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Infection Control: Essential for a Healthy British Columbia

Fraser Health Authority

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Detailed Report

Background

Infection prevention, surveillance and control programs aim mainly at protecting patients, health care workers and visitors from contracting an illness while in the health care environment. Public Health programs have a similar goal: that of preventing the spread of communicable diseases in the population at large. Data on communicable diseases is available but data on the impact of hospital-acquired infections in British Columbia is very limited, although some health authorities have made attempts to examine the costs of specific organisms. However, studies highlight the enormity of the issue of hospital-acquired (nosocomial) infections (see below).

The Numbers on Health Care Acquired Infection

In New Zealand in 2003, it was estimated that about 10% of patients admitted to hospital will acquire an infection as a result of their hospital stay. A study released by the British National Health Service in the same year found that 9% of the population acquired an infection during a hospital stay and estimated that the cost per patient increased three-fold when the individual contracted a hospital-associated infection.

In the United States, it is estimated that nearly 2 million patients a year get an infection in a health care facility and, of those, about 90,000 die as a result of the infection. More than 70% of the bacteria that cause hospital-acquired infections are resistant to at least one of the drugs most commonly used to treat them. It is estimated that treating hospital-acquired infections accounts for 2% of total hospital costs.

A Canadian survey (reported in 2000) of hospitals with greater than 80 beds found that only 13% of hospitals adequately monitor hospital infections and only 1 in 5 institutions had the staff and procedures necessary to keep infections controlled. The lead author of that report also prepared data for the Romanow Commission. That information indicated that Canadians contract more than 200,000 hospital-acquired infections annually, resulting in 8,500 – 12,000 deaths per year. The direct costs of hospital-acquired infections were estimated to be around $1 billion annually.

While infection prevention, surveillance and control programs have been part of British Columbia health care facilities for a long time, the capacity of such programs has always varied from one facility to another. These differences in capacity and resources were carried into the 2001 reorganization of the British Columbia health care system. At that time, the system was organized into the Provincial Health Services Authority and five geographically defined health authorities: Interior Health, Fraser Health, Northern Health, Vancouver Coastal Health and Vancouver Island Health. Each of the latter five is responsible and accountable for care delivery across the continuum of care (residential care, acute care, mental health, public health and home and community care).

Background

The Provincial Health Services Authority is responsible for specialized provincial health services, such as cardiac surgery, which is delivered in a number of locations within the regional health authorities. As well, the provincial authority operates the following provincial agencies:

- British Columbia Centre for Disease Control
- British Columbia Cancer Agency
- British Columbia Provincial Renal Agency
- British Columbia Transplant Society
- British Columbia Children's Hospital and Sunny Hill Health Centre for Children
- British Columbia Women's Hospital and Health Centre
- Riverview Hospital
- Forensic Psychiatric Services Commission

In the first few years of this realignment, infection control in the health authorities operated as separate programs within facilities or a cluster of facilities, much as they had done before. At the same time, Public Health continued to operate within the Health Act and its regulations for communicable disease control. Not surprisingly, both these factors make it difficult to bring an integrated approach to infection control management across the continuum of care.

Audit Purpose and Scope

The purpose of our audit was to assess whether the health authorities have effective systems for the prevention, surveillance and control of infections across all service delivery responsibilities.

We focused on the Ministry of Health, the Provincial Health Services Authority and the five geographically defined health authorities. Specifically, we wanted to find out whether the Ministry of Health and the Provincial Health Services Authority provide a framework for infection, prevention, surveillance and control (for details see The Provincial Overview); and whether each of the health authorities:

- has a workable plan in place for prevention, surveillance and control of infections;
- is demonstrating best practices for infection prevention, surveillance and control;
- has information system support in place for infection prevention, surveillance and control; and
- is reporting on the status of its infection prevention, surveillance and control efforts and is making continuous improvements.

We did not examine the infection prevention, surveillance and control practices in the B.C. Ambulance Service, physicians' offices or facilities not funded by the health authorities.

We carried out our audit fieldwork from July 2005 to February 2006.

We performed the audit in accordance with assurance standards recommended by the Canadian Institute of Chartered Accountants and accordingly included such tests and other procedures as we considered necessary to obtain sufficient evidence to support our conclusions. In gathering our evidence, we reviewed documents prepared by the health authorities, the Ministry of Health and other agencies and organizations. We also interviewed board members, senior management, managers and physicians in the health authorities, as well as staff within the Ministry of Health.

Fraser Health Authority

The Fraser Health Authority provides a full range of services (including some tertiary level services) to a population of over 1.4 million people. It is a large geographic area, stretching from Burnaby to Hope and from the Canada/US border to Boston Bar, and is made up of a mix of rural and urban communities. The authority is divided into three Health Service Delivery Areas (HSDAs): Fraser South, Fraser North and Fraser East. Together they have 12 acute care hospitals with approximately 2,000 beds. In addition, Fraser Health has access to approximately 7,000 residential care beds, including those that it owns and operates and those that it contracts for from third-party providers.

Fraser Health employs approximately 21,000 people and works with 2,200 physicians to serve the population.

Background

Overall Conclusion

The Fraser Health Authority's infection control program is struggling to set its direction. The authority has taken some initial steps to develop a fully functioning regional program, but the program requires more focus. It must ensure there is medical leadership for the program at the operational level, that the resources and tools are in place to support the program, and that there is an integrated plan in place for the prevention, control and surveillance of infections across the continuum of care.

Planning for infection prevention, surveillance and control is limited

The Fraser Health Authority (Fraser Health) is responsible and accountable for delivery across the continuum of care (residential care, acute care, mental health, public health, and home and community care). We therefore expected to find that planning for infection prevention, surveillance and control had been integrated across these services.

Conclusion

Fraser Health does not have an integrated plan in place to guide its infection control program across the continuum of care. Its 2005/06–2008/09 Operating Plan has some focus on population/public health, but nothing directed towards the infection control program. As well, the Public Health program has clearly stated goals and objectives in place for the communicable disease team.

Findings

The authority's Operating Plan 2005/06 – 2008/09 does not have a goal directly related to infection control

The Operating Plan of Fraser Health states that the authority will continue to focus on increasing patient safety. Within that context, it is investing $3.6 million annually to implement the recommendations of the Cochrane Report (the review that was conducted at Surrey Memorial Hospital in 2004, which focused on post-caesarean section surgical wound infections, head injury management and the complaints management process) and to increase specialty nursing and medical coverage. In addition, the authority will work with the Provincial Health Services Authority and Ministry of Health to develop provincial standards for infection control. No goals have been set specific to Fraser Health's infection control program.

The Operating Plan does, however, contain some specific initiatives for control of infection in the Public Health area. These include meeting or exceeding the targets for influenza immunizations, increasing capacity for HIV/AIDS follow-up and community supports, and maintaining and strengthening West Nile surveillance.

Planning for infection prevention, surveillance and control is limited

At the time of our fieldwork, the health authority was working with a consultant to define the structure of the infection control program. Once the structure is finalized and management is in place, a plan is expected to follow.

The Public Health communicable disease team has goals and objectives in place to provide direction

The communicable disease team in Fraser Health is authority-wide and includes the Medical Health Officers, Communicable Diseases Coordinators and health protection staff. In 2003–2005, the team set itself seven goals each, with objectives, indicators, targets, strategies, timelines and assigned responsibility. Exhibit 1 highlights Goal 3. The goals and objectives for the next period were under development at the time of our fieldwork.

Planning for infection prevention, surveillance and control is limited

Exhibit 1

Goal 3: Fraser Health Communicable Disease Team

GOAL 3: A communicable disease surveillance and reporting mechanism that meets or exceeds provincial expectations				
Indicator	**Target**	**Strategies**	**Timeline**	**Responsibility**
Objective: To develop effective, efficient iPHIS data collection and sharing				
Status of communicable disease data available through iPHIS	Status of communicable disease data available through iPHIS meets the Fraser Health communicable disease program requirements	Develop a guideline to articulate the surveillance process which includes: • what data is collected • how data is collected • how information is processed • who receives the information • what recipient is expected to do with the information	By September 30, 2003, review current data available and make recommendations to the iPHIS Coordinating Committee regarding improvements needed.	G & D
Objective: To enhance monitoring of, and institute timely reporting on, communicable diseases in Fraser Health				
Monthly and annual communicable disease reports	Accurate and timely reports of disease rates in Fraser Health	Generate monthly and annual reports of disease rates using iPHIS.	Ongoing	Communicable Disease Team
		Determine indicators for communicable disease reporting.	Ongoing	
		Monitor disease rates and trends through monthly reports.	Ongoing	Communicable Disease Team
		Produce annual reports.	Calendar-year communicable disease report by April 30 of the following year	Communicable Disease Team
		Make recommendations regarding communicable disease control as part of communicable disease reports.	Ongoing	Communicable Disease Team
		Establish a working group, including Information Systems (IS/IT) to enhance indicator development and data management.	September 2004	R/I/T

Source: Fraser Health Communicable Disease Team Goals and Objectives 2003 – 2005

Building its infection control program to ensure it meets best practice standards requires focused attention

The Public Health Agency of Canada (formerly Health Canada) has issued a number of guidelines in the area of infection control pertaining to such matters as staffing, facility design, surveillance and monitoring, which are considered to be "best practice." Guidelines from other agencies such as the British Columbia Centre for Disease Control and the United States' Center for Disease Prevention and Control also support best practices.

We expected to see regional standardized, accessible infection control manuals, appropriate structures with accountabilities, educated staff with access to ongoing timely education, workspace conducive to infection management, regular monitoring, and participation in research.

Conclusion

Fraser Health is aware that it does not currently demonstrate infection prevention, surveillance and control best practices and is taking steps to address the issues.

Findings

Infection control/communicable disease standards are accessible to staff, but the infection control manuals for Acute Care and Residential Care are not standardized or consistent across the health authority

Infection control standards, policies, and procedures manuals provide staff guidance in dealing with specific infections. These manuals are available in hard copy to all departments and programs and online to those departments and programs that have access to the intranet. However, the manuals are not necessarily consistent across the health authority or kept up-to-date. The manuals that are in place reflect the previous regional health care delivery structure. A new authority-wide manual for Acute Care has been under development for two to three years, but the workload has slowed its progress.

Any new policies that are developed or existing policies that are revised are done for the authority as a whole. Notification of staff regarding new policies is done in a variety of ways: emails to the department managers for circulation to staff, notices in

communication books, posters, and one-on-one discussion. If the change in policy is significant, an education session may be held to inform staff.

Fraser East and Fraser North have a separate manual for the residential care facilities. Fraser South has an integrated manual for Acute Care and Residential Care. As well, at the time of our fieldwork, a manual for non-authority owned and-operated residential care facilities had just been completed by the Residential Care Infection Control Committee and was awaiting approval.

We were told that staff use the manuals as a resource, as well as accessing the Infection Control Practitioner when questions arise. We also heard that physicians are aware that a manual is available but generally do not use it. Instead, they ask nursing staff when seeking information, or contact an Infection Control Practitioner or a medical colleague familiar with infection control issues.

Public Health staff use the B.C. Centre for Disease Control's *Communicable Disease Control Manual*, which is available to staff both online and in hard copy. Updates to the policies are sent out by the centre to each Public Health unit and then it is up to each Public Health office to ensure those changes are communicated to staff.

