Annual Report
2016–2017

Infection Prevention and Control
July 2017

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Executive Summary

Under the leadership of Linda Dempster, VP Patient Experience, Dr. Elizabeth Brodkin, Infection Prevention and Control (IPC) Executive Medical Director, and Loraine Jenkins, Executive Director, Maternal, Child, Infant & Youth Clinical Program and IPC Operations, the IPC program at Fraser Health is pleased to present the IPC annual report for 2016/17; the fifth consecutive year that an IPC annual report has been published. IPC continues to grow and strengthen as a regional program, supporting Fraser Health in the achievement of excellence in healthcare through the implementation of IPC evidenced-based practices.

The program focused on two of the Fraser Health Patient Safety Priorities that are under the leadership of IPC: (a) reducing *Clostridium difficile* infections (CDI) and (b) ensuring hand hygiene compliance continues to meet and exceed the provincial target of 80% compliance. The IPC program also concentrated on developing and implementing their second IPC Service Plan (2016–2018). The plan establishes priorities for the IPC program (and the organization) by providing clear goals, objectives and actions based on strengths and gaps in the organization and on emerging pathogens and public health threats. All the components of the service plan are intended to meet or exceed industry standards and best practices, to improve patient safety by preventing healthcare associated infections (HAI), to reduce the number of serious complications and deaths of hospitalized patients and residents and to improve the use of valuable healthcare resources.

This annual report highlights the outcomes and accomplishments of the program and outlines major goals and continued priorities for the 2017/18 fiscal year.

What have we accomplished this year?

This has been a very busy year for the IPC program, working on the numerous initiatives, projects and components of the 2016–2018 IPC Service Plan.

The following strategic initiatives highlight the work conducted by the program for the fiscal year 2016/17:

- Developed and implemented the new 2016–2018 Service Plan, which incorporated and updated incomplete items from the 2014–2016 plan
- Collaborated extensively and supported the Fraser Health Patient Safety priorities for hand hygiene and CDI, particularly units that are vulnerable to CDI

transmission. In 2016/17, all Fraser Health acute care sites met the annual target of ≤ 6.0 new CDI cases per 10,000 patient days

- Led a successful Accreditation Canada survey visit, meeting all priority processes and Required Organizational Practices; written acknowledgement was received from the surveyors for the work completed by the program to achieve its goals
- Collaborated with the BC Centre for Disease Control (BCCDC) Public Health Laboratory (PHL) to develop and validate a whole genome sequencing (WGS) tool to better understand risk factors for CPO acquisition
- Implemented a second CPO admission screening question for patients who have travelled to CPO-endemic countries
- Identified gaps and timelines for completion of Phase 1 recommendations for the Environmental Cleaning Best Practice policy communique that was issued by the Ministry of Health
- Trialed an ultra-violet (UV) light disinfection system as an adjunct to the regular cleaning and disinfection of patient rooms: patients were relocated into an appropriate holding area, the patient bathroom and the room were cleaned and disinfected with the UV device, the linens and cubicle curtains were replaced and patients were returned to the room
- Developed a CDI and antimicrobial stewardship (AMS) project in collaboration with Fraser Health's AMS Medical Director and Pharmacy that reviews all patients diagnosed with CDI, looking for gaps in management; where indicated cases are escalated to a clinical pharmacist
- Developed abstracts, posters and presentations for the BC Patient Safety and Quality Forum (BCPSQF), the BC Provincial Infection Control Network (PICNet) educational conference and Infection Prevention and Control (IPAC) Canada conferences.

The metrics for the IPC Healthcare Report Card and Indicators for 2017/18, reflecting the great work of the IPC program, are presented next.

IPC Healthcare Report Card and Indicators for 2017/18

Fraser Health IPC Healthcare Report Card Priorities					
Indicator	Status	Target	2016/17 Actual	Preferred Direction	Page #
CDI	●	≤6.0*	4.2*	↓	16
MRSA	▲	≤7.0*	6.1*	↓	20
Hand Hygiene Compliance	●	80%	86%	↑	25

* cases per 10,000 patient days
● meeting target
▲ within 10% of target
◆ outside of target range by more than 10%

Additional IPC Indicators					
Indicator	Status	Target	2015/16	2016/17 Actual	Page #
CPO	■	Reduction in transmissions	18**	9**	23
Hand Hygiene Observations	■	Increase in observations	135,258	130,707	25
Outbreak Management	■	Reduction in # of CDI Outbreaks	8	7	30

** number of new cases
■ minimal concerns: actual is meeting the target of year-over-year improvement and data points are moving in the preferred direction
■ concern area: actual is not meeting target of year-over-year improvement, or data points are not moving in the preferred direction, or indicator is a special consideration (e.g., CPO)
■ problem area: actual is not meeting target of year-over-year reduction, and data points are not moving in the preferred direction

What's next for 2017/2018

- Consultation, communication and support of improvement initiatives as part of the Fraser Health Patient Safety Priorities for CDI and hand hygiene
- Implement the CDI/AMS/Pharmacy QI project across all acute care sites
- Upgrade the Fraser Health hand hygiene audit program, including an update of the Fraser Health hand hygiene policy and the clinical practice guidelines, and implement a sustainable patient hand hygiene program

- Enhance IPC surveillance systems and reporting tools for acute care
- Enhance and promote IPC involvement for all phases of Fraser Health construction and renovation projects to uphold IPC best practices
- Explore and implement new IPC-related technologies and best practices
- Conduct research and quality improvement initiatives and submit abstracts to IPC and quality improvement conferences and peer-reviewed journals.

In a healthcare environment where accountability and transparency is at the centre of garnering public trust, the IPC program at Fraser Health welcomes your feedback on this report.

Please send comments to the IPC Senior Leader, Strategy and Performance: Petra Welsh (petra.welsh@fraserhealth.ca)

Introduction

The Fraser Health IPC program's mandate is to ensure patient, resident, client, staff, physician and visitor safety through control and prevention of infectious agents across the continuum of care.

IPC has a regional structure that provides local operational support at each of the Fraser Health acute care sites along with consultation across Fraser Health residential care facilities and community programs. In fiscal year 2016/17, the IPC program continued to grow and develop as a regional program in collaboration with site IPC leadership, primarily through the Regional IPC Operations Council (RIPCO) and direct site engagement of IPC HAI reduction initiatives. This council enabled an operations-focused acute care communication forum to discuss and make decisions related to operational requirements, impact and challenges of IPC regional clinical practices and initiatives.

The IPC team provides expertise in infection prevention and control principles, best practices and standards that promote patient safety efforts across Fraser Health, from front-line to organizational levels. The IPC program also participates in expert committees and collaborates with other BC health authorities (HAs) as well as local, provincial and national quality and patient safety organizations and related initiatives. The program continues to engage patients and patient advocates in the various IPC program initiatives, as their voices, suggestions and concerns are critical to the work of the program.

The strategic initiatives presented in this section provide an overview of the work conducted by the program for the fiscal year 2016/17, in addition to HAI-specific metrics and improvement work:

- Strengthened the integration of the IPC regional program that enabled the organization to collaborate on and respond quickly to emerging infection control issues
- Conducted surveillance and provided leadership to front-line staff regarding management of patients with HAIs (CPO, CDI, and MRSA)
- Collaborated with stakeholders on various initiatives to reduce HAIs among Fraser Health patients/residents/clients

- Revised and published the IPC acute care manual with clinical practice guidelines, toolkits and best practices, and education material; planned the community IPC manual and revised the A-Z table.

The IPC Annual Report is organized in four sections:

- Executive Summary
- Introduction
- Healthcare-Associated Infection (HAI) Indicators
- IPC Best Practices

IPC Leadership and Support Team

The Fraser Health IPC program reports to Linda Dempster, the Vice-President Patient Experience, who provides executive leadership and strategic oversight for the Infection Prevention and Control program. The IPC program is led by Dr. Elizabeth Brodkin, Executive Medical Director, and Loraine Jenkins, Executive Director for Operations, in consultation with the Medical Microbiologists from the Fraser Health Department of Laboratory Medicine and Pathology and the site-based Directors of Clinical Operations, who are the IPC leads. The IPC program is also supported by Public Health, Workplace Health, and numerous other stakeholders and programs across the Health Authority (see Appendix A for the IPC Program Organizational Chart). The information below describes the IPC team.

Linda Dempster Vice-President, Patient Experience	Angeli Mitra IPC Managing Consultant (interim)
Dr. Elizabeth Brodkin IPC Executive Medical Director	Daniel Chan Manager, IPC Operations
Loraine Jenkins Executive Director, MICY & IPC Operations	Louis Wong Epidemiologist
Petra Welsh Senior Leader, IPC Strategy and Performance	Loretta Bogert-O'Brien Health Data Analyst
Tamara van Tent Director, Clinical Operations, MICY & IPC	Julie Reynolds Program Assistant
Ruth Dueckman Clinical Nurse Specialist (CNS), IPC	Ziquan (Steven) Zhou Business Analyst, IPC / Health & Business Analytics
Tara Leigh Donovan IPC Managing Consultant	

IPC Practitioners

IPC Practitioners (IPCP) work in partnership with operational leadership at Fraser Health acute care sites on IPC initiatives by providing consultation, recommendations and education on IPC policies, standards, best practices and guidelines. They act as a resource and determine opportunities for IPC improvement and follow up on occurrences of infection transmission within acute care sites and units. The support practitioners provide among acute care sites also include communicable disease and outbreak investigations, reviewing IPC measures for construction projects, building capacity for IPC training by educating educators and providing support on emergent issues relevant to infection prevention and control. During fiscal year 2016/17, the practitioner team included the following individuals:

Amanda Giesbrecht	Michele Larocque-Levac	Stephanie Bos
Ed Vandergugten	Navjot Mahil	Steven Chan
Hyuna Choi	Parveen Dhaliwal	Swas Narayan
Ka Wai Leung	Raj Sohi	Tamara Moldon
Kam Riarh	Rani Sidhu	Terry Dickson
Karmic Sandhu	Sandeep Baddan	Urmila 'Mila' Sharma
Kirsten Emley	Sandra Tjosvold	Vladlena Abed
Leanne Wyman	Sheena Badh	Winnie Wong
Lesley Pike	Shelly Garcha	
Masoud Khoddami	Stephanie Au	

IPC Consultants

The IPC Consultants work in partnership with operational and clinical leaders across Fraser Health on IPC initiatives to provide leadership and IPC expertise in the assessment, design, implementation and evaluation of new systems for both site- and program-based models, in support of clinical priorities and in alignment with Fraser Health's strategic goals. Team members provide consultation and guidance to IPCPs and stakeholders to lead related initiatives, promote standardized, regional IPC best practices, develop policies and guidelines, support outbreak management, provide education and orientation to colleagues and advise on numerous construction projects in both acute care

and community settings. During fiscal year 2016/17, the consultant team included the following individuals:

Darlene Meeds Montero	Janie Nichols	Paul Chisholm
Fatma Taha	Iona Brierton-Joseph	Jacqueline Hlagi
Fuad Ibrahimov	Karen Jensen	Vladlena Abed

Awards, Achievements and Presentations

- Congratulations to Jacquie Hlagi for her 3M National Champion of Infection Control Presentation at IPAC Canada Breakfast of Champions
- Fraser Health received a successful report that the organization met all criteria for Accreditation Canada infection prevention and control standards, including all Required Organizational Practices (ROPs)
- (Re-) Certification in Infection Control (CIC) completion: Ka Wai Leung, Fuad Ibrahimov and Paul Chisholm
- BC Patient Safety Quality Council (BCPSQC) Quality Academy completion: Petra Welsh and Ruth Dueckman.

