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Infection Control: Essential for a Healthy British Columbia

Interior 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.

Interior Health Authority

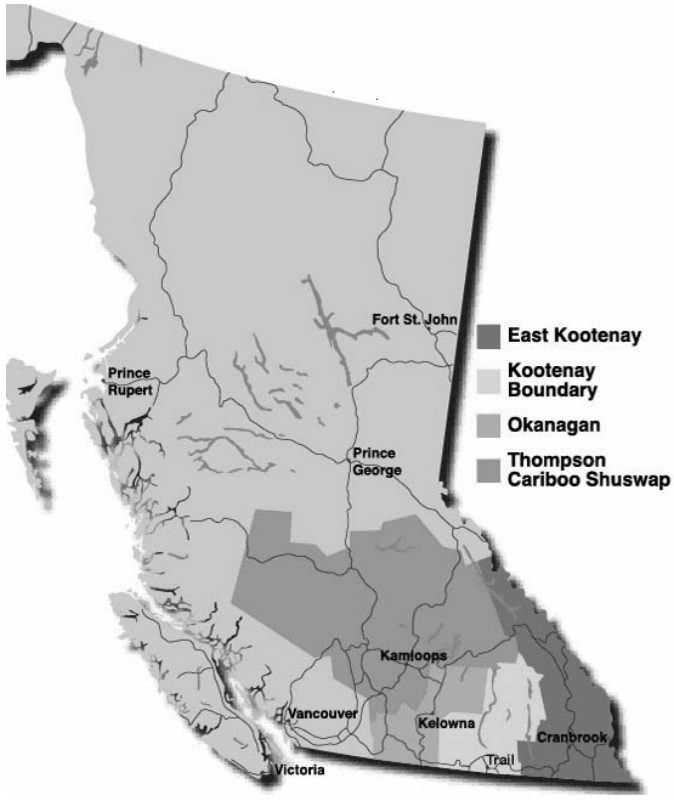
The Interior Health Authority serves a population of just under 700,000 spread over an area of approximately 216,000 square kilometres, stretching from the Cariboo-Chilcotin east across to the Rocky Mountains and south to the Canada/US border. It is an area that includes rural and remote communities as well as some of the fastest-growing urban areas in the province.

To provide services to this diverse region and population, the health authority has been divided into four Health Service Areas:

- Thompson Cariboo Shuswap
- Okanagan
- East Kootenay
- Kootenay Boundary

Background

Interior Health employs approximately 17,000 staff and has approximately 1,050 practising physicians with privileges in the health authority.



Overall Conclusion

The Interior Health Authority does not have a comprehensive integrated infection control program and is taking steps to change this. It has identified areas of concern in its infection control program and has started putting effective systems in place for the prevention, surveillance and control of infections across all service delivery responsibilities.

As it moves forward, the health authority needs to ensure that its infection control program maintains strong links to Public Health and that planning for infection control is integrated.

Planning for infection prevention, surveillance and control is being undertaken in the health authority, but not in an integrated way across all areas of care

The Interior Health Authority 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). We therefore expected to find that planning for infection prevention, surveillance and control had been integrated across the care continuum.

Conclusion

Interior Health has established direction for public and population health through its Health Services and Budget Management Plan; and for facility care through an action plan developed in response to an internal audit report on infection control practices (and which was also included in its Health Services and Budget Management Plans).

However, the authority does not have an overall detailed integrated plan in place for infection prevention, surveillance and control across the continuum of care.

Findings

The authority's Health Services and Budget Management Plan 2004/05 – 2006/07 contains actions specific to public and population health and calls for a review of infection control practices

The Health Services and Budget Management Plan of the Interior Health Authority (Interior Health) is meant to demonstrate the alignment between the health authority's strategic direction and its Performance Agreement with the Ministry of Health, as well as with the Provincial Health Goals. This plan contains specific strategies for public and population health, and a strategy — in the area of quality, risk and accreditation — to review infection control practices:

- In *the public and population health portfolio*, the emphasis is on increasing rates of immunization, developing Interior Health's standards for communicable disease response, and enhancing capacity for assessment and surveillance by initiating a surveillance program in Residential Care and identifying infection control indicators. There is also a focus on integrated strategies and, specifically, integration of the infection control services provided in Acute, Public Health, Residential Services and Community Care.