Fraser Health has not been proactive in providing adequate focus and resources to infection control to support meeting best practice standards

The SARS (Severe Acute Respiratory Syndrome) outbreak in 2003 identified a number of issues regarding infection control in Fraser Health. Minutes of the senior executive called for development of the infrastructure and program of the Infection Control Department. A proposal was put forward for additional resources. Then in the fall of 2004 an issue of post-caesarean surgical wound infections at Surrey Memorial Hospital resulted in an external review of infection control management at the hospital. Recommendations were made regarding the infection control program authority-wide.

In early 2005 a consulting group was hired to review the infection control program.

As a result, the infection control program was in a state of flux at the time of our audit.

Building its infection control program to ensure it meets best practice standards requires focused attention

Infection Control Organization

The Vice-President, Quality, Patient Safety and Medical Leadership, joined the organization in the spring of 2005 (previously there was a Vice-President of Quality). The portfolio is responsible for quality and patient safety, including infection control across the health authority, and for medical leadership, governance and operations for Fraser South and Fraser East. Responsibility for Fraser North resides with the Vice-President, Medical Research.

Reporting to the Vice-President, Quality, Patient Safety and Medical Leadership is the Director, Quality Improvement and Risk Management, who is responsible for the infection control program (at the end of our fieldwork, risk management responsibilities were being assigned to a new Director). The Manager of Infection Control reports to the Director, Quality Improvement and Risk Management. There is no designated Medical Infection Control Officer for the infection control program. There are, however, site Infection Control Officers (physicians) who provide support to the Infection Control Practitioners. These designated physicians have a mix of backgrounds (medical microbiologists, pathologists and, in some cases physicians from another specialty).

Public Health communicable disease control is the responsibility of the Chief Medical Health Officer and is a separate entity from the infection control program. At the time of our fieldwork, the Chief Medical Health Officer was not a member of the senior executive team, but rather reported to it through one of the executive. (This was changing as we were completing our fieldwork. The Chief Medical Health Officer was becoming a member of the senior executive team).

A number of groups are key to an infection control program. Some of them are discussed below.

Infection Control Committees

Medical staff have a key role to play in infection control, usually through the medical staff organization and committee structure of the health authority. The Medical Staff Bylaws give the Health Authority Medical Advisory Committee (HAMAC) the

responsibility and accountability for the quality of medical care, although the Board of Directors is ultimately accountable for the quality of medical care and the provision of appropriate resources.

In December 2003, the Fraser Health Infection Control Coordinating Committee was established with three subcommittees: the Acute Care Infection Control Committee, the Residential Care Infection Control Committee and the Communicable Disease Committee. The Infection Control Coordinating Committee reports to the HAMAC. Of the three subcommittees, the Acute Care Committee struggled and eventually ceased to be able to meet its mandate, creating a gap.

In addition to this authority-wide structure, there were also site or area Infection Control Committees that, at the time of our fieldwork, were in various stages of functioning. When the authority-wide Infection Control Coordinating Committee was put in place, it was not clear whether the existing committees were to continue, so some chose to remain active whereas others seemed to become semi-active or stopped meeting completely. These site or area Infection Control Committees report to their respective Local Medical Advisory Committees (LMACs). The LMACs, in turn, report to the Health Authority Medical Advisory Committee. Membership on the local Infection Control Committees varies by location, but generally includes a cross-section of staff.

The minutes that were available for the local Infection Control Committees indicated that a wide variety of issues were discussed, action taken as appropriate and recommendations made to the LMAC as required. Some committees had minutes available into 2005. Others were not available after 2004, which may reflect the changing structure and confusion as to whether they were to continue meeting.

The Cochrane Report, released in December 2004, included a recommendation that, "The Medical Advisory Committee and Administration review the subcommittee structure and terms of reference of the Surrey Memorial Hospital Medical Advisory Committee and the Health Authority Medical Advisory Committee to ensure that regular reports of matters required by the Medical Advisory Committee under the health authority bylaws are received

and acted upon by the Medical Advisory Committee and are reported to the Fraser Health Authority Board and Administration as required."

In addition to the medical committee structure there is an Infection Control Committee, the membership of which appears to be made up mostly of the Infection Control Practitioners joined periodically by a medical microbiologist. We saw no terms of reference for the committee. However, meetings were held regularly and covered a wide variety of topics, including policy development, surveillance issues and required actions, product concerns, construction issues, and structure and function of the infection control program.

The health authority also has a Quality Council in place that was created to ensure the provision of quality patient care and a safe environment for patients, residents, visitors and staff. The mandate of the committee is to study, investigate and evaluate the practice of care provided by the health care professionals in the authority. The committee reports to the Vice-President, Quality and, through that position, to the executive, the Board Quality Performance Committee and HAMAC. Membership on this committee includes, for example, the Chair or delegate of HAMAC, a delegate from infection control, the Director, Quality Improvement and Risk Management, and the Professional Practice Leader. The committee minutes reflect discussion of issues related to infection control (e.g., the Cochrane Report, and the results of a patient safety survey in December 2004). Quality Review Committees at each site report to the Quality Council.

Infection Control Practitioners

The number of certified Infection Control Practitioners required for a comprehensive program has not been firmly established, but the general guideline is 1 for every 150–175 acute care beds and 1 for every 150–250 residential care beds. There are no clear guidelines to indicate the number of practitioners required to support other programs such as community mental health and home care programs. However, it has been noted by a group of infection control experts that there is a need for an infection control practitioner's knowledge and expertise in the community.

Building its infection control program to ensure it meets best practice standards requires focused attention

A draft proposal for an additional 10 full-time-equivalent (FTE) practitioners was submitted in the summer of 2003. Eight of the positions were to be added to the baseline service and two were to be considered flex positions – positions that could focus on project work, such as the standardization of infection control policies and processes, focused improvement audits and the development of data management and reporting systems. In response to the proposal, two additional FTE positions were approved for the 2003/04 fiscal year and two for 2004/05. The proposal did not include a specific request for office space and computers, but mentioned that they would be required.

A request for additional space and equipment was submitted in May 2005 and noted that there had been numerous requests dating back to 2003. The request is for office space for six staff plus phones and computer terminals (space and equipment was recommended both by the Cochrane report and the board Quality Performance Committee). This request had not yet been addressed at the time of our fieldwork.

As of December 2005, the authority had 9.6 FTE Infection Control Practitioners providing support to Acute Care (this number excludes the Manager and a Special Projects Coordinator, although the Manager does provide hands-on service). Fraser Health has an acute care bed base of 1,969; therefore, this level of staffing does not meet the guideline. Based on the maximum ratio of 1 to 175 beds, 11.25 FTEs are required. The authority also owns and operates 1,872 residential care beds for which there are no designated Infection Control Practitioners. Neither is there infection control support for Community Clinics or Home and Community Care staff except on an ad hoc basis. The Infection Control Practitioners provide consultation and education to Residential Care, Community Clinics and Home and Community Care on a request basis as time permits.

In addition, Fraser Health contracts with third-party providers for 5,172 residential care beds. These contracts are managed within Fraser Health by the Business Partnerships division. This group has 1 FTE Infection Control Practitioner who acts as a consultant and provides support to these service providers in developing and managing their infection control programs. This staff member is not considered part of the infection control program.

Building its infection control program to ensure it meets best practice standards requires focused attention

Within Public Health, there is a Communicable Disease Manager and five Communicable Disease Coordinators assigned to specific geographic areas (one in Fraser East, two in Fraser North and two in Fraser South). The coordinators provide communicable disease and immunization orientation, and consultation to Public Health Nurses. In addition, there is a Fraser Health communicable disease team that includes the Medical Health Officers and Environmental Health Officers.

A position description in place for Infection Control Practitioners outlines the following duties and qualifications: Bachelor of Science in Nursing, current practising licence, completion of an infection control or medical microbiology program, two years' recent related experience in a large acute care facility, plus one year's recent related experience working in a computerized infection control environment. The position description for the Manager, Infection Control is dated November 2002. The position is responsible for the management and operation of infection control for the three HSDAs of Fraser Health. Although the job description is silent on it, the Manager also acts as an Infection Control Practitioner and provides direct service on one acute care site. The qualifications for the position of Manager include a Bachelor of Science in Nursing or Epidemiology, supplemented by completion of an approved program in medical microbiology and/or clinical epidemiology; a management degree or diploma; three years' related experience in hospital infection control; and membership/certification with the relevant registering association.

We were also provided a 1997 position description for an Infection Control Practitioner at Surrey Memorial Hospital. It did not require a nursing background. Rather, it required: a Master's Degree in Hospital Epidemiology; graduation from a recognized School of Medical Technology with current registration with the Canadian Society of Laboratory Technologists; completion of an approved program in Medical Microbiology and/or Clinical Epidemiology; and four years' recent clinical competency in current infection control practices, research methodology and general laboratory experience in medical microbiology/epidemiology. The person with these qualifications is currently the Infection Control Project Coordinator for Fraser Health.

Building its infection control program to ensure it meets best practice standards requires focused attention

Medical Infection Control Officers

At the time of our fieldwork, there was no designated Infection Control Officer in place for the health authority. A consulting group had just completed a review of the program structure and was in the process of reporting back to the authority. Not all decisions had been made about the structure, but we were told that there was agreement to move forward with the hiring of a Medical Director for the program. Although there was no Medical Director for the program, there were physicians at each acute care site, or cluster of sites, to provide advice and support to the Infection Control Practitioners. These physicians were medical microbiologists, pathologists or physicians who were the Chair of an Infection Control Committee. Medical microbiologists supported by laboratory services staff are integral to the infection control program for the processing and identification of microorganisms.

The Chief Medical Health Officer and the Medical Health Officers located in each of Fraser North, South and East also provide guidance and advice to the program as needed, although Public Health remains separate from the infection control program.

Workplace Health Department Staff

The Workplace Health Department is not directly part of the infection control program, but works closely with the program because it is responsible for staff health. This involves ensuring that staff are up-to-date with their immunizations and that precautions are in place to protect staff from contracting any illnesses (e.g., fitting staff for a special mask referred to as N95, which is used in case of potential airborne pathogens); and taking appropriate steps if staff become infected with an organism such as during an outbreak. A staff member from the Workplace Health Department also participates on the Regional Infection Control Coordinating Committee. The department also has an occupational health physician on contract to assist with issues related to staff health.

Workplace health staff have regular quarterly meetings with the Infection Control Practitioners and Public Health staff (communicable disease) to maintain good communications, deal with issues that impact all three areas, and discuss policy and procedures that impact all three areas and that may require changes.

Building its infection control program to ensure it meets best practice standards requires focused attention

Physical Environment

There is evidence that the built environment may influence the incidence of infections in facilities. The built environment refers to type of rooms: single versus multi-patient, the location and number of sinks, types of surfaces, ability to separate clean and soiled equipment, and availability of waterless hand washing stations.

Across the Fraser Health Authority we heard that the differences in facility age and design impacted the availability and location of sinks for hand washing, the ability to isolate patients and, in some areas, the ability to separate clean and dirty equipment. In the spring of 2003, post-SARS documents indicate that the authority was concerned about the number of negative pressure rooms available and undertook a process of identifying a priority listing of the negative pressure room requirements for the hospitals in each area (Fraser North, Fraser South and Fraser East).