Table 1. Presentations at Conferences by the IPC Program for 2016/17

Presentation Title	Individual	Conference	Date
The BC Biocontainment Treatment Unit at Surrey Memorial Hospital (oral presentation)	Sandeep Baddan	IPAC BC	2016
The Development of the IPAC Canada Mentorship Program (oral presentation)	Jacquie Hlagi	IPAC Canada	2016
Implications of TB PCR Testing for Frontline ICPs (oral presentation)	Sheena Badh Ka Wai Leung Lesley Pike	PICNet	2017
Whole Genome Sequencing and What We Are Learning About CPO Transmission (oral presentation)	Dr. Elizabeth Brodkin Dr. Linda Hoang	PICNet	2017
Clostridium difficile Infection Surveillance: Application of the Case Definition in a Regional Health Authority in BC (oral presentation)	Louis Wong Tara Leigh Donovan Janie Nichols	IPAC Canada	2017

Presentation Title	Individual	Conference	Date
Developing a Dynamic, Integrated, Web-Based Surveillance System for Fraser Health (oral presentation)	Louis Wong Vladlena Abed Tara Donovan	BCPSQC Quality Forum	
Evaluating the Efficacy of UVGI Technology in Reducing HAIs (poster)	Petra Welsh Fuad Ibrahimov Ruth Dueckman Dr. Elizabeth Brodkin	BCPSQC Quality Forum	2017
Contamination of Sinks and Drains With Gram-Negative Bacteria: Solutions Through Collaboration (oral presentation)	Dr. Elizabeth Brodkin Dr. Allison McGeer	The Ontario Public Health Convention	2017
Application of Genome Sequencing for Validation of a Cluster of *Bla*$_{ndm}$ Producing *Klebsiella Pneumoniae* in British Columbia (poster)	Louis Wong Dr. Elizabeth Brodkin Tara Donovan Petra Welsh	Canadian Association for Clinical Microbiology and Infectious Diseases	2017

Acknowledgements

The IPC program would like to acknowledge the important partnerships shared with the site and program clinical care teams and the significant contribution they provided to accomplish various IPC initiatives across the organization. We acknowledge the Fraser Health Executive Team, medical microbiologists, medical program directors, physicians, executive directors, site-based directors of clinical operations, managers, and all healthcare providers. We look forward to continued collaboration to address areas where HAIs continue to impact patients and their families. It is a privilege to work with dedicated, compassionate and knowledgeable staff throughout the organization. Special thanks go to:

- BC Centre for Disease Control Public Health Laboratory
- BC Patient Safety and Quality Council
- BISS and General Managers of P3 facilities and all Environmental Services staff
- Colleagues from other provincial health authority IPC programs
- Infection Prevention and Control (IPAC) – IPAC-BC
- Crede Technologies

- Fraser Health & Business Analytics team
- Facilities Maintenance & Operations
- BC Clinical and Support Services
- Corporate IMIT Services
- Human Resources People Services
- Medical Health Officers
- Ministry of Health Services
- Pharmacy Services
- Provincial Infection Control Network (PICNet) of BC
- Quest University co-operative student (Katherine Hosford for contributions to alert and outbreak reporting for CDI/GI and RI and Fraser Health hand hygiene initiatives)
- Simon Fraser Health Sciences co-operative students (Amani Kafeety, Barbara Stroud, and Angel Kennedy for contributions to Fraser Health hand hygiene initiatives)
- Simon Fraser Computer Science co-operative student (Tina Tran for her contribution to alert and outbreak reporting for CDI/GI and RI)
- Workplace Health & Safety.

Healthcare Associated Infection (HAI) Indicators

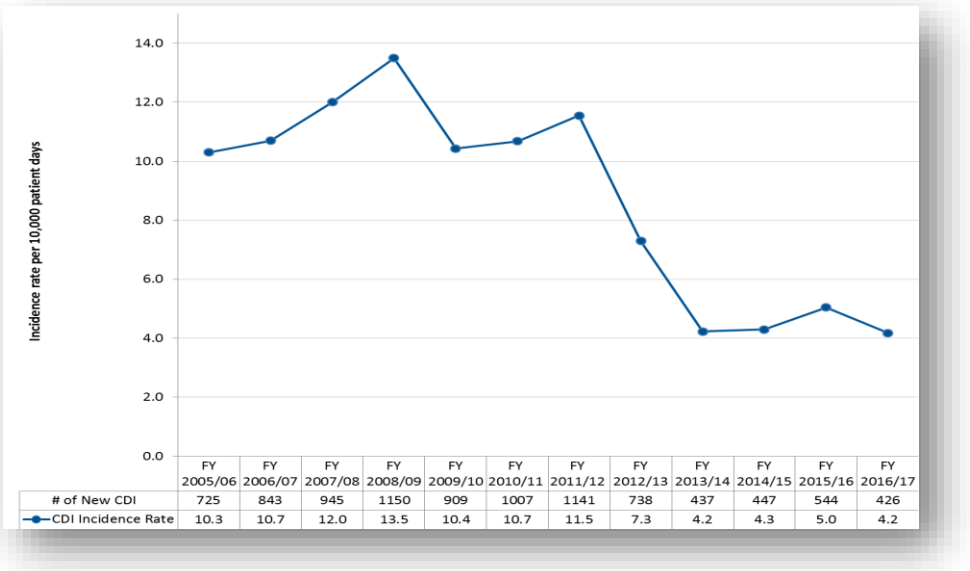
Clostridium difficile Infection (CDI)

Status	Target	Actual (2016/17)	Preferred Direction
●	≤ 6*	4.2*	⬇

*cases per 10,000 patient days

CDI is one of the most commonly acquired HAIs in industrial countries. CDI is often related to antimicrobial therapy, which alters the normal bacteria found in the gastrointestinal tract. CDI may be a mild infection or can present as massive diarrhea that may be difficult to control, with the potential for toxic megacolon, sepsis and even death.

A CDI incidence rate of ≤ 6.0 cases per 10,000 inpatient days was the established annual target for Fraser Health for 2016/17 fiscal year. The overarching goal is a reduction in the CDI rate year over year. The Fraser Health rate of new CDI for 2016/17 decreased from the previous fiscal year from 5.0 (95% CI: 4.6–5.4) to 4.2 (95% CI: 3.7–4.7) cases per 10,000 patient days (Figure 1). Moreover, this represents a 22% decrease in the number of facility-associated CDI cases. There is no statistically significant difference in the incidence of CDI in 2016/17 compared to the previous year.



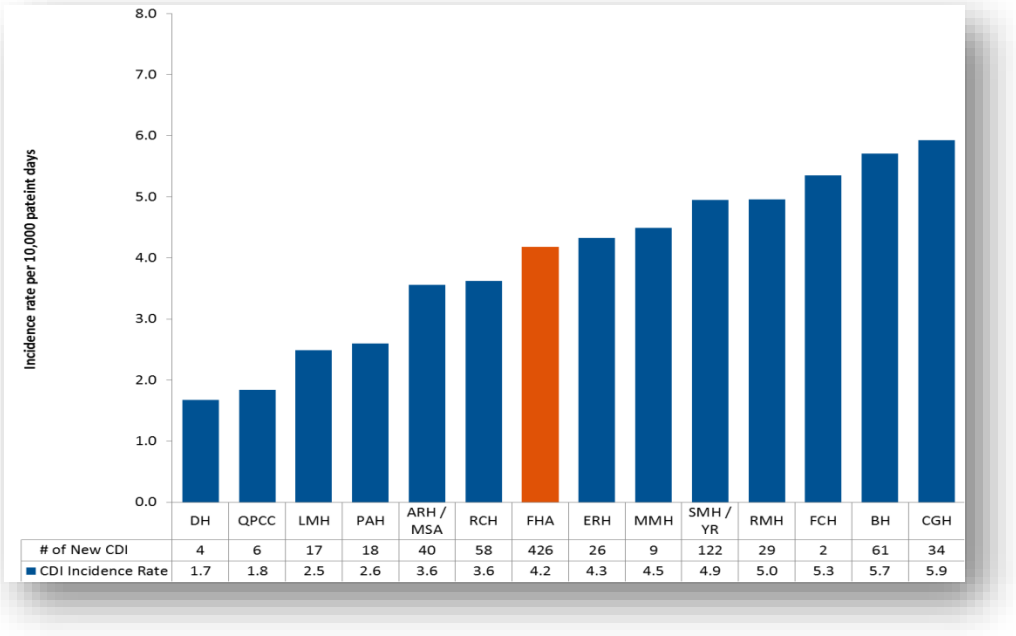
	FY 2005/06	FY 2006/07	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
# of New CDI	725	843	945	1150	909	1007	1141	738	437	447	544	426
CDI Incidence Rate	10.3	10.7	12.0	13.5	10.4	10.7	11.5	7.3	4.2	4.3	5.0	4.2

Source: Fraser Health CDI Surveillance Database, extract June 29, 2017

Figure 1: Number of new CDI and facility-associated CDI incidence rate per 10,000 patient days, by fiscal year for Fraser Health

In 2016/17, all Fraser Health acute care sites met the annual target of ≤ 6.0 new CDI cases per 10,000 patient days (Figure 2). The CDI incidence rates among Fraser Health sites ranged from 1.4 new cases at DH to 5.9 new cases at Chilliwack General Hospital (CGH) per 10,000 patient days (Figure 2).

