per 100 procedures	10 per 100 procedures (denominator or data <100)	5 per 100 procedures (denominator or data <100)	9 per 100 procedures	3 per 100 procedures	8 per 100 procedures
Total Primary Hip Replacement	0.67-2.40 per 100 procedures	5.0 per 100 procedures	5 per 100 procedures	3 per 100 procedures	1 per 100 procedures	4 per 100 procedures
Total Primary Knee Replacement	0.58-1.60 per 100 procedures	3.3 per 100 procedures	3 per 100 procedures	3 per 100 procedures	3 per 100 procedures	2 per 100 procedures

*Benchmark data from National Healthcare Safety Network (NHSN) report: Data Summary for 2006 through 2008, issued December 2009. Doi: 10.1016/j.ajic.2009.10.001

Actions Taken in 2015 - 2016:

- Patients are monitored for up to 1 year for total hip replacement (THR) and total knee replacement (TKR)
- Some NH sites increased prophylactic antibiotics given within 1 hour of cut time from 1g Cefazolin to 2g according to best practice
- UHNBC participates in the 10K initiative, a provincial campaign initiated by National Surgical Quality Improvement Program (NSQIP).
- Facilitate communication with surgeons regarding infections
- Clusters are investigated and discussion for quality improvements occur

Outbreak Management

Responsible Organism	# of Staff Affected	# of Patients Affected	Dates / Length of Outbreak	Facility Type
GI - unknown	2	3	April 23-30, 2015	UHNBC – Inpatient Psychiatry
GI - unknown	0	13	March 25-March 30, 2015	Stuart Nechako Lodge – Long Term Care
GI, Unknown	0	13	March 25 – April 1, 2015	Rainbow Lodge – Long Term Care
GI, Unknown	0	4	May 29 – June 3, 2015	Parkside Complex Care – Long Term Care
GI, Unknown	0	5	October 13 – 15, 2015	Mountainview Lodge – Long Term Care
ILI – Rhinovirus or Enterovirus	0	9	October 29 – November 2, 2015	Gateway Complex Care – Long Term Care
GI - Norovirus	9	24	December 24/15 – January 4/16	Simon Fraser Lodge – Long Term Care
GI - Norovirus	13	12	January 4 – January 13, 2016	Terraceview Lodge - Long Term Care
GI - Norovirus	4	10	January 18 – January 29, 2016	McConnell Estates- Assisted Living
GI - Norovirus	2	18	February 14 – 24, 2016	Simon Fraser Lodge – Long Term Care
ILI - Unknown	5	14	March 3 – March 9, 2016	Stuart Nechako Lodge – Long Term Care
GI - unknown	5	14	March 9 – March 2016	Parkside Complex Care
GI - Unknown	4	3	March 8 – March 11, 2016	UHNBC – Family Medicine Unit
GI - Unknown	5	11	March 22- April 12, 2016	Peace Villa – Long Term Care

Northern Health uses a multidisciplinary approach to manage outbreaks, and includes representatives from IPAC, Workplace Health & Safety (WH&S), administration, nursing, medical staff, support services and external resources such as Public Health.

Members of the Outbreak Prevention and Management Team (OPMT) provide service to the affected patients and/or units and work collaboratively to ensure a timely and coordinated response to an outbreak.

The primary components of outbreak management include:

- Confirmation of an outbreak based on case and outbreak definition criteria
- Notification of stakeholders
- Implementation of control measures
- Ongoing communication with all stakeholders
- Staff education and support as required throughout the outbreak episode
- Overseeing timely/accurate specimen collection
- Ongoing surveillance/monitoring of outbreak cases (new versus recovery)
- Evaluating effectiveness of interventions – Infection Control (IC) input provided during team meetings
- Organizing post outbreak team meeting – Debriefing and identifying areas for quality improvement

Medical Device Reprocessing Department (MDRD)

The Medical Device Reprocessing Coordinator works in collaboration with the Infection Prevention in Northern Health. With the assistance of Infection Prevention, reprocessing audits were completed at all sites in Northern Health. Non-compliance practices were identified, recommendations for improved practices were made and follow-up was ongoing for the remainder of the year.