Then again, in the spring of 2004, meeting minutes show that the health authority was planning to upgrade and implement additional negative pressure rooms for management of patients with infections that can be transmitted by that route (e.g., chicken pox, measles and tuberculosis). The work to increase the number of negative pressure rooms is ongoing. For example, we were told that there were no negative pressure rooms in Peace Arch Hospital but that it was being addressed with the completion of a new room on maternity and the upgrading of two rooms in emergency and one elsewhere. Overall, the number of private rooms with proper ventilation has improved. However, another issue regarding the ability to isolate is that there are a limited number of private rooms in Fraser Health with an ante room (a room outside the patient's room where staff can gown and wash before entering or on exiting the isolation room). Isolation carts are set up outside the rooms to address the lack of ante rooms.

Emergency rooms across Fraser Health were frequently identified as having no or limited ability to isolate patients, however there are renovations underway or planned at some sites to improve the situation.

Fraser Health has a draft policy, dated February 2003, that requires the Infection Control Department's involvement at the planning and design stage of construction and renovation projects. However, the actual inclusion of an Infection Control Practitioner

may not always happen. The policy is very similar to the Standards Council of Canada standard called "Infection Control During Construction or Renovation of Health Care Facilities," which is based on a 1999 Health Canada Guideline "Construction-related Nosocomial Infections in Patients in Health Care Facilities: Decreasing the Risk of Aspergillus, Legionella and Other Infections." (Appendix B provides more detail on the Standards Council of Canada's standard.)

Fraser Health has installed waterless hand hygiene dispensers throughout its facilities to help promote hand washing by both staff and visitors and to decrease the risks created by the lack of sinks in some facilities and the ease of accessibility in others.

Supplies

The Infection Control Practitioners are responsible for ensuring that the products used to manage infection control are suitable and offer protection to both clients and staff. For example, the Infection Control Practitioners are involved in the choice of new gloves and sanitizers.

We heard from interviewees that gloves, gowns and masks were, for the most part readily available as needed. Staff working in programs outside of facilities also carry the appropriate supplies with them.

Infection control education for staff after their initial orientation varies across the health authority

Orientation

All staff joining Fraser Health receive an authority-wide orientation that includes a component on basic infection control, such as hand hygiene. The second day is for nursing staff and is more in-depth. In addition, staff receive an orientation to their specific work site, which in some cases may also include material on infection control. The health authority also has an employee manual that is provided to staff at orientation and includes a section, "Infection Control: Common Principles," that highlights standard precautions, hand hygiene and respiratory etiquette.

In 2004, Fraser Health conducted an evaluation of the first day of new employee orientation including the segment on infection

control. During the first three months of the evaluation period, the infection control portion consisted of a video about hand washing. The next three months included a live presentation by Infection Control Practitioners, supplemented by a PowerPoint presentation. The quantitative and qualitative analysis showed an improvement with the live presentations, including increased relevance of the material and an increased understanding of the material. The evaluation was completed by 849 new employees, which represented a response rate of 95.5%.

There is no formal orientation for new physicians joining the medical staff of Fraser Health. However, for sites that have interns and medical residents (such as the Royal Columbian Hospital) a 30-minute session on infection control is presented.

Ongoing Education

Ongoing staff education on infection control varies across sites. The topics and approach depend on the Infection Control Practitioner and the needs of the staff. Education on a particular topic may be provided both on a formally scheduled basis and on a one-to-one, informal basis. The more informal education usually occurs when the Infection Control Practitioner is attending to an issue in a particular department or area. Sometimes the Infection Control Practitioner will be invited to a unit or department meeting to provide education on a particular topic or will make a request to attend a meeting to provide education on a particular issue. The Infection Control Practitioner may also work with Clinical Nurse Educators or Clinical Resource Nurses in some areas, who in turn educate the staff on infection control.

Tracking staff attendance at in-services varies by site, although we were given a document that indicated the number of sessions provided on a particular topic by site and department. In 2004, for example, 42 sessions were provided to staff throughout Langley Memorial Hospital on the new Antibiotic Resistant Organism Policy; and in 2005, one session on isolation was provided to the food and nutrition staff at Eagle Ridge Hospital.

"Infection Control Week" in October also provides another opportunity for staff education. This is done through education sessions, posters, and contests (e.g., the "Take the C. diff Challenge").

Building its infection control program to ensure it meets best practice standards requires focused attention

The use of newsletters is also another method of educating staff about infection control practice. Fraser Health's newsletter *Infocus* has included articles about flu immunization, SARS, infection control and hand washing. As well, one issue of *Pharmacy News* in the fall of 2004 contained an article about C. difficile associated disease (CDAD).

No ongoing education related specifically to infection control has been set for medical staff, although any topic can be added to the schedule of medical continuing education sessions. In addition, infection control issues may come up as part of morbidity and mortality rounds or grand rounds, or be a topic of discussion at a departmental or medical staff meeting. The Medical Health Officers also use faxes to try to keep medical practitioners up-to-date on emerging pathogens and changes in communicable disease issues.

The physicians we interviewed indicated that they gain knowledge about issues of infection control through reading, accessing the Internet, and attending conferences related to their specialty.

Infection Control Practitioners, Public Health Nurses and physicians involved with infection control use a variety of educational opportunities to maintain their knowledge and certification

Infection Control Practitioners are not required to take a set number of hours of continuing education. Rather, ongoing education is usually self-directed: what am I interested in and where do I need to increase my knowledge? Formal educational opportunities include conferences, workshops and online courses. Informal opportunities include professional association meetings, journal reading and interaction with peers and medical practitioners.

There is an orientation schedule in place for newly hired Infection Control Practitioners which covers a wide variety of topics (including an introduction to Meditech and MedConnect, data management, and surveillance) as well as allowing for time in the microbiology lab.

To maintain certification, Infection Control Practitioners must write and pass a re-certification exam every five years. Certification is not a requirement of Fraser Health, but staff who are certified make an effort to maintain their certification.

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Public Health tries to send staff to conferences and workshops as available—for example, the Canadian National Immunization Conference is every two years and the Communicable Disease Coordinators usually attend. Staff will also attend the Infectious Disease Day in Victoria if the topics are applicable. Public Health Nurses responsible for immunizations must be re-certified every three years. The certification process involves both an exam and an observation component. The observation component includes the initial setting up of a clinic through to client assessments, vaccination administration and documentation into the public health information system.

For those physicians directly supporting the infection control program, knowledge is gained by attending rounds, reading, and attending conferences.

Monitoring of infection control practices varies across the health authority

In this audit, we looked at monitoring from two perspectives: surveillance—the ongoing, systematic collection, analysis and interpretation of data for use to improve health outcomes; and the direct observation or audit of practice (such as hand washing or gowning). In addition we looked at the mechanisms the authority has in place for monitoring any third-party contracts that have implications for infection control.

Surveillance

Surveillance within the authority generally varies across Fraser North, South and East—and even by site, because it currently depends on the availability, skill and knowledge of the Infection Control Practitioner. A paper written in November 2004 detailed the surveillance activities by site and then described a surveillance plan. Exhibit 2 shows the surveillance activities at individual sites throughout the authority in 2004.

Building its infection control program to ensure it meets best practice standards requires focused attention

Exhibit 2

Surveillance Activities Provided at Individual Sites throughout the Fraser Health Authority

Site	Surgical Site Infections	Bacteremia	Pneumonia	AROs (may include MRSA, VRE and ESBL)	Other
Chilliwack General Hospital/ Fraser Canyon Hospital	Class 1, 2, 3, 4 wounds	✔	✔	✔	UTI, GI, soft tissue infections in extended care only
Delta Hospital				✔	
Fraser North	Cardiac	Primary		✔	
Langley Memorial Hospital		Primary		✔	
MSA Hospital				✔	
Mission Memorial Hospital				✔	
Peace Arch Hospital		Primary		✔	
Surrey Memorial Hospital	Class 1 & 2 wounds 1997 – 2003	Primary 1997 – 2003; Hemodialysis patients 2002 – 2003	Ventilator-associated	✔	

Source: Fraser Health Authority Infection Control Surveillance (November 2004)

The proposed plan included surveillance for CDAD, with a goal of decreasing: the incidence of CDAD from 30 per 10,000 patient-days (peak incidence) to less than 6 per 10,000 patient-days; vascular access-associated bloodstream infections in hemodialysis patients (to start January 2005), and total knee arthroplasty.

At the time of our audit, CDAD surveillance was conducted in all Fraser Health acute care sites. A CDAD incidence report for the period July 2004 to January 2005 indicated a rate of 11.6 per 10,000 patient-days. The report also included site-specific rates.

Cardiac surgery site infections are monitored at Royal Columbian Hospital. The data definitions used are those of the National Nosocomial Infection Surveillance (NNIS) program in the U.S.

Building its infection control program to ensure it meets best practice standards requires focused attention

We did not see any other reports specific to surgical site infections, with the exception of caesarean section infection surveillance, which came about as a result of the Cochrane Report. The first reports on this surveillance varied by site, but were for a period from January 2005 to July, September or October 2005 (depending on the site). The surveillance involved a number of detection methods by Infection Control Practitioners, physician reporting, and reporting by Public Health Nurses through the Well Baby Care program and home care nurses. The Infection Control Practitioner performed Kardex and chart review, as well as monitoring daily emergency room and outpatient IV clinic visits and microbiology reports. Family physicians and surgeons notified infection control staff of infections identified during office follow-up visits. Therefore, a given patient with a surgical site infection may have been identified by more than one method. The report notes that comparison of rates between facilities is not provided because case-finding methods that minimize reporting bias are being explored. Data on antibiotic prophylaxis was also included in the report.

We also found recent surveillance reports for vascular access-associated bloodstream infections for the renal program at Royal Columbian Hospital, but not for the program at Surrey Memorial Hospital.

Methicillin-resistant staphylococcus aureus (MRSA) and vancomycin-resistant enterococcus (VRE) are also monitored at all Fraser Health sites. A report in December 2005 noted a slight increase in MRSA cases from 2003/04 to 2004/05; while VRE cases increased by almost six times (from 5 to 28) and CDAD more than doubled (from 222 to 561). The report also provided an estimate of the costs of these three organisms to the health authority: $6.8 million for 2004/05.

Fraser Health is participating in the national patient safety initiative called "Safer Healthcare Now!" which is focused on six targeted interventions. (Each of these has an evidence base indicating that appropriate implementation and practice can lead to reduced mortality and morbidity). This initiative is patterned on the Institute of Health Improvement's "100,000 Lives" campaign in the U.S.

Building its infection control program to ensure it meets best practice standards requires focused attention

Of the six targeted interventions, three are connected to infection control: Prevention of Central Line-Associated Bloodstream Infection, Prevention of Surgical Site Infection (selected surgeries), and Prevention of Ventilator-Associated Pneumonia. For each of the interventions, a kit explains the key components, or bundles, of care; the changes that might be made to implement the care requirements; the standardized data to be collected; and the calculations to be completed, analyzed and reported. Involvement in the initiative also requires that baseline data be collected on current infection rates in these areas so that the health authority has some sense of where it is starting.