Caution must be taken when interpreting rates because one case can result in a display of an inflated rate for facilities and programs with a small number of beds and patient days (e.g., FCH). An increase of one or two cases can lead to a high facility rate. Moreover, additional factors that could account for the higher incidence of CDI include, but are not limited to, congestion and over-capacity, as some sites serve patients with higher acuity who likely experience comorbidities, health complications, and critical illnesses and require antibiotic therapy, which can pose an increased risk of CDI.



Source: Fraser Health CDI Surveillance Database, extract June 29, 2017

Figure 2: Number of new CDI and facility-associated CDI incidence rate, by Fraser Health site, 2016/17

CDI Reduction Strategies

Patients with CDI are managed on specific precautions to prevent transmission of CDI to patients and staff. This includes adherence of best practices for hand hygiene, decluttering, donning and doffing personal protective equipment, dedicated medical

devices and patient care equipment and an escalated series of environmental cleaning and disinfection. In addition, the following strategies were implemented:

- Fraser Health Patient Safety Priorities: Consultation, communication and support of improvement initiatives as part of the Fraser Health Patient Safety Priorities for CDI and hand hygiene
- CDI Action Plans: Targeted support and improvement work for units in acute care sites that are at highest risk for CDI transmission (i.e., vulnerable units)
- Ultra-Violet Light Germicidal Irradiation (UVGI): Trialed a UV light disinfection system as an adjunct to the regular cleaning and disinfection of patient rooms: patients are relocated into an appropriate holding area, the patient bathroom and the room are cleaned and disinfected with the UV device, the linens and cubicle curtains are replaced and then patients are returned to the room
- CDI Quality Assurance Review: An independent evaluation of adherence to the CDI case definition for quality assurance purposes and to evaluate the assessment process in a new surveillance system, included a random sampling of CDI cases and non-cases
- CDI/AMS/Pharmacy QI Project: Developed a CDI and antimicrobial stewardship (AMS) project in collaboration with Fraser Health's AMS Medical Director and Pharmacy that reviews all patients diagnosed with CDI, looking for gaps in management; where indicated, cases are escalated to a clinical pharmacist
- Fecal Transplant: Develop and support a fecal transplantation program at Ridge Meadows Hospital (RMH) for patients with chronic, recurring CDI, with future implementation across Fraser Health.

Infection Prevention and Control Spotlight

In April 2016, BH IPCPs identified a cluster of CDI cases closely related by geographic location within a period of two months. Upon investigation, they hypothesized a link between CDI cases and the patients' environment.

To resolve this issue and to prevent patients from getting an infection, BH IPCPs collaborated with Housekeeping services and healthcare providers to identify gaps in practice and implemented the following initiatives:

- Changed housekeeping shift start time to 0700, allowing for a second daily clean to occur within eight hours as per the IPC guidelines enabling housekeeping to pick up linen and garbage from overnight use and clean high-touch surfaces, common areas and patient rooms in a timely manner. This initiative decreases the number of bacteria living on surfaces in the unit that healthcare workers may transfer to patients.
- Changed patient transport procedures so patients are transferred on a clean stretcher or wheelchair; this prevents contamination of the new location.
- Changed floor cleaning solution to Oxivir Plus (Accelerated Hydrogen Peroxide), a disinfectant that is effective against a broader spectrum of microbes present in the hospital environment.
- Cleaned all mattresses in the room and the patient bathroom when a CDI patient is transferred from a multi-bed room; this will help to minimize *C. difficile* organisms in adjacent bed spaces and the room environment.

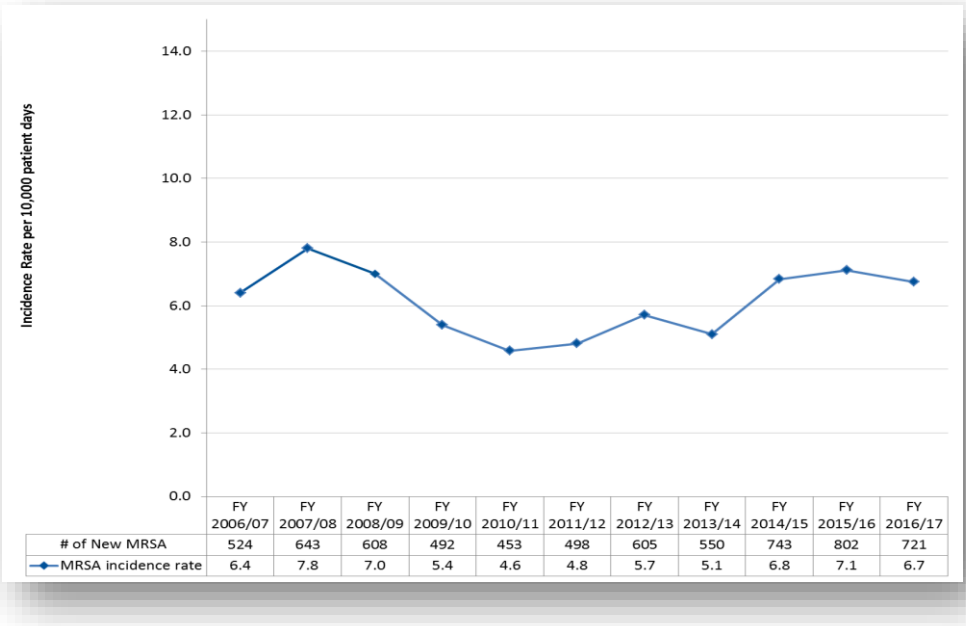
Methicillin-Resistant *Staphylococcus aureus* (MRSA)

Status	Target	Actual (2016/17)	Preferred Direction
▲	≤7.0*	6.7*	⬇

*cases per 10,000 patient days

Methicillin-resistant *Staphylococcus aureus* (MRSA) are strains of *staphylococci* that have become resistant to antimicrobial agents traditionally used to treat common skin and soft tissue infections (e.g., penicillins and cephalosporins). MRSA may be found in wound, skin, soft tissue and bone infections as well as sites where foreign bodies have been inserted. Antimicrobial resistance makes these infections difficult to treat and causes increased length of hospital stay and increased morbidity and mortality.

An MRSA incidence rate of ≤ 7.0 cases per 10,000 inpatient days was the established annual target for Fraser Health for 2016/17 fiscal year. The goal is a reduction in the MRSA rate year over year. The Fraser Health rate of new MRSA for 2016/17 decreased from the previous fiscal year of 7.1 (95% CI: 6.6–7.6) to 6.7 (95% CI: 6.3–7.1) cases per 10,000 patient days (Figure 3). The MRSA incidence rate decreased by 5.6% from 2015/16 to 2016/17.

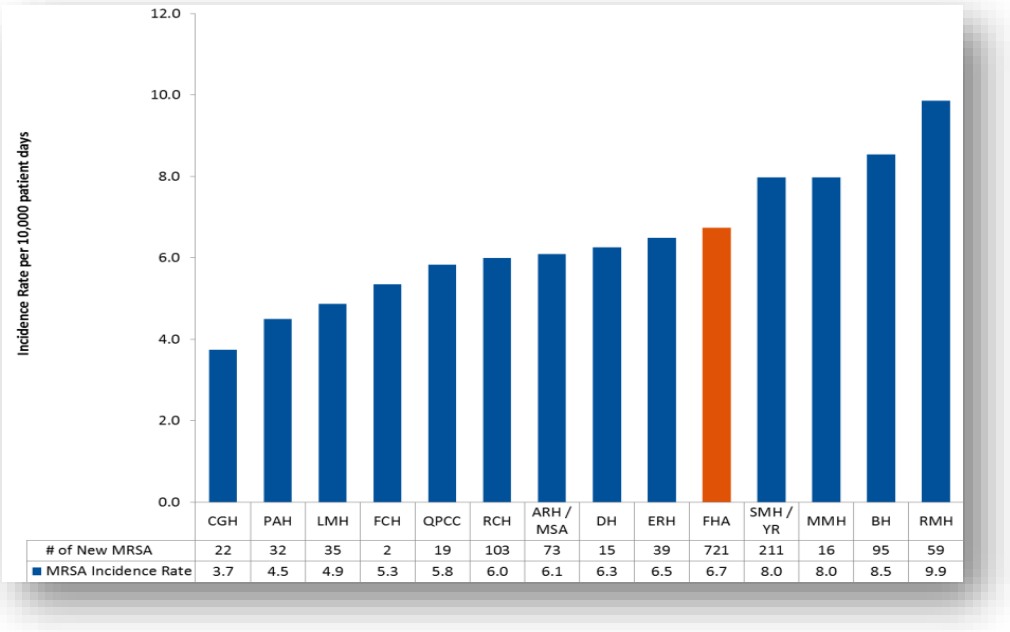


	FY 2006/07	FY 2007/08	FY 2008/09	FY 2009/10	FY 2010/11	FY 2011/12	FY 2012/13	FY 2013/14	FY 2014/15	FY 2015/16	FY 2016/17
# of New MRSA	524	643	608	492	453	498	605	550	743	802	721
MRSA incidence rate	6.4	7.8	7.0	5.4	4.6	4.8	5.7	5.1	6.8	7.1	6.7

Source: Fraser Health iTracker Database MRSA Surveillance Module, July 7, 2017

Figure 3: Number of new MRSA and facility-associated MRSA incidence rate per 10,000 patient days by fiscal year for Fraser Health

In 2016/17, the MRSA incidence rate was highest at RMH (Figure 4). The MRSA incidence rates among Fraser Health sites ranged from 3.7 new cases at CGH (22 MRSA) to 9.9 new cases at RMH (59 MRSA) per 10,000 patient days (Figure 4).