The Coordinator assisted in the Endoscopy suite audits initiated by Infection Prevention and provided recommendations.

Focus on endoscope cleaning and high level disinfecting preceded the audits. A visual aid pre-clean step by step chart was developed as a result and is now required to be posted at the bedside pre-cleaning area in the endoscopy room suites. Duodenoscopes are being cleaned using the revised manufacturer's instructions for use.

Challenges are related to hospital design, construction materials that don't meet standards, outdated equipment, overused equipment and limited storage space. Adherence to workflow is critical at the sites where space requirements are not adequate. Communication tools and signage in the department help ensure correct flow is followed all the time.

Facilities Audited	2013 Percentage	2014 Percentage	2015 Percentage
Bulkley Valley District Hospital - Smithers	97.14	93.3	97.33
Dawson Creek and District Hospital	92.68	95.5	95.90
Fraser Lake D&T Centre			95.80
Fort Nelson General Hospital			98.01
Fort St John Hospital	97.73	95.2	96.43
GR Baker Memorial Hospital - Quesnel	96.36	91.06	98.51
Kitimat General Hospital	97.33	96.3	99.63
Lakes District Hospital - Burns Lake			95.04
Mackenzie and District Hospital			92.24
Mills Memorial Hospital - Terrace	93.75	88.46	95.08
Prince Rupert Regional Hospital	87.04	93.2	97.19
Queen Charlotte Islands Hospital			92.41
St John Hospital - Vanderhoof	97.51	95.3	96.93
Stewart Health Centre			100
Stikine D&T Centre - Dease Lake			100

University Hospital of Northern BC - Prince George	92.68	97.2	98.61
Wrinch Memorial Hospital - Hazelton	96.04	96.88	99.15
Total Average Score	**94.82	**93.45	*97.48
* For all sites			
**For sites with Operating room			

Environmental Requirements for Reprocessing Area and Storage and Use of Reprocessed Medical Devices received the lower scores in the audit. Recommendations have been well received by the sites and work is being done in both of these areas.

2015 Overall Average Compliance Scores

Practice Review Category	Average for Acute Care sites
1.0 Purchase of Medical Devices and Equipment	99.36%
2.0 Environmental Requirements	84.4%
3.0 Policies and Procedures	100.00%
4.0 Education & Training	94.61
5.0 Occupational Health & Safety	98.89%
6.0 Cleaning – Reusable Devices	97.35%
7.0 Liquid Chemicals for Disinfections	100.00%
8.0 Disinfection – Reusable Medical Devices	98.81%
8.1 Pasteurization	100%
9.0 Reprocessing Endoscopy	99%
9.1 Disinfectant	73.21%
9.2 Endoscope Process	100.00%
9.3 Drying & Storage	92.85%
9.4 Documentation of AER and HLD	89.9
10. Sterilization – Reusable Medical Devices	99.50%
10.1 Steam Monitoring	99.5
10.2 Flash Sterilization	99.17
10.3 Flash Documentation	90%
10.4 Table Top Sterilizer	100.00%
10.5 SS1 – Monitoring & Documentation	100.00%
10.6 D – Sterrad	100.00%
10.7 Sterrad – Monitoring & Documentation	100.00%
10.8 E – Ethylene Oxide (ETO)	N/A
10.9 ETO Monitoring & Documentation	N/A
11.0 Storage & Use of Reprocessed Medical Devices	90.01%

12.0 Quality Assurance	99.47%
13.0 Single Use Medical Devices	100.00%
14.0 Residential HCC, PH Settings	100%
15.0 Dental Clinics	100%
Average Across all categories	97.48%

Residential Care Facilities Audited

Residential care facility audits are required every three years. The following are results from the 2013 audits.