Public Health's surveillance of communicable diseases is ongoing. It is a regulatory requirement for health care professionals and others to alert any public health agency to any client they have assessed with a disease designated as reportable. Appendix A provides a list of current reportable diseases in British Columbia. Public Health in turn provides surveillance reports to the B.C. Centre for Disease Control, which receives the reports on behalf of the Provincial Health Officer (the centre then reports these diseases to the Public Health Agency of Canada). In addition, Public Health monitors immunization rates and any adverse events that may occur and reports this information to the centre.

Contract Monitoring

Fraser Health has contracts with a number of operators of residential care facilities, outlining the expectations of the parties. The template of the contract states that in providing services, the provider will comply with all federal, provincial, regional and municipal legislation and regulations, as may be amended from time to time, that are applicable to the provider's provision of services including, but not limited to the following:

- the Community Care and Assisted Living Act and its regulations;
- the Continuing Care Act;
- the Home and Community Care policy manual; policies and standards of the Fraser Health Authority relating to home and community care and the provision of residential services;
- policies and standards of the Ministry of Health relating to home and community care; and
- provisions of this agreement.

Building its infection control program to ensure it meets best practice standards requires focused attention

There is nothing in the contract specific to infection control, but it does stipulate that the provider must meet the quality standards as required by the health authority and accreditation standards with the Canadian Council of Health Services Accreditation (CCHSA) or other recognized accrediting body, as approved by the health authority. The CCHSA standards contain sections specific to infection control. The contract notes that if at the time of signing the agreement the provider does not hold a current accreditation status, the provider will begin the accreditation process within one year of the date of signing the agreement and achieve accreditation within three years of signing the agreement and maintain accreditation throughout the term of the agreement.

Reporting requirements were not specified beyond the required reporting of incidents, but quality outcomes and associated performance measures must be developed through a collaborative process between the health authority and the provider.

In addition, Fraser Health contracts with a provider of housekeeping services for its facilities. The contract includes a number of sections relevant to infection control including:

- Before the Contractor commences providing the Housekeeping Services, the health authority shall make the Contractor aware of the health authority's requirements with respect to occupational health and communicable disease management.
- The Contractor shall ensure Contractor personnel who are required to enter facilities for the purpose of providing the Housekeeping Services, shall have the noted tests, including but not limited to the following list: Tuberculosis screening (TB Skin Test) within two months of placement at any facility and that they have been screened in regard to their immunity status for Chicken Pox, Red Measles, Mumps, Rubella, Hepatitis B, Tetanus, Diphtheria, and Polio.
- The health authority reserves the right to establish at any time, requirements for the Contractor with regard to infection control, waste handling and similar matters. The Contractor shall comply with the Health Canada Infection Control Guidelines for Hand Washing, Cleaning, Disinfecting and Sterilization in Health Care as published

Building its infection control program to ensure it meets best practice standards requires focused attention

December 1998 and as amended from time to time, including amendments related to infection emergencies.

- The Contractor shall implement an ongoing detailed training programme for its Contractor Personnel regarding operational policies and procedures required by the Contractor under the Agreement.

The contract also stipulates that annual cleaning standards must be met or exceeded by site. In year 1, the minimum standard is 75%; and in years 2 to 5 of the contract, the minimum is 80%.

The authority has its own audit team which conducts monthly audits looking at 20 elements. The aim is to score 85% or more in any area categorized as high risk. The results are shared with the contractor, who then puts corrective action in place if required and reports back to the health authority Contract Manager. In addition, the contractor conducts its own audits using the same audit tool as the health authority and the data is compared.

Because of some initial and ongoing concerns from managers about cleaning standards and response times, Service Level Agreements were put in place with individual departments as necessary. These agreements outline the responsibilities of each party, define the nature and parameters of the service to be provided, and set expectations that respect the needs of patients/residents and staff. The agreements are based on the recognition that the effectiveness and timeliness of housekeeping services are the shared responsibility of housekeeping services and unit staff. The Service Level Agreements are to be reviewed by both parties, and revised as appropriate on a yearly basis—or more often if requested by either party. Exhibit 3 provides an example of the contents of a Service Level Agreement with a maternity unit.

Building its infection control program to ensure it meets best practice standards requires focused attention

Exhibit 3

Sample Service Level Agreement between Housekeeping Services and a Maternity Unit

Objectives To maintain a high level of cleanliness and service to consistently meet customer expectations.	
Response Time Standards	
A. Timeliness Critical	Immediate within 2 minutes
B. Timeliness Constant	Immediate 5 – 30 minutes
C. Frequent, cleaning important and require ongoing monitoring/maintaining	0 – 24 hours
The table below outlines the responsibilities of the Housekeeping Services as well as the Fraser Health Unit responsibility.	
Housekeeping Responsibility	**Unit Responsibility**
After Each Birth Cleaning	
Housekeeping will provide cleaning after each birth as per the established procedure, including but not limited to stripping and making all beds.	Contact the call centre to advise of the cleaning needs.
Dedicated shift coverage will vary by site. Coverage will be 24/7 or hours the department is operational.	After hours cleaning requests will be made to the call centre.
➢ Time Response Standard A (during normal hours of operation	Contact the FHA Contract Manager regarding deficiencies.
OR (High Risk Room) Between Case Cleaning	
Housekeeping will provide between case cleaning as per the established Between Case Cleaning procedure.	Contact call centre to advise of cleaning needs.
Cleaning procedure will follow the AORN guidelines.	Contact the FHA Contract Manager regarding deficiencies.
Medical equipment that has been used needs to be cleaned between cases. ➢ Time Response Standard A	

Source: Fraser Health Authority Service Level Agreement (2005)

Fraser Health housekeeping contract managers are responsible for monitoring the services provided by the contractor. There is also a bi-monthly meeting of Infection Control Practitioners, the contractor and Fraser Health contract managers. The minutes of the meetings reflect discussion and problem-solving on a variety of

issues. The contractor has an Infection Control Practitioner in place to provide education to staff.

In our interviews, we heard differing views on the housekeeping service. Some people said that cleanliness in their work area is not a problem, while others said there are still issues. The audit report we reviewed over eight periods indicated improvement over time in the number of sites scoring over 80%. In period one, for example, there were five sites below 80%. In period three, there was only one site scoring below 80%; and in periods six and seven, no sites scoring below that level.

Practice Monitoring

There is no formal program in place for ongoing monitoring of practice such as hand washing or use of gloves. However, we did hear that there is informal monitoring in that if the Infection Control Practitioner is in a department and notices someone using gloves improperly, he or she will point it out. This type of informal monitoring is also said to be done by departmental managers or educators. At some sites, the Infection Control Practitioner periodically checks hands with a product called "Glo Germ" (a product that uses black light to detect areas on skin not adequately washed after hand washing). Such informal monitoring is beneficial, but we strongly believe there should be a formal mechanism in place to monitor hand washing, because it is well documented that hand washing is the best line of defence against the spread of infectious organisms. Being well aware of this, Fraser Health was just completing a formal hand washing audit in its acute care facilities at the time our audit. Registered Nurses were recruited and trained to record the hand hygiene activities of various staff and hospital visitors. A total of 2,246 observations were made in emergency departments, intensive care units, medical and surgical units.

The audit results were dramatic. For example, of 1,825 observations made of hand washing before patient contact, 67% showed people not doing any hand washing at all, 22% being partially compliant and only 11% being fully compliant. Exhibit 4 provides the definitions of compliance.

Exhibit 4

Hand Washing Audit Definitions of Compliance

Full hand hygiene compliance — includes all FHA recommended steps for either hand washing or the use of alcohol gel:

Hand wash comprises of 5 steps:

- Wash hands for 15 seconds with friction
- Apply soap
- Rinse under water
- Pat dry with paper towels
- Turn off taps using paper towel (unless hand-free)

For alcohol gel:

- Rub hands with alcohol hand gel for 15 seconds while using friction.

Partial hand hygiene compliance — does not meet the entire FHA standard but shows an attempt at recommended steps:

- Hand wash includes some but not all of the 5 recommended steps.
- Using alcohol hand gel for less than 15 seconds while using friction.

Hand hygiene not done — indicating no hand wash was attempted at all.

Source: Fraser Health Hand Hygiene Audit Provisional Report for Observations Recorded between October and November 2005 (draft: March 2006)

The audit also measured hand washing compliance before and after an invasive procedure (including Foley catheter insertion, suctioning, drawing blood, peripheral IV start, intubation). There were 263 observations made before a procedure and 292 after a procedure. The results showed that 74% of individuals did not do a hand wash before the procedure and 44% did not do a hand wash on completing a procedure. Seven percent were fully compliant before a procedure and 22% after a procedure; and 19% were partially compliant before a procedure and 34% were partially complaint after a procedure.

The results are also provided by facility and by professional designation.

The results of the audit are to be used as a baseline measurement for Fraser Health hand hygiene performance improvement. To increase awareness for appropriate hand hygiene practices,

facility-specific campaign posters have been designed and plans are underway to develop education sessions.

Antibiotic use is another aspect of monitoring, one which predominantly occurs in acute care facilities. We found it to vary across the authority. The health authority's Pharmacy and Therapeutics Committee (a subcommittee of HAMAC) makes motions to HAMAC for approval. An example was the standardization of automatic stop orders across the authority for antibiotics (seven days) unless explicit orders come from a physician (the motion was approved). Responsibility for monitoring antibiotic use seems to reside with a variety of people, again varying by site, and may include medical microbiologists, pathologists, Infection Control Practitioners or pharmacists. Antibiograms are produced by the pathologists/medical microbiologists, highlighting specific organisms and their susceptibility to different antibiotics. Antibiograms assist in ensuring appropriate antibiotic use.

We were told that there are also policies in place that support appropriate antibiotic use, such as automatic substitution, step-down from IV to oral antibiotics, prescribing restrictions for example, ordering by an internist. These policies vary from facility to facility across the authority.

Fraser Health is not involved in the "Do Bugs Need Drugs?®" program, which is an initiative that started in Alberta and is directed at educating the public about antibiotic resistance and the appropriate use of antibiotics. The program promotes three key messages:

- Hand washing is the best way to stop the spread of infections.
- Not all bugs are created equal. Both bacteria and viruses cause respiratory tract infections. Antibiotics work against bacterial infections and not against viral infections such as colds and flu.
- Antibiotic resistance is a problem. Use antibiotics wisely to prevent bacteria from becoming resistant to antibiotics.

Fraser Health was waiting to learn from the experience of the Vancouver Coastal Health Authority before determining what to do about the initiative.

Building its infection control program to ensure it meets best practice standards requires focused attention

External Monitoring

Fraser Health participates in the accreditation process of the Canadian Council on Health Services Accreditation, a national, non-profit, non-government independent body that offers health organizations a voluntary, external review process to assess quality by developing national standards, assessing compliance with those standards, and sharing the information from the reviews and decisions. The accreditation review process highlights both strengths and areas for improvements and includes recommendations.

Fraser Health is currently involved in a three-year sequential survey, which means certain aspects of the authority are reviewed each year for three years. The authority was surveyed in December 2005 on several areas: Human Resources; Critical Care Services; Home Care – Home Health Services; and Long-Term Care – Residential Care. The report of the survey was not available at the time of our fieldwork.