	CGH	PAH	LMH	FCH	QPCC	RCH	ARH / MSA	DH	ERH	FHA	SMH / YR	MMH	BH	RMH
# of New MRSA	22	32	35	2	19	103	73	15	39	721	211	16	95	59
MRSA Incidence Rate	3.7	4.5	4.9	5.3	5.8	6.0	6.1	6.3	6.5	6.7	8.0	8.0	8.5	9.9

Source: Fraser Health iTracker Database MRSA Surveillance Module, July 7, 2017

Figure 4: Number of new MRSA and facility-associated MRSA incidence rate by Fraser Health site, 2016/17

MRSA Reduction Initiatives

In addition to contact precautions for MRSA (including best practices for hand hygiene, correct donning and doffing of personal protective equipment and enhanced environmental cleaning), the following new strategies have been actioned to support MRSA reduction:

- Electronic Surveillance System: An automated, electronic IPC surveillance system for MRSA has been implemented that collates information from disparate Meditech modules into one comprehensive system and enables practitioners to readily access required information and determine HAI case status with minimal data entry
- Patient Engagement: A collaboration with the Patient Voices Network along with patients at the bedside to ensure the IPC program and front-line staff are

incorporating patients' and families' voices and requests into IPC best practices and processes, with a focus on patient hygiene

- UV Devices: A trial of an ultra-violet (UV) light disinfection system as an adjunct to the regular cleaning and disinfection of patient rooms: patients were relocated into an appropriate holding area, the patient bathroom and the room were cleaned and disinfected with the UV device, the linens and cubicle curtains were replaced and patients were returned to the room
- MRSA Action Plans: Units that are at highest risk for CDI and MRSA transmission (i.e., vulnerable units) are targeted individually to support improvement work.

Infection Prevention and Control Spotlight

Carbapenemase-Producing Organisms (CPO)

Status	Target	Actual 2015/16	Actual 2016/17
	Reduction in transmissions	18*	9*

* number of newly identified cases

Carbapenems are a family of antibiotics used to treat serious infections caused by Gram-negative bacteria that are resistant to other antibiotics. Recently, some bacteria have become resistant to carbapenems through the production of enzymes that break them down; these are known as carbapenemase-producing organisms (CPO). CPO can arise through the transfer of carbapenemase genes from other bacteria by means of plasmids.

There is potential for infection when CPOs move from the GI tract into other body spaces: for example, wounds, the bladder, respiratory tract or bloodstream. When organisms that are resistant to carbapenem antibiotics cause infections, there are few treatment choices available. Carbapenem-resistant bacteria have become common in some parts of the world, and patients who travel to those areas may return home colonized with CPO, particularly if they were hospitalized while abroad. When colonized patients enter Fraser Health hospitals, other patients may be put at risk of acquiring the same organisms. The environment can become contaminated with these organisms, providing another source of spread.

In fiscal year 2016/17, 53 patients with CPO were newly identified in Fraser Health. Most of these cases (67.9%) were associated with healthcare outside of Canada, while 9 (17.0%) were likely nosocomial (Table 2). The majority of newly identified cases reported in FY2016/17 were colonizations (84.9%) (Table 3).

Table 2. Patients with CPO in Fraser Health, by Epidemiological Source and Fiscal Year

Fiscal Year	Healthcare Associated		Travel w/Healthcare		Travel Only		Undetermined		Total
2013/14	41	(62.1%)	18	(27.3%)	0	(0.0%)	7	(10.6%)	66
2014/15#	26	(46.4%)	19	(33.9%)	3	(5.4%)	8	(14.3%)	56
2015/16	18	(26.9%)	37	(55.2%)	3	(4.5%)	9	(13.4%)	67
2016/17	9	(17.0%)	36	(67.9%)	1	(1.9%)	7	(13.2%)	53

Source: Fraser Health MDRO Surveillance Database, extract May 31, 2017
excludes cases attributed to other HAs

Table 3. Patients with CPO Infections versus Colonization in Fraser Health by Fiscal Year

Fiscal Year	Infections		Colonizations		Total
2013/14	21	(31.8%)	45	(68.2%)	66
2014/15#	11	(19.6%)	45	(80.4%)	56
2015/16	7	(10.4%)	60	(89.6%)	67
2016/17	8	(15.1%)	45	(84.9%)	53

Source: Fraser Health MDRO Surveillance Database, extract May 31, 2017
excludes cases attributed to other HAs

CPO Reduction Strategies

In addition to enhanced contact precautions for patients with CPO (best practices for hand hygiene, correct donning and doffing of personal protective equipment, one-to-one nursing care, dedicated medical devices and patient care equipment, enhanced environmental cleaning and patient cohorting where possible), the following new strategies have been actioned to reduce transmissions of CPO:

- WGS: The IPC program collaborated with the BCCDC PHL to develop a whole genome sequencing (WGS) tool to investigate clusters and better understand risk factors for CPO acquisition
- CPO Screening Questions: A second CPO screening question was implemented for admitted patients who have travelled without healthcare to specific CPO-endemic countries
- Cohort Unit: Created an additional space that allows for cohorting patients, where possible, to minimize transmission and optimize use of healthcare resources.

IPC Best Practice

Hand Hygiene Compliance

Status	Target	Actual (2015/16)	Actual (2016/17)
	80% compliance	87% compliance	86% compliance
	Increase in observations	135,258	130,707

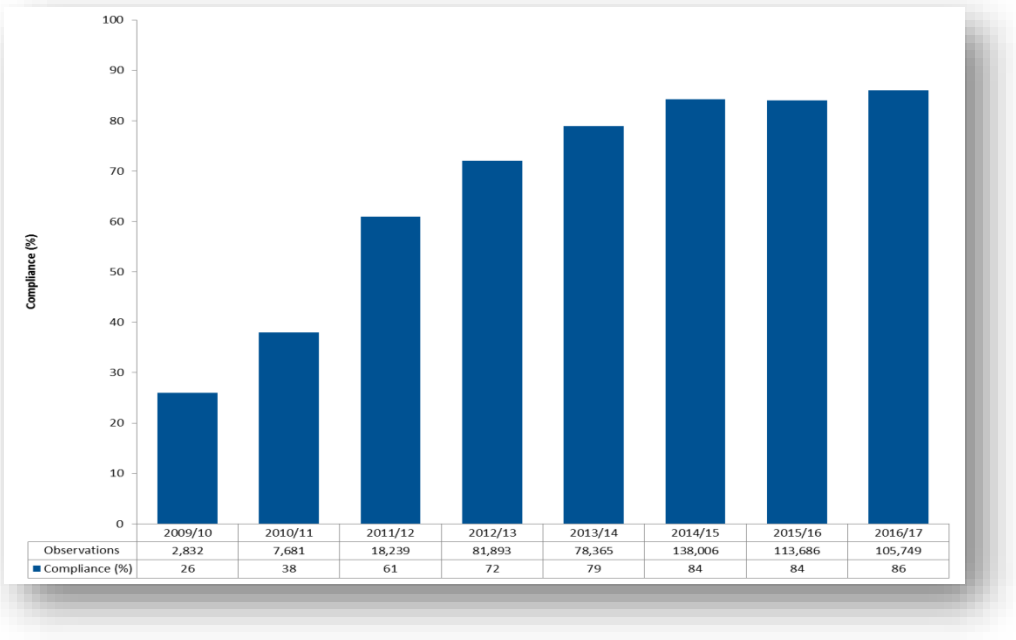
Hand hygiene is a critical patient safety initiative and one of the most effective, well-evidenced measures to reduce the transmission of HAIs worldwide. Hand hygiene education and training is being provided across Fraser Health through new employee orientation sessions as well as on-the-job training and in-services provided by IPCPs.

A total of 105,749 hand hygiene practice observations were completed in 2016/17 for Fraser Health acute care sites, with a total compliance of 86% (Table 4), compared to a total of 113,686 observations and 84% compliance in fiscal year 2015/16 (Figure 5) – a decrease of 7% in observations from the previous fiscal year.

Table 4. Hand Hygiene Compliance by Type of Fraser Health facility, Fiscal Year 2016/17

Fiscal Year 2016/17	Fraser Health Overall	Acute Care	Residential Operated	MHSU	Home Support / Health	Public Health/ Primary Care	Residential Contracted
Observations	130,707	105,749	16,400	2,270	279	3,225	2,784
Compliance	86%	86%	87%	84%	88%	87%	58%

Source: Fraser Health FormAudit Hand Hygiene Module, extract June 29, 2017

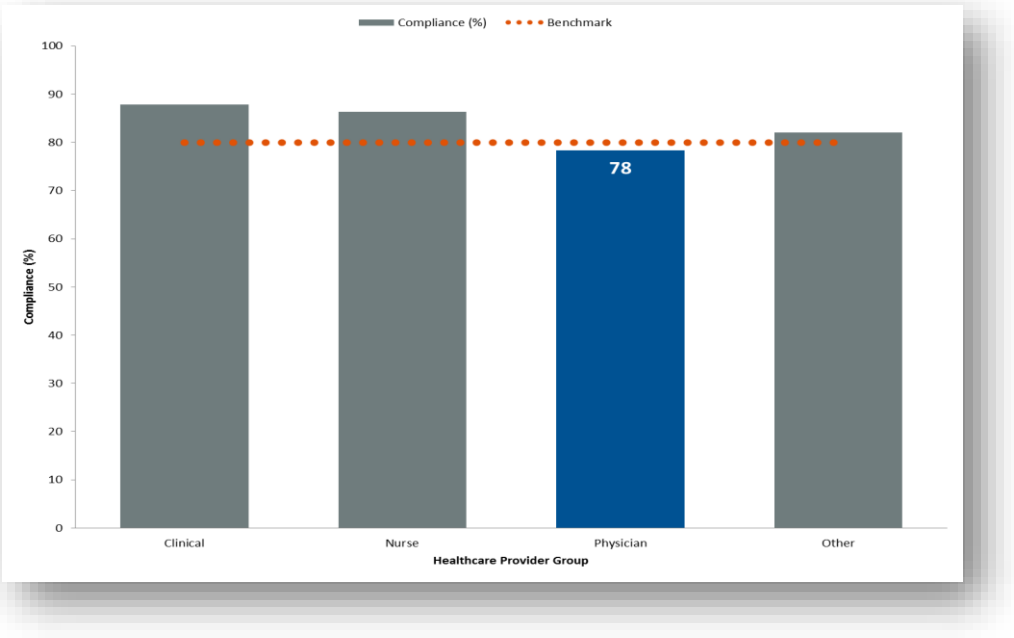


Source: Fraser Health FormAudit Hand Hygiene Module, extract June 29, 2017

Figure 5: Comparison of hand hygiene compliance by fiscal year in Fraser Health acute care sites

Fraser Health Healthcare Provider Group

The compliance by healthcare provider group in fiscal year 2016/17 is presented in Figure 6. Hand hygiene compliance among physicians, which include medical residents/ students, continues to improve, but is below 80% and represents a 2% decrease from FY2015/16. The majority of the observations collected continue to be in the nursing category, which aligns with the fact that this group makes up the largest proportion of healthcare employees.