- The *quality, risk and accreditation portfolio* notes that Interior Health is committed to creating and fostering a culture of continuous quality improvement and, within that context, will undertake a review of infection control practices to national standards.

The strategies of both public and population health and the review of infection control practices are all very positive. However, they are being done in isolation from each other rather than being examined as an integrated whole.

The recommendations of the authority's 2004 internal audit focus on improving infection prevention, surveillance and control in acute and residential care facilities

An initial risk assessment in 2003 by Interior Health identified infectious disease emergency preparedness outbreaks as a concern. An audit of the health authority was planned, but before it even started, outbreaks of SARS (Severe Acute Respiratory Syndrome) in Canada and elsewhere demonstrated dramatically that good infection control practices were critical in reducing the spread of infectious diseases.

As a result of the lessons learned from SARS, and in consultation with the Senior Medical Health Officer, Interior Health agreed to refocus the audit on infection control practices in acute and residential care facilities. The audit set out to examine whether infection control practices across Interior Health were meeting Health Canada guidelines, and if not, to assess the residual risk of non-compliance. (Residual risk is the risk remaining after it has been determined whether current infection control practices at Interior Health meet minimum guidelines issued by Health Canada.)

Twelve acute care sites and nine residential care facilities (excluding contracted non-amalgamated residential care facilities) were sampled in the health authority. A facility self-assessment, audit team site visits, interviews and critical observation were carried out.

The audit found several weaknesses in the infection control program and made a number of recommendations, which, at the time of our audit, Interior Health was in the process of implementing. Some of our findings therefore reflect those of the internal audit.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

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. These 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

Interior Health has identified weaknesses in its ability to meet best practices in infection prevention, surveillance and control, and it is addressing the areas of concern through organizational changes, capacity building and the addition of resources.

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 with guidance in dealing with specific infections. These manuals are available both in hard copy and online to all departments and programs in the authority. However, the manuals are not always consistent across the health authority or kept up-to-date. It was also unclear to us if there were sections in the manual that covered other services such as mental health, addictions, and home and community care. The manuals that are in place reflect the previous regional health care delivery structure. A new authority-wide manual for acute care and residential care is under development, but progress has been slow. Any new policies that are developed are done for Interior Health as a whole.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

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

For Public Health, the *Communicable Disease Control Manual* is available online from the B.C. Centre for Disease Control and a hard copy is available in all Public Health offices. Updates or changes to the policies are sent out by the centre and then it is up to each Public Health office to ensure those changes are communicated to staff.

Interior Health is providing focus and resources to infection control in support of meeting best practice standards

As a result of the internal audit done in 2004 and Interior Health's June 2005 accreditation report from the Canadian Council on Health Services Accreditation (CCHSA), the authority's infection control program was in the midst of a number of changes at the time we were conducting our audit.

Infection Control Organization

In response to the internal audit report, a senior executive was assigned as the lead to ensure implementation of the recommendations contained in the report. At the time of our fieldwork, there was still uncertainty about who the program would report to on a permanent basis. There was some discussion of it becoming part of the performance management portfolio, which has lead responsibility for quality and safety across the authority, or falling under the direction of the Senior Medical Director, who has responsibility for the medical staff. Because other changes were well underway, the reporting in the interim has been through the assigned executive staff member. A joint management structure for the program has also been put into place. This included hiring an Infection Control Physician under contract for the fiscal year 2005/06 and recruiting an Infection Control Practice Leader. The role of these two individuals is to further develop the program, manage it on an authority-wide level and provide support to the Infection Control Practitioners in the Health Service Areas.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

Public Health's communicable disease control remains a separate entity from the infection control program, under the direction of the Senior Chief Medical Health Officer for the health authority.