The health authority also participates in the annual provincial housekeeping audit conducted by WesTech Systems FM, Inc. and reported publicly by the health authorities. This audit is based on cleaning outcome standards and risk categories for areas of the facilities (e.g., rooms categorized as very high risk, such as an operating room have a low tolerance for unclean inspection elements). The best practice benchmark is 85%. The initial audit was conducted in May 2005. Fraser Health as a whole scored above the benchmark. Eight facilities fell below the benchmark. Seven of the facilities falling below the benchmark were acute care and one was residential care.

The health authority is not actively involved in research to enhance the practice of infection control

Fraser Health is not currently involved in research related to infection control. However, the authority does trial and evaluate new products (such as wound care products) and this involves the Infection Control Practitioners. The audit activity also provides a form of research, since it may result in improved practice and publication of findings in journals.

The health authority provides weak information system support for infection prevention, surveillance and control

A key requirement of a comprehensive infection control program is that it enables access to good data so that the authority can understand infection rates and be able to take action to address the rates and to report on the overall program. We expected Fraser Health to have information systems in place to support the infection control program.

Conclusion

The information system in place in Fraser Health does not have a module to support the infection control program across the continuum of care. There is, however, a system in place to support the Public Health programs.

Findings

Fraser Health does not have a standardized reporting system in place for its infection control program, except for that in Public Health

Meditech is the information system in place across the health authority (although there are different versions in the North, South and East), but it does not have an infection control surveillance component. Although the minutes of a senior executive team meeting showed a briefing by Meditech that noted there are current applications that could assist with analyzing infection control issues, our interviews did not indicate that these were currently in use. However, the Infection Control Practitioners can access Meditech for lab results and the system does allow for some customization (e.g., to allow the tracking of patients with MRSA).

The authority's Strategic Plan for Information Management has three key goals:

- create a reliable and stable computer applications environment that integrates key information across Fraser Health and enhances its ability to provide cost-effective care;
- develop a stable, reliable and supportable technological infrastructure that enhances Fraser Health's ability to provide cost-effective and responsive health care and supports development of the electronic health record; and

- develop a responsive information management service delivery organization resulting in improved information management.

The roadmap does not include any system or software specific to infection control, although it does include an integrated standard surgical management system, plus the interface of the Meditech lab system to the B.C. Centre for Disease Control, both of which may assist the Infection Control Practitioners with data capture and management.

The minutes of the Infection Control Practitioners' meeting of March 2005 reflect a discussion about a proposal for 12 PDAs (Personal Digital Assistants) to be loaded with Pendragon software to assist with streamlining data collection. The PDAs will allow the Infection Control Practitioners to enter data directly from the wards and then upload them to the main database. There is no indication if the proposal was approved nor did we hear anything about it in our interviews.

Public Health uses the Integrated Public Health Information System (iPHIS), which supports a number of public health programs, including immunization records and communicable disease case management and reporting. The system is hosted and operated by the Provincial Health Services Authority and the B.C. Centre for Disease Control. There was no mention of iPHIS in the authority's Strategic Plan for Information Management.

When physicians do immunizations in their offices, the data is not necessarily sent to Public Health in a timely manner for entry into iPHIS. This is a barrier to a well-functioning immunization registry. As a result, money was received by Public Health to increase their immunization capacity. A project nurse has been hired to work with physicians to improve reporting. Changes have also been introduced to the vaccine handling, such as only releasing a month's worth at a time.

Workplace Health has the Workplace Health Indicator Tracking and Evaluation (WHITE) system in place, which allows the tracking of staff immunizations.

The health authority provides weak information system support for infection prevention, surveillance and control

Data collection and tracking for some infections provides a picture across the health authority

Data regarding MRSA, VRE and CDAD is collected at all acute care sites, thus providing a picture of their occurrence authority-wide. Information is shown over time, but it was not clear to us if all sites were using the same data definitions from year to year.

Although we did not see any monthly reports on reportable diseases, an annual report on communicable diseases in the authority is issued by Public Health. The last report we saw includes trend data for the period 1998–2004.

Data quality assurance systems are being developed to ensure consistency across the authority

To understand infection rates across the health authority, Fraser Health needs to be certain that the data being collected, analyzed and used is defined, interpreted and collected in the same way.

A November 2004 report on infection control surveillance noted that inter-hospital comparisons were not available because some sites reported only raw numbers, and common denominators were not used in reporting infection rates. As well, case finding methods varied across sites. We were told that before the Cochrane Review at Surrey Memorial Hospital, only three Infection Control Practitioners in Fraser Health knew how to do surveillance. Since then, the Special Projects Coordinator has been training the Infection Control Practitioners on surveillance methods and the importance of data definitions and data entry.

The data collection tool in place for hemodialysis access-associated bloodstream infections describes the inclusion criteria, case definition and the rate calculation. The tool for C. difficile surveillance provides the case definition as well as the rate calculation. A document describing surgical site infections, wound classifications and physical status classification also supports surgical site surveillance.

Reporting on prevention, surveillance and control of infections across Fraser Health is inconsistent

We expected to see regular reporting by the infection control program to the Health Authority Medical Advisory Committee, the senior executive team and the board, and to see that these groups were discussing the reports and initiating action or follow-up as appropriate.

Conclusion

Information about the infection control program is regularly received and discussed by the senior executive team. However, there is limited information going to the Board of Directors and the Health Authority Medical Advisory Committee, and there is no reporting by HAMAC to the Board of Directors on issues related to infection control.

Findings

Fraser Health uses infection control reports to support and improve infection control practice both at a site level and across the whole authority

As evidenced by our discussion under "Monitoring", we found that Fraser Health used reports and information to improve infection control practice across the authority and at the individual site level.

In addition to the ongoing surveillance, other studies are undertaken and result in the education of staff as well as changes in practice. In 2002/03, for example, a study of ventilator-associated pneumonias was done in the intensive care unit at Surrey Memorial Hospital and, as a result of the findings, a teaching program for staff was undertaken. A follow-up study in early 2004 showed that although there was an increase in ventilator days, the rate of ventilator-associated pneumonias had not increased. The report reinforced that teaching should continue, but that new evidenced-based strategies to decrease the rates of infection further were needed.

Reporting on prevention, surveillance and control of infections across Fraser Health is inconsistent

The results of audits at one site are shared across the authority to encourage appropriate practice. For example, an audit was conducted in the operating room at Royal Columbian Hospital and reported in 2003. It was a repeat of a previous audit and highlighted that some of the same issues existed (reinforcing the need for ongoing monitoring of practice). This report made a number of recommendations in regard to the use of personal protective devices, double gloving, adherence to a dress code, and sharps handling and cleaning. The review of the Family Birthing Unit as part of the Surrey Memorial Hospital review of caesarean section infection rates also raised some issues about gloves, use of skin disinfectants, and education of staff on selecting proper wound categorization. As a result of these reports, a memo was sent from the Vice-President, Quality and a Chief Operating Officer to Medical Directors, LMAC Chairs, Manager of Infection Control and Chair of Infection Control. The memo highlighted what had been learned and the resulting recommendations. It asked that practice be reviewed to ensure that all areas of responsibility meet the standards outlined in the recommendations. The memo also noted that some of the changes might impact departments that were not part of their portfolio and to ensure that the appropriate Managers and Directors receive the information. The senior executive team and the Chair of HAMAC received the memo as well.

As part of the C. difficile surveillance and efforts to manage it, the authority invested in and distributed throughout its facilities an additional 300 commode chairs for patient care.

Infection Control Practitioners also carry out small focused audits in their areas of responsibility (an example was an informal audit of cataract procedures conducted at the Chilliwack General Hospital Eye Centre).

In addition, the Fraser Health uses reports and information from other agencies to assess their own practices and make changes as required. For example, in November 2003, there was an issue in Ontario related to the reprocessing of trans-rectal ultrasound prostate biopsy probes. Fraser Health did a review of its reprocessing procedures and found that they were being done appropriately. However, the incident raised some questions about how other small patient-care items were being processed, so further study was done. This resulted in some changes to the reprocessing practices for those items.

Reporting on prevention, surveillance and control of infections across Fraser Health is inconsistent

The minutes of the various Infection Control Committees indicate that issues, actions and reviews are discussed and action taken as required.

Public Health also works to improve practices to manage communicable diseases. For example, it undertook a review of its HIV/AIDS follow-up and reporting program to ensure it was meeting best practice standards. The study was conducted in 2004 and a report, with recommendations, issued in March 2005.

Limited information is reported to the Board of Directors on the infection control program

The Board of Directors is ultimately accountable for the quality of medical care, and provision of appropriate resources, in the facilities and programs operated by Fraser Health. Thus the board has a role to play in the oversight of the infection control program either directly or through its Quality Performance Committee. The purpose of the Quality Performance Committee is to "recommend to the board for approval, effective processes established and maintained by management for monitoring overall corporate quality performance and to recommend to the board strategic actions and plans designed to continuously improve care and service to patients clients and residents, while reducing associated risks, throughout the health authority."

Detailed duties and responsibilities of the committee are shown in Exhibit 5

The committee is accountable to the board, reporting by distributing the minutes of its meetings and, where appropriate, by presenting oral or written reports at the board meetings. A schedule provided to us indicated that the Quality Performance Committee was to receive an infection control update in March 2005. The subsequent minutes reflect that this happened.

Reporting on prevention, surveillance and control of infections across Fraser Health is inconsistent

Exhibit 5

Excerpt of Duties and Responsibilities of the Quality Performance Measurement Committee

Subject to the powers and duties of the Board, the Committee will:

A. Provide leadership in promoting and supporting strategic plans designed to make overall improvements to quality of care and services;

B. Provide leadership in promoting and supporting implementation of the organizational quality framework relating to population health status, quality, risk management, organization performance and annual risk assessment;

C. Receive and regularly review summary reports of specified performance indicators; monitor the quality of care provided; monitor progress on strategic initiatives; monitor adherence and compliance of research and clinical ethics; observe trends; identify problem areas where further investigation may be warranted:

- Establish for Board approval, appropriate performance indicators relating to population health status, quality, risk management and organizational performance.

F. The Quality Performance Committee receives reports from the Health Authority Medical Advisory Committee on issues related to:

- Quality of medial care including, but not limited to, access, medical manpower and utilization.

Source: Fraser Health Quality Performance Committee Terms of Reference, Release 4 (May 2006)

The terms of reference for the Board of Directors note that it is also to receive regular reports from the Health Authority Medical Advisory Committee.

We reviewed the board minutes and the minutes of the Quality Performance Committee and found that there is limited information regarding infection control coming forward. Both bodies did receive information on major public health issues such as SARS, West Nile virus, avian flu and pandemic planning. However, there did not seem to be any surveillance reporting or reporting on trends of outbreaks.

Following the Cochrane Review of Surrey Memorial Hospital, there was increased attention given to infection control, but more specifically to the recommendations in the report rather than to the broader aspects of the infection control program. Although, in March 2005 following a presentation on the infection control program, the Quality Performance Committee passed a motion requesting the Vice-President Quality to provide a long-term plan to increase the number of Infection Control Practitioners within Fraser Health to the national Community and Hospital Infection

Reporting on prevention, surveillance and control of infections across Fraser Health is inconsistent

Control Association standard. In the event that the long-term plan cannot be implemented, the Vice-President Quality will provide the board Quality Performance Committee with the justification. Subsequent minutes did not reflect any reporting back regarding the motion.