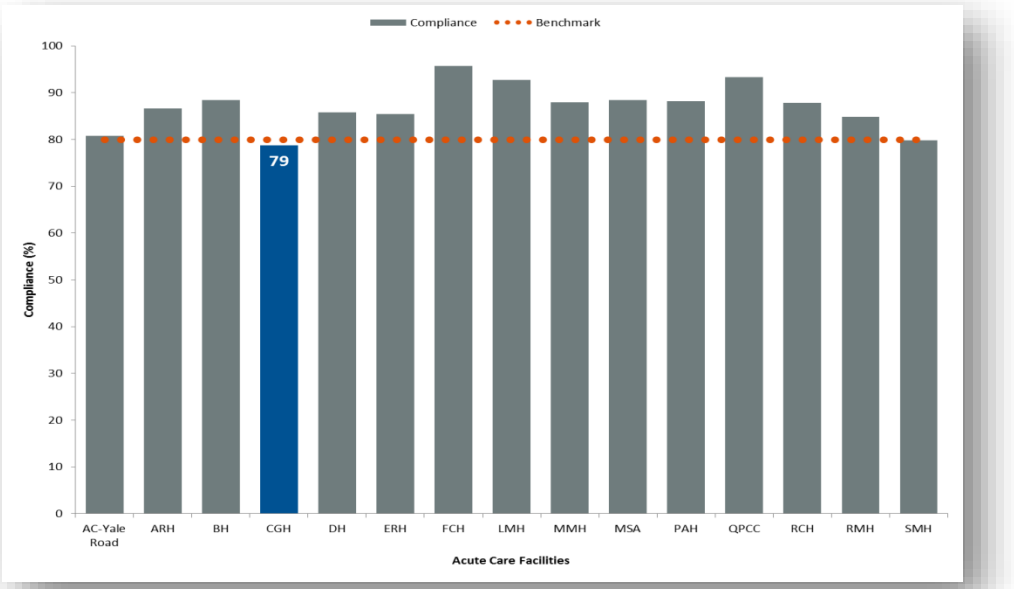
Source: Fraser Health FormAudit Hand Hygiene Module, extract June 29, 2017

Figure 6: Hand hygiene compliance by healthcare provider group for Fraser Health overall, 2016/17

Fraser Health Sites

The 2016/17 annual goal for hand hygiene compliance in Fraser Health was to increase compliance. Fraser Health achieved and surpassed the Ministry of Health and provincial target of 80%. With 86% overall compliance, the majority of acute care sites (range: 79%–96%) met or exceeded the Fraser Health hand hygiene compliance target. Moreover, Fraser Health saw an increase in compliance in fiscal year 2016/17 compared to the previous fiscal year.

All Fraser Health acute care sites achieved the Fraser Health target of 80% compliance for fiscal year 2016/17, except for CGH (Figure 7).



Source: Fraser Health FormAudit Hand Hygiene Module, extract June 29, 2016

Figure 7: Hand hygiene compliance by Fraser Health site, 2016/17

Hand Hygiene Improvement Strategies

In addition to the regular audits and hand hygiene improvement work that is conducted by the sites and community programs, the following new initiatives were put in place to support hand hygiene improvement work:

- Fraser Health Patient Safety Priorities: Consultation, communication and support for improvement initiatives addressing two of the Fraser Health Patient Safety Priorities: CDI and hand hygiene
- Patient Hand Hygiene: Patient surveys to understand patient preferences regarding hand-cleaning products, supporting patients to clean their hands and making products available at the patient bedside
- Fraser Health Hand Hygiene Program: Revisions to the Fraser Health hand hygiene program, including revising the Fraser Health Hand Hygiene Policy and Clinical Practice Guidelines and auditing methodology
- Electronic Monitoring System: Exploring electronic hand hygiene compliance monitoring systems as a quality improvement tool to support areas requiring an

additional focus on hand hygiene improvement, including CDI and MRSA vulnerable units

- Audits in the Community: Development of a risk-based analysis tool and supporting material to evaluate hand hygiene compliance in the community, primary care, outpatient areas and home health
- Ministry of Health Hand Hygiene Guidelines: Participation in a provincial hand hygiene working group to update the BC Ministry of Health Hand Hygiene Policy and Best Practices for Hand Hygiene in All Health Care Settings and Programs.

Infection Prevention and Control Spotlight

At Chilliwack General Hospital (CGH), the IPCPs have worked on several quality improvement strategies to create positive patient outcomes and patient experiences in collaboration with healthcare providers. They provide education for staff, using huddles and in-services as well as participating in a 2-day Chilliwack Health Services Skills and Information Expo. The IPCPs created and utilized an infection control jeopardy game and a personal protective equipment matching game to educate and engage staff. They also attend staff meetings to answer questions and concerns regarding infection prevention and control with a focus on *C. difficile* transmission.

Every month, the IPCPs send out the *Infection Prevention and Control Minute,* which is a one-page newsletter that provides education and information about infection control issues. As part of this newsletter, the unit with the highest hand hygiene rate for that month is announced and receives the coveted prize of 'Harvey the Hand Hygiene Gnome'. The unit staff poses with Harvey for a photo that's displayed in the *Infection Prevention and Control Minute*. Harvey the Gnome is very popular, creating health competition among unit staff and helping to spread awareness about the need for effective hand hygiene.

To address some of the infection control issues and concerns at CGH, the In-Hospital Transfer and Isolation Procedure Working Group was created. This working group is led by the IPCPs and includes the Patient Care Coordinators and Clinical Nurse Specialists from the medical, surgical and emergency units. The group focuses on improving isolation and transportation of patients within CGH as well as improving communication about the isolation/contact precaution needs of patients. The IPCPs also perform glow germ audits (i.e., UV light to illuminate touched surfaces) on shared equipment to monitor and spread awareness regarding the need for cleaning shared equipment between patients.

World Hand Hygiene Day is a highlight at CGH, with hand hygiene activities and education at the front entrance for patients, visitors and families along with a roving education cart, including treats and prizes for the staff.

Outbreak Management

Fraser Health monitors and tracks the total number of gastrointestinal illness (GI) and respiratory illness (RI) outbreaks and their impact on acute care sites across Fraser Health, including the pathogen responsible, total number of outbreaks declared and the month and facility associated with outbreak declaration.

Alert notifications were implemented in 2013/14 to reduce the number of outbreaks (i.e., GI, CDI, or RI) in Fraser Health acute care sites. Declaring an alert enables an IPCP to implement enhanced cleaning and other initiatives aimed to reduce the bio-burden on the unit, thus reducing transmission.

The IPC program began declaring and reporting CDI outbreaks in acute care sites in 2012. In Fraser Health, a CDI outbreak is defined as three or more new healthcare-associated cases of CDI attributed to a single unit (as defined by geographical area, nursing station, and unit mnemonic) in a 7-day period.

In 2014/15, the IPC program developed an RI policy with clinical practice guidelines for management of RI cases, alerts and outbreaks. An RI outbreak is declared in consultation with the IPC Executive Medical Director when there are two or more epidemiologically linked healthcare-associated RI cases on a unit (as defined by geographical area, nursing station and unit mnemonic) within seven days.

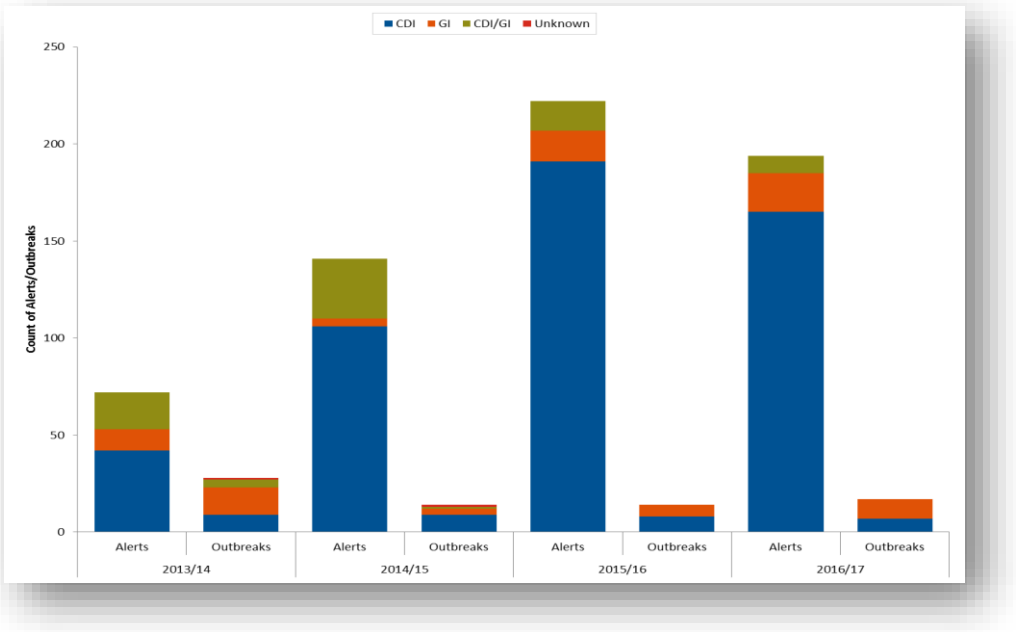
Status	Target	Actual (2015/16)	Actual (2016/17)
■	Reduction in number of CDI outbreaks	8	7

GI/CDI Outbreaks and Alerts

The outbreak management goal for the organization is to decrease the number of CDI outbreaks from year-to-year in acute sites. The number of outbreaks in 2016/17 increased by three compared to 2015/16, which represents an increase of 21% (Figure 8). While the number of GI/CDI outbreaks increased in 2016/17, the number of CDI outbreaks has remained consistent since 2013/14 (range: seven to nine outbreaks per fiscal year).