Residential Care Facilities Audited	2013 Percentage
Acropolis Manor – Prince Rupert	73.33
Bulkley Lodge - Smithers	72.73
Chetwynd Hospital & Health Centre	89.47
Dunrovin Park Lodge - Quesnel	88.00
Gateway Lodge – Prince George	100
Wrinch Memorial LTC - Hazelton	83.33
Jubilee Lodge – Prince George	94.74
Mountain View Lodge - Kitimat	71.43
Peace Villa – Fort St John	100
Parkside Care – Prince George	100
Rotary Manor – Dawson Creek	78.26
Stuart Nechako Lodge - Vanderhoof	75.00
Terrace View Lodge	91.67
The Pines – Burns Lake	84.62

Capital Equipment:

- UHNBC replaced their cart washer with a Steris Cart and Utensil Washer/Disinfector.
- GR Baker Memorial Hospital purchased a Sterrad NX Low Temperature sterilizer to replace the Sterrad 50
- GR Baker Memorial Hospital purchased an ESC1 Height adjustable endoscopy cleaning station.
- Terrace replaced the Steris Amsco small steam sterilizer in the OR.
- Terrace purchased a second Olympus OER-Pro to replace the Medivator DSD201.

Accreditation

Accreditation surveys of the Sterile Processing Departments and Infection Prevention Departments in NH were completed in June 2014. On site survey's included Wrinch Memorial, UHNBC, Prince Rupert Regional Hospital (PRRH), St. John's Hospital as well as Parkside Long Term Care Facility and Rotary Manor.

Several areas required further evidence. Information submission was completed November 6, 2015.

One outstanding item is:

- 1.2.3- Staff and service providers are aware of the infection rates and recommendations from outbreak reviews.

Evidence submission will be completed May 2016.

Appendix 1 – Surveillance Case Definitions

Clostridium *difficile* infection (CDI):

A diagnosis of CDI applies to a person with:

- Presence of diarrhea (e.g. three liquid or loose stools within a 24 hour period) or toxic megacolon without other known etiology, and laboratory confirmation of the presence of *C. difficile* toxin A and or B (positive toxin or culture with evidence of toxin production or detection of toxin genes)
- Diagnosis of typical pseudo-membranes or sigmoidoscopy or colonoscopy or
- Histological/pathological diagnosis of CDI with or without diarrhea

A CDI case is considered hospital acquired when:

- Patient develops symptoms in hospital equal to or greater than 72 hours after admission; or
- Symptoms occur in a patient that has been hospitalized or discharged within the previous 4 weeks, and the patient is not in a residential care facility

Antibiotic Resistant Organism (ARO) Case Definition:

An ARO case is defined as meeting ALL of the following criteria:

- Laboratory identification of an ARO;
- Patient must be admitted to an acute care facility
- ARO must be newly identified from the specimen collected at the time of hospital admission or during hospitalization
- Patient must have no known history of either infection or colonization with an ARO in any BC acute care facilities

This includes:

- ARO identified for the first time during hospital admission
- ARO newly identified in the emergency dept. and then admitted to your acute care facility;

This does not include:

- ARO cases previously identified by NH or other BC acute care facilities
- ARO cases identified in the ER or outpatient clinics but are not subsequently admitted
- ARO cases re-admitted

An ARO case is considered hospital acquired based on the following criteria:

- Length of time in acute care facility is >48 hours prior to ARO identification
- Prior healthcare facility admission >24 hours within the previous 12 months

- Prior history of chemotherapy, dialysis, or surgery in healthcare facility within the previous 12 months
- Indwelling catheter or other medical device (excluding Foley catheters and peripheral IV's) at time of admission which was installed at your facility

Surgical Site Infection:

Surgical procedures surveyed for infection include: caesarean sections, total abdominal hysterectomies, total primary hip and knee replacements, and bowel resections that do not involve the rectum.