We saw no evidence of reporting of issues related to infection control from the Health Authority Medical Advisory Committee to the board or the Quality Performance Committee. In fact, the September 2005 minutes of the Quality Performance Committee mention a discussion about the absence of Infection Control Committee reports/minutes to HAMAC, and note that a request was made to determine why HAMAC had received no reports and to rectify the situation before the audit by the Auditor General.

The senior executive team receives and discusses information and reports about the health authority's infection control program

The Vice-President of Quality, Patient Safety and Medical Leadership, is a member of the senior executive team and, as such, provides verbal updates on issues related to infection control. A review of the minutes of the senior executive team from early 2003 to 2005 indicated to us that issues related to infection control are on the agenda. What is not always clear is whether issues are resolved or action taken. For example, in December 2003, the Patient Safety Task Force submitted a report which noted that "at the time there were no unifying policies, procedures, structure or processes readily apparent to weave 'patient safety' into the day-to-day operations, planning or evaluation activities of the health authority. The magnitude of safety concerns in the authority is not known due to a lack of data gathering and existing culture of non-disclosure." Recommendations were made on the basis of short-term ("just do it"), mid-term (six months) and long-term (one year) and some next steps. The short-term recommendations included implementing consistent, focused infection surveillance measures and ensuring that the essential components of the program are in place. A next step was to build "safety" into the current process because resources will be required for system improvements, especially in infection control. It is not clear to us from the minutes whether any actions were initiated, and subsequent meeting minutes did not show any follow-up.

Reporting on prevention, surveillance and control of infections across Fraser Health is inconsistent

The minutes show that the senior executive team receives some surveillance reports, such as those on C. difficile, as well as discussion related to outbreaks and policy and procedures. The minutes periodically reflect some discussion of resources for infection control, but there does not appear to be any resolution or action evident in subsequent minutes. In fact, the minutes of early 2005 note that the budget does not address key quality initiatives or the findings of the Cochrane report. Presentations are also made to the senior executive team on current issues—for example, development of the new Health Act, pandemic planning and the "Safer Healthcare Now!" initiative.

Fraser Health Medical Advisory Committee does not regularly receive and review reports on infection control

HAMAC provides advice to the board and the CEO on: the provision of medical care within the facilities and programs operated by the authority, the monitoring of the quality and effectiveness of medical care, the adequacy of medical staff resources, and the continuing education of the medical staff. Specific duties of HAMAC include: receiving, reviewing and making recommendations on reports from quality review bodies and committees concerning the evaluation of clinical practice; submitting regular reports to the Board of Directors and CEO on the quality, effectiveness and availability of medical care provided; making recommendations, where appropriate, concerning the quality of medical care; and making recommendations, where appropriate, concerning the availability and adequacy of resources to provide appropriate patient care. As well, HAMAC advises on, and assists with, the development of an ongoing program in continuing medical education.

Membership of HAMAC includes medical staff appointed to medical leadership roles in the health authority, medical staff elected by the medical staff, the Medical Health Officer of the authority, the Senior Medical Administrator of the authority, the Chief Executive Officer as a non-voting member, and other senior administrative and medical staff as appropriate and as non-voting members.

There are two subcommittees of HAMAC: the Pharmacy and Therapeutics Committee and the Infection Control Coordinating Committee (ICCC). The terms of reference for the ICCC were approved in December 2003. The minutes of the December meeting

also note that it was suggested that the broader hospital-based Infection Control Committees remain in place, particularly at the larger hospitals.

In addition, there are Local Medical Advisory Committees (LMACs), which receive reports from the Infection Control Committees at each constituent hospital. The LMACs report to HAMAC, and the Chairs of the LMACs are members of HAMAC. As well, issues of infection control may go to the appropriate medical staff departments as required. For example, issues regarding surgical site infections would go to the Department of Surgery.

Our review of the minutes of HAMAC indicated that they received no minutes or reports from the ICCC until September 2005, even though the committee was meeting quarterly. Information regarding infection control issues was provided in verbal reports from the Medical Health Officer and the Vice-President of Quality, Patient Safety and Medical Leadership. In addition, all LMAC reports to HAMAC reflect some discussion of infection control issues at the individual site level. Since the Cochrane Report, we note, increased attention has been paid to infection control.

The Cochrane Report, released in December 2004, included a recommendation that "The Medical Advisory Committee and Administration review the subcommittee structure and terms of reference of the Surrey Memorial Hospital Medical Advisory Committee and the Health Authority Medical Advisory Committee to ensure that regular reports of matters required by the Medical Advisory Committee under the health authority bylaws are received and acted upon by the Medical Advisory Committee and are reported to the Fraser Health Authority Board and Administration as required." Subsequent to that recommendation, the HAMAC minutes reflect that there remained a lack of clarity about responsibilities and reporting regarding infection control. For example, the March 2005 minutes of HAMAC note that "all LMACs must have a process for infection control;" and the April 2005 HAMAC minutes note that "clearer direction on infection control for the sites is requested."

The October 2005 HAMAC minutes reiterate that: "LMACs are responsible for ongoing progress reports on local infection control activities. LMACs should make sure their local Infection Control

Reporting on prevention, surveillance and control of infections across Fraser Health is inconsistent

Committee is functioning and that appropriate reports are being processed through their LMAC. HAMAC will continue to work with the Infection Control Coordinating Committee." The minutes also reflect a motion from one of the LMACs that "increased resources be allocated to the severely understaffed Infection Control Service of the Fraser Health Authority in order that hospitals such as Delta are not excluded from surveillance of surgical site infections."

Medical staff can see reports on infection surveillance and control in a variety of ways. Some receive infection control information and reports through attendance at Medical Advisory Committee meetings or departmental meetings or through membership on an Infection Control Committee.

Fraser Health's external reporting on its infection control program is limited

The Health Act requires communicable diseases to be reported to Public Health and subsequently to the B.C. Centre for Disease Control, which receives the reports on behalf of the Provincial Health Officer (the centre then reports these diseases to the Public Health Agency of Canada). As well, the health authority must, as part of its Performance Agreement with the Ministry of Health, report on three measures related to immunizations: the rate of up-to-date immunizations for two-year-olds; the rate of influenza immunization for residents of care facilities; and the influenza immunization rates for health care workers.

We found that Fraser Health meets both of those reporting requirements.

In addition, Fraser Health issues a *Communicable Disease Report* that reviews communicable disease activity affecting the health authority. The 2004 report provides an executive summary which includes an overview and graphs showing the rates per 100,000 population for specific organisms. The report is available on the authority's website. The health authority also publishes the results of its housekeeping audits on its website.

However, we found no reporting on nosocomial (hospital-acquired) infection rates.

Fraser Health Authority Response

Planning for Infection Prevention, Surveillance and Control is Limited		
Findings/Area of Concern	**Status as of February 2007**	**Planned for 2007/2008**
Operating Plan does not have goal related to Infection Control (p. 5)	*Significant progress made towards establishing infrastructure for an Integrated Infection Control Program:* • *May-August 2005: Series of stakeholder consultations conducted to identify strengths and gaps in current model and optimal future state* • *October 2005: Stakeholder integrated model to align local and organization-wide planning and service delivery* • *January 2006: Confirmation of new model* • *Regional program with local delivery, increased integration, and matrixed accountability structure* • *Spring 2006: Roles created for Medical Director and Administrative Director and funding allocated by Executive Committee for phased development of new service delivery model* • *Summer 2006: present Recruitment underway for leadership positions; relationships between committees strengthened (ie between Fraser Health Infection Control Coordinating Committee and local Infection Control Committees, and with HAMAC, Board, and local Medical Advisory Committees)*	*Operating Plan and Strategic Plan will set specific goals and objectives for Infection Control as a patient safety priority for FH; these will reflect initiatives at the local, organizational, and provincial levels (PICNet). This will include key performance measures for surveillance to be reported to Board through the Infection Control Coordinating Committee.*
The Public Health communicable disease team has goals and objectives in place to provide direction (p.5)	*In Progress: All Infection Control stakeholders work together on initiatives to prevent and manage infections; ie outbreak management across the continuum (Norovirus, pandemic flu planning, emergency preparedness, etc) – done via existing subcommittees of the Infection Control Coordinating Committee, and task groups comprised of Infection Control, Public Health, Workplace Health, Medical Microbiology, Infectious Diseases.*	*Alignment of Infection Control and Public Health goals and objectives to ensure integrated planning and service delivery for infection prevention, surveillance and control. The new model will promote partnership at senior leadership level on establishing Regional performance objectives and measures, and collaboration on surveillance across service delivery areas (ie Acute Care, Home and Community Programs, Public Health, GPs' offices, Residential Services)*

Building its Infection Control Program to Ensure it meets Best Practice Standards requires Focused Attention		
Findings/Area of Concern	**Status as of February 2007**	**Planned for 2007/2008**
Infection Control manuals for Acute Care and Residential Care are not standardized or consistent across the health authority (p.8)	• *FH-wide Residential Services IC Manual completed and distributed across the organization in December, 2006.*	*Regional Acute Care Manual will be completed and standardized as per PICNet approach to a provincial, evidence-based manual. This will be linked with the new Residential Services Manual to promote continuity of evidence-based practice across various care delivery settings for similar patient and resident populations.*
	A Fraser Health Acute Care Infection Control Manual has been developed for all Acute Care areas, to replace pre-existing manuals in Fraser South, Fraser East and Fraser North – draft to be finalized from distribution by March 31, 2007. This manual cross-references components of the new Residential Manual to ensure continuity of standards and approach wherever applicable.	
Fraser Health has not been proactive in providing adequate focus and resources to infection control to support meeting best practice standards (pp. 9-15) • *Infection Control organization* • *Infection Control committees* • *Infection Control Practitioners* • *Medical Infection Control Officers* • *Workplace Health Staff* • *Physical environment* • *Supplies*	*Integrated IC service delivery model developed November/05 to address issues identified by Wray Consulting in review of the existing Program.* *Funding approved and job descriptions created for:* • *Administrative Director and Medical Director: (Recruitment efforts have been in progress for 6 months for both positions. Interviews currently underway.)* • *1-2 Managers;* • *2 additional ICPs and;* • *0.5 FTE Admin support (currently in place)* *The possibility of creating a dedicated epidemiologist position reporting to the Directors is also being pursued.* *The Infection Control Manager and Practitioners play a consultative role in plant design, construction and renovation projects across Fraser Health.*	*Complete recruitment process for key positions and implement new integrated service delivery model with Regional clinical and administrative direction and local delivery. This model provides regional medical and dedicated administrative leadership, and will establish critical partnerships, shared goals and objectives with stakeholders such as Workplace Health, Public Health, Residential Services and external partners (ie via PICNet and BC CDC). The Integrated Program will establish clear accountabilities for both IC service delivery and FH committees. The new service delivery model includes, in addition to enhanced management oversight, a role for each manager to lead a programmatic focus across FH, one of which is environmental planning and consultation for renovations or new construction projects and clinical products/supplies analysis. Increase in ICP FTEs will require additional financial resources which are yet to be identified and will need to be prioritized against other equally worthy activities.*