The number of alerts has steadily increased since fiscal year 2013/14; however, in 2016/17, the number of GI alerts issued by Fraser Health acute care sites decreased by 13% (Figure 9). In fiscal year 2016/17, 194 alerts were issued, with the majority (85%) of alerts issued for CDI. This increase could be attributed to an improvement in the recognition and

communication of GI/CDI alerts in the 2015/16 fiscal year. The number of GI alerts continued to fluctuate over the last couple of fiscal years, with 20 GI alerts in 2016/17 compared to four GI alerts in 2014/15.

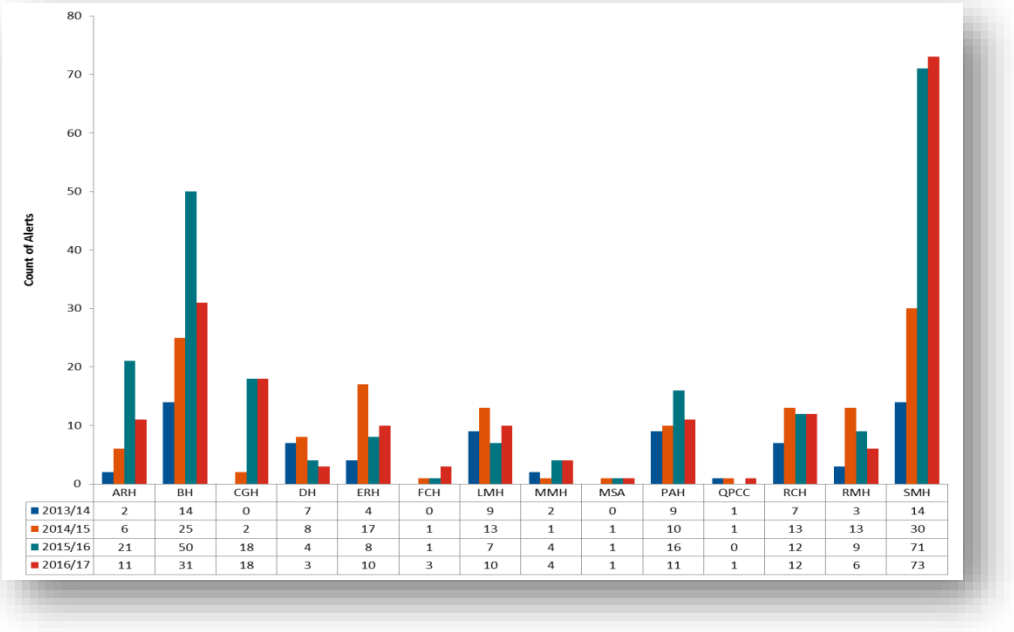


Source: Fraser Health Outbreak and Alert Database, extract July 6, 2017

Figure 8: Number of GI/CDI alert and outbreak notifications issued for Fraser Health acute care sites by fiscal year and etiological agent

Alerts continue to be predominately issued by larger acute care sites (Figure 9). At larger acute care sites, there are more beds and thus more patients, potentially increasing the risk of transmission of CDI and GI. Further, the patient population may be at greater risk of contracting CDI due to health complications and/or treatment needs, including antibiotics, which are risk factors for acquiring CDI.

The average duration of alerts remained unchanged in fiscal year 2016/17 compared to previous fiscal years. In fiscal year 2016/17, alerts lasted an average 12.0 days, while the average duration of a GI outbreak lasted an average of 4.8 days.



	ARH	BH	CGH	DH	ERH	FCH	LMH	MMH	MSA	PAH	QPCC	RCH	RMH	SMH
2013/14	2	14	0	7	4	0	9	2	0	9	1	7	3	14
2014/15	6	25	2	8	17	1	13	1	1	10	1	13	13	30
2015/16	21	50	18	4	8	1	7	4	1	16	0	12	9	71
2016/17	11	31	18	3	10	3	10	4	1	11	1	12	6	73

Source: Fraser Health Outbreak and Alert Database, extract July 6, 2017

Figure 9: Number of GI/CDI alerts issued by Fraser Health acute care sites and fiscal year

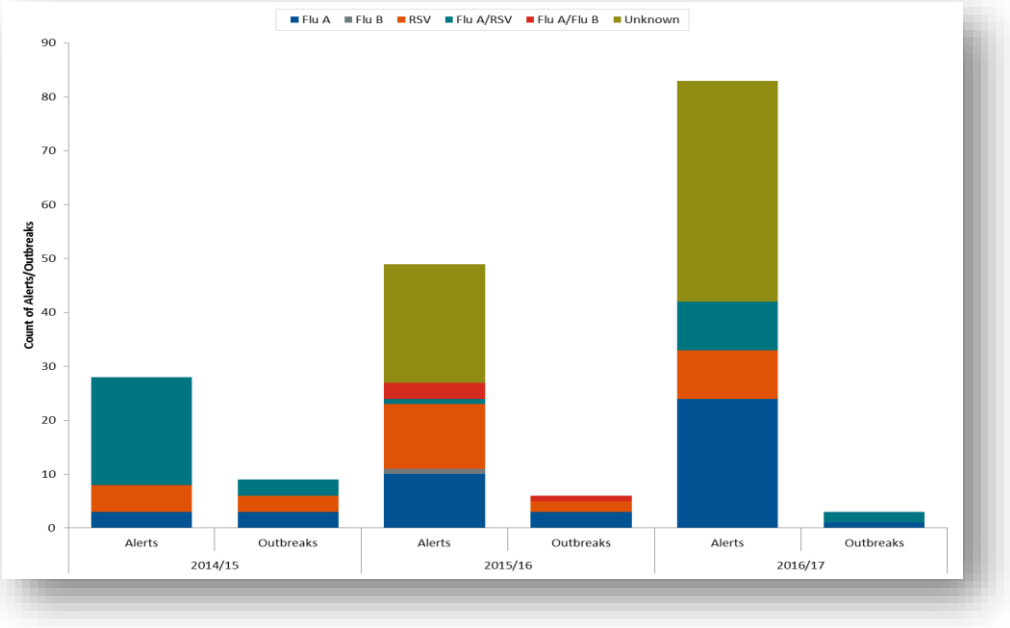
In fiscal year 2016/17, there were 17 GI/CDI outbreaks: 10 outbreaks were attributed to GI, and seven outbreaks were attributed to CDI. There was a 40% increase in GI outbreaks in 2016/17 compared to 2015/16. The number of GI outbreaks has been increasing in recent years from a low of three in 2014/15. The 17 outbreaks were reported in eight Fraser Health acute care sites. RCH and PAH accounted for the majority of GI outbreaks in 2016/17, with each accounting for 24%.

Respiratory Illness Outbreaks and Alerts

In fiscal year 2016/17, there were three RI outbreaks in Fraser Health acute care sites: one Influenza (Flu) A and two combined Influenza A/RSV. This represents a 50% reduction compared to fiscal year 2015/16. The three RI outbreaks that occurred in 2016/17 were at MMH, QPCC, and SMH.

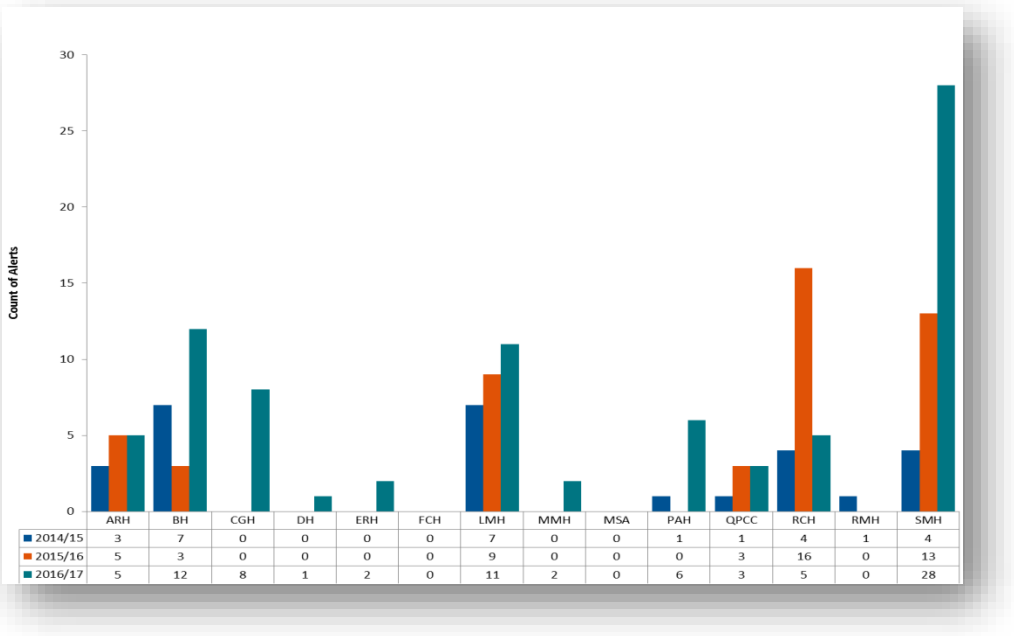
There was an increase in the number of RI alerts issued in 2016/17 (Figure 10), which corresponded with an increase in duration of alerts, which was consistent with previous years. The average length of an RI alert for 2016/17 was 15.1 days. This may indicate that alerts were in place for a longer duration to reduce the number of cases and, in turn, decreased the number of outbreaks. The number of RI alerts issued from 2014/15 to

2016/17 by acute care sites is presented in Figure 11. In 2016/17, four sites issued RI alerts for the first time. These sites included CGH, DH, ERH and MMH. This increase may be due to increased influenza activity in the community, increased influenza testing, increased bioburden and facilities being at/over capacity.



Source: Fraser Health Outbreak and Alert Database, extract July 6, 2017

Figure 10: Number of RI alerts and outbreak notifications issued by Fraser Health acute care sites and fiscal year and etiological agent



	ARH	BH	CGH	DH	ERH	FCH	LMH	MMH	MSA	PAH	QPCC	RCH	RMH	SMH
2014/15	3	7	0	0	0	0	7	0	0	1	1	4	1	4
2015/16	5	3	0	0	0	0	9	0	0	0	3	16	0	13
2016/17	5	12	8	1	2	0	11	2	0	6	3	5	0	28

Source: Fraser Health Outbreak and Alert Database, extract July 6, 2017

Figure 11: Number of RI alerts issued by Fraser Health acute care sites and fiscal year

Infection Prevention and Control Spotlight

The IPC Community Consultants assisted residential care facilities, including Mental Health and Substance Use, during influenza outbreaks. They provided consultation and support to residential care staff regarding infection prevention and control concerns related to outbreaks. The IPC Community Consultants facilitated safe moves during outbreaks, responding to a total of 42 requests for residents to move into a care home and for six registered residents to return home safely from another healthcare setting.