Building its Infection Control Program to Ensure it meets Best Practice Standards requires Focused Attention		
Findings/Area of Concern	**Status as of February 2007**	**Planned for 2007/2008**
Infection control education for staff after their initial orientation varies across the Health Authority (pp 15-16) • *Orientation* • *Ongoing education*	*Hand Hygiene Campaign underway with education for physicians and staff across FH.*	*Development of FH staff and physician education program under the direction of the Medical and Administrative Directors of Infection Control.*
	Infection Prevention and Control is covered at Fraser Health new employee orientation on Day Two (nurses only). *Infection Control involvement at local level Orientation is dependent upon local orientation program design.* *Ongoing education at practice level is site-based and informal, dependent upon capacity within the Infection Control Team.*	*Work with People Development to:* • *Ensure all new staff and physicians are provided with Infection Control orientation.* • *Standardize local orientation programs to include the same Infection Control content in all areas across Fraser Health.*
Infection Control Practitioners, Public Health Nurses and physicians involved with infection control use a variety of educational opportunities to maintain knowledge and certification (p. 16-17)	*Current FH IC entry requirement is baccalaureate degree; CIC is a secondary qualification in FH, as it is difficult for Infection Control Practitioners to obtain the formal educational preparation for this certification. (There is currently no educational program available in Canada for infection control specialization; thus most training occurs 'on the job' via senior staff mentoring).* *Fraser Health Infection Control staff participate in professional continuing education on a self-directed basis.*	*Revision of IC orientation and education resource manual as part of a comprehensive, formalized, ongoing learning plan for staff and physicians with infection prevention and control roles. This will be designed to complement work of PICNet related to education, and will be based on standardization of certification qualifications. The development and implementation will be coordinated with timing of PICNet activities and will occur through 07/08 and 08/09.*
Monitoring of infection control practices varies across the Health Authority (pp 17-25) • *Surveillance* • *Contract monitoring* • *Practice monitoring* • *External monitoring*	*Surveillance reporting on CDAD, MRSA and VRE, and NoroVirus across Fraser Health underway over the past year with a focus on establishing consistent use of case definitions. Sub-group of the Fraser Health Infection Control Coordinating Committee struck to provide KPI reporting to the Committee and Quality Council and onwards to HAMAC and the Board.*	*Establish a formal surveillance program enabling Infection Control KPIs to be regularly reported at organizational and provincial levels. Consistent data collection and analysis methods to be used in alignment with BC PICNet activities. The monitoring of these key areas of concern will enable decision-making and evaluation of improvement efforts to mitigate CDAD and MRSA and reduce infection rates.*
	Fraser Health Infection Control Practitioner participated as co-lead of PICNet SSI Working Group to develop recommendations for province-wide surveillance plan.	

Building its Infection Control Program to Ensure it meets Best Practice Standards requires Focused Attention		
Findings/Area of Concern	**Status as of February 2007**	**Planned for 2007/2008**
	The Fraser Health Surgical Clinical Services Planning and Delivery Team implementing key performance indicators as part of the NSQIP Initiative.	*Infection Control surveillance will be linked with monitoring of patient outcomes related to surgical site infection prevention efforts.*
	In progress: establishing set of Infection Control KPIs to be regularly reported at organizational level, using consistent data collection and analysis methods	*Monitoring of antibiotic use with clear accountability for evidence-based decision making under the leadership of the Medical Director, Infection Control and FH Pharmacy*
	The FH Hand Hygiene Audit has been widely communicated across FH; a project coordinator was recruited to develop and implement a Hand Hygiene Campaign over a 1-year timeframe. This initiative has been underway since Fall of 2006.	*Completion of the Hand Hygiene Campaign in Summer/07 evaluation of KPIs related to compliance and impact on patient safety/infection rates.* *Ongoing actions to sustain and continually improve Hand Hygiene compliance.*
	Infection Control Practitioners work with Public Health and Occupational Health and Safety to create comprehensive reports and effective communication of outbreak statistics affecting staff, patients, and the public.	*Collaboration between all key stakeholder groups to reduce variability and duplication of reporting (Microbiology, Infection Control, and Workplace Health with Public Health).*
The Health Authority is not actively involved in research to enhance the practice of infection control (p. 25)	*No formal research underway; however, both the Hand Hygiene Audit and surveillance data are used to improve infection control practices.*	*Explore research opportunities via the Medical Director, Infection Control.*

The Health Authority provides Weak Information System Support for Infection Prevention, Surveillance and Control		
Findings/Area of Concern	**Status as of February 2007**	**Planned for 2007/2008**
Fraser Health does not have a standardized reporting system in place for its infection control program, except for that in Public Health (pp. 26-27)	*This is fundamental to the ability to collect, analyze and report on infection control issues at every level of the system. Reports representing all acute care areas Fraser Health were provided for CDAD, Norovirus, C-section infections. MRSA reporting commenced, with a focus on establishing standard case definitions for nosocomial vs. community-acquired MRSA.*	*Determine most cost-effective means to collect, analyze and report on infection control and implement same. Work with PICNet to align Health Authority efforts with possible province-wide solution using standardized data definitions and ensuring data quality.*
Data collection and tracking for some infections provides a picture across the Health Authority (p. 27)	*Establishing set of Infection Control KPIs to be regularly reported at ICCC and Quality Council including the development of consistent data collection and analysis methods. This is work has been underway for 3 months.*	*Put systems in place to enable Infection Control KPIs to be regularly reported at organizational and provincial levels, using consistent data collection and analysis methods.* *Identify data collection methods that enable capture of data across continuum and outside FH (ie GP offices) and develop a feasible approach to same.*
Data quality assurance systems are being developed to ensure consistency across the Authority (pp.27-28)	*MRSA, VRE and CDAD data collected across all Acute Care sites.*	*Build upon current practice to align with PICNet data definitions and standardized collection procedures.*

Reporting on Prevention, Surveillance, and Control of Infections across Fraser Health is Inconsistent		
Findings/Area of Concern	**Status as of February 2007**	**Planned for 2007/2008**
Fraser Health uses infection control reports to support and improve infection control practice both at a site level and across the whole Authority (pp 29-30)	*Fraser Health Hand Hygiene Audit led to development of an organization-wide campaign to meet compliance targets and reduce nosocomial infection rates (ie VAP, SSI, MRSA) Infection Control reports have been used to target improvement efforts related to elective hip and knee surgery and implementation of best practices for prophylactic antibiotic timing, as well as VAP – two of the Safer Healthcare now! initiatives that Fraser Health is enrolled in.*	*Complete Hand Hygiene Campaign as per project plan and monitor KPIs for compliance and nosocomial infection rates; report at both local and organizational levels through operational leadership and committees responsible for patient safety and specifically infection control. The implementation plan consists of the following phases within which access to hand hygiene products, stakeholder education and change management, and monitoring of compliance and outcomes will be addressed:* • *Initial pilot site: March/April* • *Beta testing site: May/June* • *Spread to all acute care sites: July/August Health Promotion and Community Prevention portfolio: September*
Limited information is reported to the Board of Directors on the Infection Control Program (pp 30-32)	*As per above, funding enhancement proposal was presented to Executive in 2005 to increase capacity of Infection Control services, including systems to enable data collection, analysis and reporting. While 1/3 of the requested funding was acquired in 2006/07, recruitment into leadership and staff roles (to implement the FH Integrated Infection Control Program and meet surveillance and reporting requirements) has been challenging. In the meantime, a task group is working with PICNet to identify key performance measures and methods to enable regular reporting to the Board and Executive Committee via the FH Infection Control Coordinating Committee. There will be increased reporting of the ICCC to HAMAC.*	*Develop and implement Fraser Health-wide surveillance and reporting plan for regular submission to Board. Establish information systems to enable data collection and reporting.*
The senior executive team receives and discusses information and reports about the health authority's infection control program (p.32)	*Development of Infection Control indicators is underway. Cost analysis and impact of CDAD and MRSA infections completed. This information is shared with the CEO and Executive Team.*	*Build into Executive Committee Annual Organizational Objectives as a key component of the FH Patient Safety Strategy, including regular reports on KPIs to support decision-making, evaluation, and priority-setting. Specific objectives will include, in addition to the Hand Hygiene Campaign, a strategy for CDAD and MRSA.*

Reporting on Prevention, Surveillance, and Control of Infections across Fraser Health is Inconsistent		
Findings/Area of Concern	**Status as of February 2007**	**Planned for 2007/2008**
Fraser Health Medical Advisory Committee does not regularly receive and review reports on infection control (pp.33-34)	*HAMAC receives minutes of all ICCC meetings*	*HAMAC receives minutes of all ICCC meetings. VP Quality and Patient Safety to attend ICCC meetings. HAMAC will promote Infection Control principles and practises with physicians.*
Fraser Health's external reporting on its infection control program is limited (pp34-35)		*Prepare annual report with infection rates and types of infections, in alignment with PICNet public reporting framework.*

Appendices

Appendix A: List of reportable communicable diseases in British Columbia

Reportable Communicable Diseases (reportable by all sources)		List of Communicable Diseases (reportable by laboratories only)
Acquired Immune Deficiency Syndrome	Leprosy	All specific Bacterial and Viral Stool Pathogens: (i) Bacterial: Campylobacter; Salmonella; Shigella; Yersinia. (ii) Viral
Anthrax	Lyme Disease	Amoebiasis
Botulism	Measles	Borrelia Burgdorferi Infection
Brucellosis	Meningitis all causes: (i) Bacterial: Hemophilus; Pneumococcal; other (ii) Viral	Cerebrospinal Fluid Micro-organisms
Cholera	Meningoccocal Disease: All Invasive; Including Primary Meningococcal Pneumonia and Primary Meningococcal	Chlamydial Diseases including Psittacosis
Congenital infections:	Conjunctivitis	Cryptococcus neoformans
Toxoplasmosis, Rubella, Cytomegalovirus, Herpes Simplex, Varicella-zoster, Hepatitis B Virus, Listeriosis, and any other Congenital Infection	Mumps	Herpes Genitalis
Cryptosporidiosis	Neonatal Group B Streptococcus Infection	Human Immunodeficiency Virus
Cyclospora Infection	Paralytic Shellfish Poisoning (PSP)	Influenza
Diffuse Lamellar Keratitis (DLK)	Pertussis (Whooping Cough)	Legionellosis
Diphtheria: cases, carriers	Plague	Leptospirosis
Encephalitis: Post-infectious, Subacute Sclerosing Panencephalitis, Vaccine-related, Viral.	Poliomyelitis	Listeriosis
Food-borne illness: All Causes	Rabies Reye's Syndrome	Malaria
Gastroenteritis epidemic: Bacterial, Parasitic, Viral	Rubella: Congenital Rubella Syndrome	Q fever
Genital Chlamydia Infection	Severe Acute Respiratory Syndrome	Rickettsial Diseases
Giardiasis	Smallpox	Severe Acute Respiratory Syndrome
Haemophilus Influenza Disease, All Invasive by Type	Tetanus	Smallpox
Hantavirus Pulmonary Syndrome	Transfusion Transmitted Infection	Tularemia
Hemolytic Uremic Syndrome	Tuberculosis	West Nile Virus Infection
Hemorrhagic Viral fevers	Tularemia	
Hemorrhagic Viral fevers	Typhoid Fever and Paratyphoid Fever	
Hepatitis Viral: Hepatitis A; Hepatitis B; Hepatitis C; Hepatitis E; other Viral Hepatitis	Venereal Disease: Chancroid; Gonorrhea – all sites; Syphilis	
Human Immunodeficiency Virus	Waterborne Illness: All causes	
Invasive Group A Streptococcal Disease	West Nile Virus Infection	
Invasive Streptococcus Pneumoniae Infection	Yellow Fever	

Source: Health Act Communicable Disease Regulation (BC Reg. 281/2004)

Appendix B: Canadian Standards Association infection control during construction or renovation of health care facilities (April 2003)

The standard describes precautionary and remedial measures for preventing exposure to agents, released or augmented, because of actions undertaken during health care facility construction, renovation, maintenance, and repair work.