The IPC Community Consultants were instrumental in organizing and providing the annual Flu School sessions to staff of residential contracted facilities. In 2016, 87% of residential facilities attended one of the three Flu School sessions, and participation among facilities continues to rise each year.

The IPC Community Consultants participated in World Hand Hygiene Day, reinforcing the use of hand hygiene wipes for residents before meals and after toileting, and they were successful in making resident-specific hand hygiene products available to facilities. IPC Community Consultants also spent time certifying hand hygiene auditors in residential care, mental health and substance use facilities as well as home health clinics.

Outbreak Management Initiatives

- Outbreak Resource Toolkit: A newly developed outbreak resource toolkit with line-list and communication templates for IPC practitioners and healthcare providers to manage the outbreak and prevent further nosocomial transmission
- Outbreak Notification Module: A newly developed web-based module delivering IPC alert and outbreak notifications at acute care sites. The module provides a centralized location for ICPs to issue alert and outbreak notifications in a standardized format across acute care sites
- Flu School: In preparation for the influenza season, the community program developed and delivered IPC presentations as part of Flu School, partnering with Public Health to support the respiratory outbreaks in contracted and owned-and-operated Fraser Health facilities
- Outbreak Transfers for Residents: The IPC community program provided consultation and support for transfers of patients into residential care during RI Scenario A outbreaks.

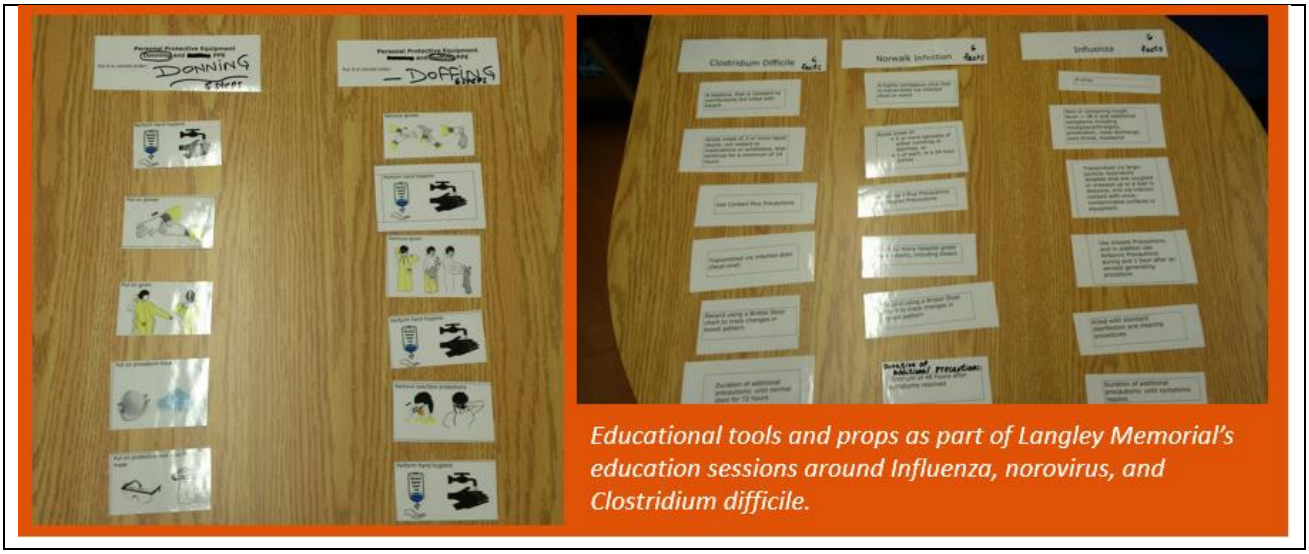
Outbreak Lessons Learned for GI/CDI Outbreaks in 2016/17

- De-Cluttering: Keeping the unit and patient rooms clutter free allows for housekeeping to clean adequately and efficiently
- Hand Hygiene and Personal Protective Equipment: Attention to hand hygiene for staff, patients and visitors is vital in halting transmission of pathogens. Support provided to staff in their communication with visitors on expectations of hand hygiene and personal protective equipment compliance
- Restricting Food: Zero-tolerance for eating and drinking in patient care areas or the nursing station
- Antimicrobials: Encourage staff to ensure that affected patients are being treated appropriately and receive the ordered antibiotic treatment
- Timely Precautions: Quick identification and application of additional precautions for suspect GI cases by unit staff reduced the number of confirmed/ suspect cases on the unit
- Communication: Daily clear communication by Housekeeping ensured effective teamwork with healthcare providers.

Outbreak Lessons Learned for Respiratory Outbreaks in 2016/17

- Pharmacy Support: Having pharmacists present on the daily outbreak management teleconference ensured effective and accurate management of confirmed cases and that patients receiving the appropriate antiviral and asymptomatic patients were receiving prophylactic doses
- IPCP Presence: Consistent IPC presence on the unit provided staff with support to manage the outbreak on the units and helped access and site leaders with admissions and discharges
- Daily Huddle: Daily huddle with staff to provide education about the importance of early identification of symptoms, isolation precautions, collecting specimens and environmental cleaning was integral to control and prevent future outbreaks.

Infection Prevention and Control Spotlight
The LMH IPCPs incorporated interactive activities during IPC education sessions in September through November 2016 to prepare point-of-care staff for respiratory and gastrointestinal illness among patients. Emphasis was given to the importance of best practice audits, influenza vaccination and collaboration between housekeeping services and point-of-care staff, since housekeeping plays an important role in keeping alcohol-based hand rub (ABHR) dispensers and masks available to the public and providing cleaning services for patient care areas. Each 30-minute education session focused on "3 Bad Bugs Facts: *C. difficile*, Norwalk, and Influenza", "Donning and Doffing", and "How to Find Infection Prevention Resource" (such as the A-Z table) on the Fraser Health intranet. Participants were shown steps to find resources on the intranet using a display board. Individual questions were answered during the session or debrief. The 3 Bad Bugs and donning/doffing activities were completed by participants by correctly placing the laminated cards with facts that pertained to the 3 Bad Bugs and Donning and Doffing under the correct organism heading. Two tables were used to accommodate 10-12 people per session for the hands-on activities. Handouts about the 3 Bad Bugs and How to Access Infection Prevention Resources were distributed to participants at the end of the session. In March 2017, LMH IPCPs facilitated scenario-based learning sessions with the Emergency Department. Both hands-on activities and scenario-based learning methods were appreciated by staff as evidenced by the feedback received directly from the participants and unit managers. The LMH IPCPs also introduced the "Tip of the Week" to point-of-care staff in Nov 2016. Topics for this initiative are chosen based on identified gaps in clinical areas. Tip of the Week is well received by readers and a formal evaluation via paper-based surveys was completed.



Educational tools and props as part of Langley Memorial's education sessions around Influenza, norovirus, and Clostridium difficile.

Additional 2016–2018 Service Plan Initiatives

The following bulleted lists highlight some of the excellent work completed by the IPC program as part of the 2016–2018 Service Plan, which have not been captured in other sections of this report. These lists are focused on (a) strengthen IPC as a regional program, (b) ensure evidence-based guidelines are put into practice, and (c) reduce healthcare-associated infections.

Strengthen IPC as a Regional Program

- RIPCO: Strengthen the IPC regional program through the Regional IPC Operations Council and though improved communication and collaborative decision making with the IPC clinical practice team, the IPC operational team and the acute care sites' infection control leadership, enabling the organization to collaborate on and respond quickly to emerging infection control issues
- CNS: Addition of a CNS role under the IPC operations stream of the program that has both regional and operational responsibility. This CNS role is to foster collaboration with multidisciplinary stakeholders and support the implementation of IPC best practice across the HA using clinical science-based improvement methodology and cultivating unit-based behaviour change initiatives
- IPC HR Plan: Update of the IPC human resource recruitment and orientation process for new IPCPs with standardization of the classroom orientation and on-site training with designated mentorship and evaluation.

Ensure Evidence-Based Guidelines are put into Practice

- Construction: Regional IPC Consultant support provided to the RCH redevelopment project; the ERH and LMH Emergency Departments, Renovation & Expansion; the LMH Tower expansion project; the RMH Medical Imaging and Maternity renovation and expansion; and the SMH Renal project development – Phase One. In addition, an IPC Consultant provided specific education sessions to IPCPs explaining how to complete an infection control risk assessment and how to deal with water and mould issues in facilities. The community team consulted on the design, planning, construction and commissioning for operated and contracted residential and MHSU facilities

- IPC Systems: Evaluation of an electronic system/technology to enhance IPC reporting and alerting: an off-the-shelf Infection Control technology was reviewed to assess whether the program would have improvements with consolidating information and streamlining identification of IPC-related challenges in order to promote timely action to mitigate transmissions and other related concerns within Fraser Health facilities
- TDG: Update to the residential care GI and RI outbreak toolkits to include an explanation of the requirements for Transportation of Dangerous Goods (TDG) to support the safe transfer of influenza specimens to testing laboratories
- IPC Community Program: Several documents, guidelines and frameworks developed by the IPC Community program, including an Accreditation toolkit for operated residential facilities, a framework and documents for the community manual, a Residential Care Visitor IPC Pamphlet, an IPC Education Module and a foot care document. Members provided input to the PICNet education working group and created IPC-related signs for acute care facilities in BC.
- Fraser Health Renal Program: An IPC Consultant provided consultation to the Renal program to improve IPC best practices. This included the development of a standard operating procedure and education for routine practices and additional precautions in acute care outpatient settings and hemodialysis units, along with initiatives to support hand hygiene audits and improvement work
- Environmental Cleaning Best Practices: Responded to the Ministry of Health by identifying gaps and timelines to correct these in order to complete Phase 1 recommendations of the Environmental Cleaning Best Practices communique that was issued from the Ministry of Health.

Reduce Healthcare-Associated Infections

- VRE Review: A review of patients with vancomycin-resistant enterobacteriaceae (VRE)-related infections who subsequently died in an effort to determine if there was an association between their infection and their death. These reviews are being carried out to assess the impact, if any, that resulted from a Fraser Health decision to stop screening patients for VRE colonization upon hospital admission in November 2012. The intent of the evaluation is to ensure there is no additional risk because of this change in practice.

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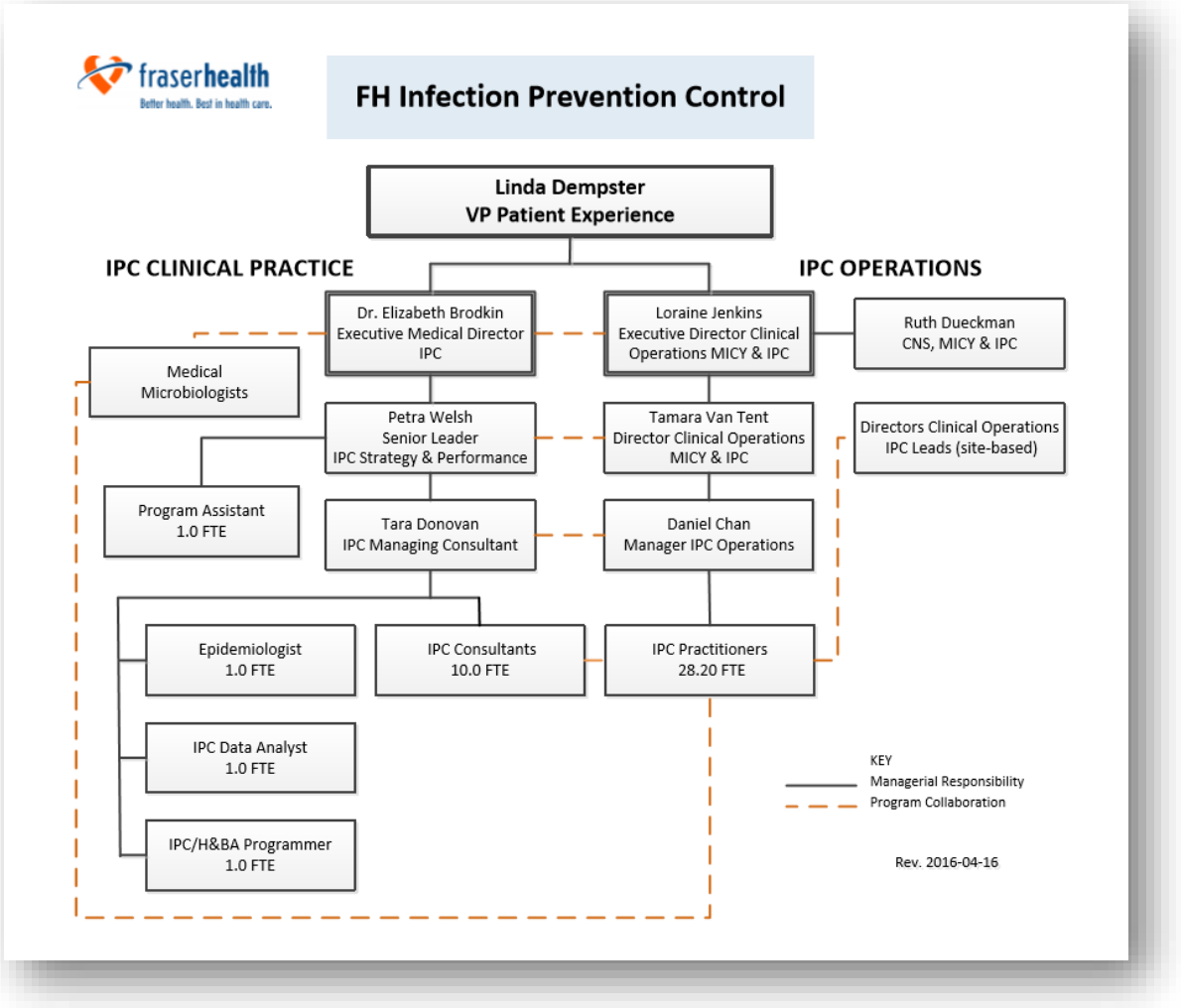
Appendices

Appendix A: Organizational Structure for the IPC Program



Appendix B: Abbreviations and Terminology

ABHR – Alcohol based hand rub
AC – Acute Care
AMS – Antimicrobial stewardship
Annual target – a goal that is set on a fiscal year basis
ARH – Abbotsford Regional Hospital
ARO – antibiotic-resistant organism
BC – British Columbia
BCCDC – British Columbia Centre for Disease Control
BCCDC PHL – BC Centre for Disease Control Public Health Laboratory
BCPSQC – BC Patient Safety Quality Council
BCPSQF - BC Patient Safety and Quality Forum
Benchmark – a point of reference for judging value, quality, change, or the like; standard to which others can be compared
BH – Burnaby Hospital
CGH – Chilliwack General Hospital
CI – confidence interval
CIC® – Certification in Infection Control
***Clostridium difficile* Infection (CDI) –** CDI is a micro-organism that produces a toxin that can cause diarrhea and serious illness of the gastrointestinal tract. Generally, *Clostridium difficile* (*C. difficile*) rarely causes problems in healthy people; however, CDI can be serious and even fatal, in people with co-morbid illnesses, the elderly, or who have weakened immune systems.
CNS – Clinical Nurse Specialist
CPO – Carbapenemase-producing organisms refers to any gram-negative bacilli (e.g., Enterobacteriaceae, *Pseudomonas aeruginosa*, *Acinetobacter baumanii*, etc.) that are resistant to carbapenem antibiotics via production of enzymes encoded for by resistance genes that hydrolyze carbapenems.
CSA – Canadian Standards Association
DH – Delta Hospital
ERH – Eagle Ridge Hospital

Facility-associated – a case that is acquired and identified at the same facility (i.e., nosocomial to the same facility)
Facility Type – a healthcare facility categorized by the range of services offered
FCH – Fraser Canyon Hospital
FY – Fiscal Year (April 1 to March 31)
GI – Gastrointestinal illness
H&BA – Health & Business Analytics
Hand Hygiene – preventing the spread of illness through washing hands with soap and water or cleaning hands with alcohol based hand-rubs.
Healthcare-associated Infections (HAI) *also Nosocomial Infections* **–** infections patients get while staying in any healthcare facility, which include micro-organisms from other patients, the environment, or staff—not to be confused with facility-associated infections, which are acquired and identified at the same facility (nosocomial to the same facility).
Healthcare-associated to Facility/Unit – the facility or unit where the case most likely contracted the causative organism. Based on if the patient spent 72 hours or longer where the infection was identified or the previous location where the patient spent 72 hrs or longer either during the current admission or the previous admission, prior to symptom onset.
HSP – Health Service Provider
IPC – Infection Prevention and Control
IPCP – Infection Prevention and Control Practitioners
Influenza-Like Illness (ILI) – acute onset of respiratory illness symptoms which are similar to influenza, but are usually caused by other viruses or bacteria. (http://medical-dictionary.thefreedictionary.com/influenza-like+illness)
Indicator – a statistical measurement that shows how well something is working or operating
JP/JPOCSC – Jim Pattison Outpatient Care and Surgery Centre
KPI – key performance indicator
LMH – Langley Memorial Hospital
Methicillin-resistant *Staphylococcus aureus* (MRSA) – *Staphylococcus aureus* is micro-organism that is normally found on the skin and in the nose of healthy people. Some strains have become resistant to the common antibiotics used to treat infections. MRSA is a type of *Staphylococcus aureus* that is resistant to antibiotics commonly used to treat skin and soft tissue infections, including penicillins and cephalosporins. *Staphylococcus aureus* can cause minor skin infections such as boils or infections in a surgical incision site.

MHSU – Mental Health and Substance Use
MICY – Maternal Infant Child and Youth
MMH – Mission Memorial Hospital
MSA – Matsqui-Sumas Abbotsford Hospital
Norovirus – are a group of non-enveloped, single-stranded ribonucleic acid (RNA) viruses that cause acute gastroenteritis. Noroviruses belong to the family *Caliciviridae* that comprises sapoviruses, which also causes gastroenteritis. Norovirus affects people of all ages. It is transmitted through food and water contaminated with feces or by person-to-person contact. (http://www.cdc.gov/norovirus/hcp/clinical-overview.html)
PAH – Peace Arch Hospital
PCR – Polymerase chain reaction
PICNet (Provincial Infection Control Network) – a collaborative group of healthcare professionals who aim to prevent and control healthcare associated infections. (http://www.picnetbc.ca)
QI – Quality improvement
QPC – Quality Performance Committee
QPCC – Queen's Park Care Centre
RCC – Residential Contracted (Health Service Provider)
RCH – Royal Columbian Hospital
RI – Respiratory infection
RIPCO – Regional Infection Prevention and Control Operations Council
RMH – Ridge Meadows Hospital
ROP – Required organizational practices
RSV – respiratory syncytial virus causes infection of the lungs and breathing passages and is a major cause of respiratory illness in children. RSV is easily spread by droplets containing the virus when someone coughs or sneezes. (http://kidshealth.org/parent/infections/bacterial_viral/rsv.html)
Source – the person or thing that gave the information
SMH – Surrey Memorial Hospital
TB – Tuberculosis
Trend – the general movement or direction of change
UV – Ultraviolet

UVGI – Ultraviolet germicidal irradiation
WGS – Whole genome sequencing

Appendix C: Fraser Health Acute Care Beds, FY2016/17

Facility	Facility Name	Total # of acute care patient beds
FCH	Fraser Canyon Hospital	10
MSA	Worthington Pavillion Subacute Unit (MSA)	25
MMH	Mission Memorial Hospital	45
DH	Delta Hospital	58
QPCC	Queen's Park Care Centre (acute care)	86
CGH	Chilliwack General Hospital	131
ERH	Eagle Ridge Hospital	154
RMH	Ridge Meadows Hospital	157
PAH	Peace Arch Hospital	171
LMH	Langley Memorial Hospital	192
ARH	Abbotsford Hospital	257
BH	Burnaby Hospital	287
RCH	Royal Columbian Hospital	446
SMH	Surrey Memorial Hospital	650
TOTAL		2,669

Information provided by Fraser Health Finance based on staff budgeted acute care beds in operation at March 31, 2017 (includes Neonatal Intensive Care Bassinets)