Preventive measures are categorized as I, II, III and IV and are put in place for all stages of construction activity—before, during, and after. The prevention measures required are based on the analysis of population risk group and type of construction activity. Table 1 shows a preventive measures analysis and includes the use of information from Tables 2 and 3.

Table 1: Preventive Measures Analysis

Population Risk Group[1]	Construction activity type[2]			
	Type A	Type B	Type C	Type D
Group 1	I	II	II	III/IV
Group 2	I	II	III	IV
Group 3	I	III	III/IV	IV
Group 4	I – III*	III/IV	III/IV	IV

[1] See Table 2 to determine population risk group

[2] See Table 3 to determine construction activity

* When the risk group is Group 4 and construction activity is Type A, the infection prevention and control department shall be consulted to determine the appropriate preventive measure (I, II, or III).

Table 2: Population Risk Groups and Geographical Areas (Examples only)

Population Risk Group	Typical areas
Group 1 Lowest Risk	Office areas Public areas Physical plant workshops and housekeeping areas
Group 2 Medium Risk	Outpatient clinics (except oncology and surgery) Admission and discharge units Physical therapy areas remote from patient care areas

Appendix B

Population Risk Group	Typical areas
Group 3 Medium to high risk	Emergency (except trauma rooms) Nurseries for healthy newborns Geriatrics Nuclear medicine
Group 4 Highest risk	Intensive care units Oncology units and outpatient clinics for cancer patients Burn care units Trauma rooms Operating rooms Sterile supply areas

Table 3: Construction Activity Type (Examples only)

Construction Activity Type	Description
Type A	Inspection and non-invasive activities. These include but are not limited to: a) activities that require removal of no more than one ceiling tile or require wall or ceiling panels to be opened; and b) electrical trim work.
Type B	Small scale, short duration activities that create minimal dust. These include, but are not limited to: a) activities that require access to chase spaces; and b) plumbing work that disrupts the water supply of more than one patient care area (i.e., two or more rooms) for less than 30 minutes.
Type C	Activities that generate a moderate to high level of dust; require demolition; require removal of a fixed building component (e.g., sink) or assembly (e.g., countertop, cupboard); or cannot be completed in a single work shift. These include but are not limited to, a) activities that require sanding of a wall in preparation for painting or wall covering; b) removal of floor coverings, ceiling tiles, and casework; c) electrical work above ceilings.
Type D	Activities that generate high levels of dust and major demolition and construction activities requiring consecutive work shifts to complete. These include but are not limited to: a) activities that involve heavy demolition or removal of complete cabling systems; and b) plumbing work that disrupts the water supply of more than one patient care area (i.e., two or more rooms) for more than 1 hour.

Appendix C: Office of the Auditor General: Performance Auditing Objectives and Methodology

The Office has three lines of business:

- examining the reliability of the provincial public sector's financial reporting;
- assessing how well the public sector manages its key risks; and
- assessing the quality of provincial public sector performance reports.

Each of these lines of business have certain objectives that are expected to be achieved, and each employs a particular methodology to reach those objectives. The following is a brief outline of the objectives and methodology applied by the Office for assessing how well the public sector manages its key risks.

Performance Auditing

What are Performance Audits?

Performance audits (also known as value-for-money audits) examine whether money is being spent wisely by government —whether value is received for the money spent. Specifically, they look at the organizational and program elements of government performance, whether government is achieving something that needs doing at a reasonable cost, and consider whether government managers are:

- making the best use of public funds; and
- adequately accounting for the prudent and effective management of the resources entrusted to them.

The aim of these audits is to provide the Legislature with independent assessments about whether government programs are implemented and administered economically, efficiently and effectively, and whether Members of the Legislative Assembly and the public are being provided with fair, reliable accountability information with respect to organizational and program performance.

Appendix C

In completing these audits, we collect and analyze information about how resources are managed; that is, how they are acquired and how they are used. We also assess whether legislators and the public have been given an adequate explanation of what has been accomplished with the resources provided to government managers.

Focus of Our Work

A performance audit has been described as:

...the independent, objective assessment of the fairness of management's representations on organizational and program performance, or the assessment of management performance, against criteria, reported to a governing body or others with similar responsibilities.

This definition recognizes that there are two forms of reporting used in performance auditing. The first—referred to as attestation reporting—is the provision of audit opinions as to the fairness of management's publicly reported accountability information on matters of economy, efficiency and effectiveness. This approach has been used to a very limited degree in British Columbia because the organizations we audit do not yet provide comprehensive accountability reports on their organizational and program performance.

We believe that government reporting along with independent audit is the best way of meeting accountability responsibilities. Consequently, we have been encouraging the use of this model in the British Columbia public sector, and will apply it where comprehensive accountability information on performance is made available by management.

As the performance audits conducted in British Columbia use the second form of reporting—direct reporting—the description that follows explains that model.

Our "direct reporting" performance audits are not designed to question whether government policies are appropriate and effective (that is achieve their intended outcomes). Rather, as directed by the Auditor General Act, these audits assess whether the programs implemented to achieve government policies are being administered economically and efficiently. They also evaluate whether Members of the Legislative Assembly and the public are being provided

with appropriate accountability information about government programs.

When undertaking performance audits, we look for information about results to determine whether government organizations and programs actually provide value for money. If they do not, or if we are unable to assess results directly, we then examine management's processes to determine what problems exist or whether the processes are capable of ensuring that value is received for money spent.

Selecting Audits

All of government, including Crown corporations and other government organizations, are included in the universe we consider when selecting audits. We also may undertake reviews of provincial participation in organizations outside of government if they carry on significant government programs and receive substantial provincial funding.

When selecting the audit subjects we will examine, we base our decision on the significance and interest of an area or topic to our primary clients, the Members of the Legislative Assembly and the public. We consider both the significance and risk in our evaluation. We aim to provide fair, independent assessments of the quality of government administration and to identify opportunities to improve the performance of government. Therefore, we do not focus exclusively on areas of high risk or known problems.

We select for audit either programs or functions administered by a specific ministry or government organization, or cross-government programs or functions that apply to many government entities. A large number of such programs and functions exist throughout government. We examine the larger and more significant of these on a cyclical basis.

Our view is that, in the absence of comprehensive accountability information being made available by government, performance audits using the direct reporting approach should be undertaken on a five- to six- year cycle so that Members of the Legislative Assembly and the public receive assessments of all significant government operations over a reasonable time period. We strive to achieve this schedule, but it is affected by the availability of time and resources.

Appendix C

Planning and Conducting Audits

A performance audit comprises four phases—preliminary study, planning, conducting and reporting. The core values of the Office—independence, due care and public trust—are inherent in all aspects of the audit work.

Preliminary Study

Before an audit starts, we undertake a preliminary study to identify issues and gather sufficient information to decide whether an audit is warranted.

At this time, we also determine the audit team. The audit team must be made up of individuals who have the knowledge and competence necessary to carry out the particular audit. In most cases, we use our own professionals, who have training and experience in a variety of fields. As well, we often supplement the knowledge and competence of our staff by engaging one or more consultants to be part of the audit team.

In examining a particular aspect of an organization to audit, auditors can look either at results, to assess whether value for money is actually achieved, or at management's processes, to determine whether those processes should ensure that value is received for money spent. Neither approach alone can answer all the questions of legislators and the public, particularly if problems are found during the audit. We therefore try to combine both approaches wherever we can. However, because acceptable results-oriented information and criteria are often not available, our performance audits frequently concentrate on management's processes for achieving value for money.

If a preliminary study does not lead to an audit, the results of the study may still be reported to the Legislature.

Planning

In the planning phase, the key tasks are to develop audit criteria—"standards of performance"—and an audit plan outlining how the audit team will obtain the information necessary to assess the organization's performance against the criteria. In establishing the criteria, we do not expect theoretical perfection from public sector managers; rather, we reflect what we believe to be the reasonable expectations of legislators and the public.

Appendix C

Conducting

The conducting phase of the audit involves gathering, analyzing and synthesizing information to assess the organization's performance against the audit criteria. We use a variety of techniques to obtain such information, including surveys, and questionnaires, interviews and document reviews.

Reporting Audits

We discuss the draft report with the organization's representatives and consider their comments before the report is formally issued to the Legislative Assembly. In writing the audit report, we ensure that recommendations are significant, practical and specific, but not so specific as to infringe on management's responsibility for managing. The final report is tabled in the Legislative Assembly and referred to the Public Accounts Committee, where it serves as a basis for the Committee's deliberations.

Reports on performance audits are published throughout the year as they are completed, and tabled in the Legislature at the earliest opportunity. We report our audit findings in two parts: an Auditor General's Comments section and a more detailed report. The overall conclusion constitutes the Auditor General's independent assessment of how well the organization has met performance expectations. The more detailed report provides background information and a description of what we found. When appropriate, we also make recommendations as to how the issues identified may be remedied.

It takes time to implement the recommendations that arise from performance audits. Consequently, when management first responds to an audit report, it is often only able to indicate its intention to resolve the matters raised, rather than to describe exactly what it plans to do.

Without further information, however, legislators and the public would not be aware of the nature, extent, and results of management's remedial actions. Therefore, we publish updates of management's responses to the performance audits. In addition, when it is useful to do so, we will conduct follow-up audits. The results of these are also reported to the Legislature.

Appendix D: Office of the Auditor General: 2006/07 Reports Issued to Date

Report 1 – April 2006

Strengthening Public Accountability: A Journey on a Road that Never Ends

Report 2 – September 2006

The 2010 Olympic and Paralympic Winter Games: Review of Estimates Related to the Province's Commitments

Report 3 – November 2006

Audit of Treaty Negotiations in British Columbia: An Assessment of the Effectiveness of British Columbia's Management and Administrative Processes

Report 4 – December 2006

Province of British Columbia Audit Committees: Doing the Right Things

Report 5 – December 2006

Audit of Government's Corporate Accounting System: Part 2

Report 6 – December 2006

Monitoring Government's Finance Province of British Columbia

Report 7 – December 2006

Government's Post-secondary Expansion — 25,000 Seats by 2010

Report 8 – December 2006

Changing Course — A New Direction for British Columbia's Coastal Ferry System: A Review of the Transformation of BC Ferries

Appendix D

Report 9 – January 2007

Seeking Best Practices in Financial Reporting: Report on the Province's 2005/06 Public Accounts

Report 10 – February 2007

Follow-up of 2004/2005 Report 2: In Sickness and in Health: Healthy Workplaces for British Columbia's Health Care Workers

Report 11 – March 2007

Infection Control: Essential for a Healthy British Columbia
The Provincial Overview

This report and others are available on our website at:
http://www.bcauditor.com