There are a number of groups that are key to an infection control program. Some of these 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. As part of that responsibility, HAMAC has created a subcommittee, the Health Authority Infection Prevention and Control Committee (HA IPCC). This subcommittee recommends policies and procedures for the control and prevention of infections in Interior Health facilities, and monitors the occurrences of infections and the interventions to limit occurrences. (Terms of reference of the HA IPCC are shown in Exhibit 1)

The Medical Infection Control Officer chairs the HA IPCC and, though not a member of the HAMAC, does attend the HAMAC meetings as a non-voting member. The Senior Medical Health Officer is a member of the HAMAC.

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Exhibit 1

Health Authority Infection Prevention and Control Committee Terms of Reference

Preamble: The Health Authority Infection Prevention and Control Committee (HA IPCC) is a Standing Committee of the Health Authority Medical Advisory Committee "HAMAC" for Interior Health.

Purpose:

- The HA IPCC makes recommendations regarding policies and procedures for use within IHA facilities regarding control and prevention of infections.
- The HA IPCC monitors the occurrences of infections as well as the interventions used to limit their occurrences.

Composition:

- The Chairperson will be the Physician Leader for Infection Control.
- Representation will come from all Health Service Areas (HSAs) as well as from enterprise-wide programs such as Public Health.
- The following disciplines will be represented on the committee: Infectious Diseases, Clinical Microbiology, Public health, Pharmacy, Surgery, Pediatrics, General Practice, Intensive care, geriatrics, Nursing, Housekeeping, residential care Services, Chairs of the Regional Infection Control Committees (ICCs), Infection Control Practitioners, and Senior Management.
- Medical Appointments to the committee, as noted in the HAMAC Terms of Reference, will be made by HAMAC with no limit to the number of terms an individual physician may serve.

Duties and Responsibilities:

- Quality of care. The HA IPCC shall ensure that policies and procedures, which limit the likelihood of an infection being acquired while under the care of the health authority, are prepared and implemented. The HA IPCC:
    - i) Will receive reports on the frequency and rates of Health Authority acquired infections.
    - ii) Will review provincial, national and international guidelines, and relevant published literature, as appropriate for development of health Authority policies and procedures.
    - iii) Will, following the review (see ii), recommend policies and procedures that are effective in increasing the safety of patients, clients and employees.
- HA IPCC will collaborate with public health to ensure that prevention strategies are consistent with the strategies used in the community.
- HA IPCC will ensure public health is notified of infections as required by the Public Health Act in the province.
- HA IPCC will encourage applied research in the area of infection prevention and control within facilities.
- At the call of the Chair, the HA IPCC may convene as a quality assurance committee as per Section 51 of the Evidence Act.

Reporting Relationships

The HA IPCC will report, via the minutes to the HAMAC, the Senior Executive Team, and to the Board Quality Care Committee.

The Senior Medical Director for the health authority is designated as the SET member responsible for the HA IPCC.

Source: Interior Health Authority

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In addition to the authority-wide structure, there are Medical Advisory Committees for each Health Service Area and at some acute care facilities. There is also a mix of Infection Control Committees: some exist at the site level and others at the Health Service Area level. At these levels, the Infection Control Committees report to their local Medical Advisory Committees, which in turn report to the authority-wide HAMAC. Membership on these Infection Control Committees varies by area, but generally includes a cross-section of staff from Acute Care, Residential and Community Care, and Public Health.

In addition to the medical committee structure, an Interior Health Authority Infection Control Practice Committee is responsible for: developing policies and procedures as recommended by HA IPCC; ensuring policy implementation; educating employees about infection prevention and control practices; advocating for activities that prevent and control infections; and identifying infection prevention and control issues. Committee membership includes Infection Control Practitioners from each Health Service Area, a communicable disease representative for Public Health, a Workplace Health and Safety representative, the Medical Infection Control Officer, housekeeping and others as required.

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.

The 2004 internal audit report identified that the health authority required an additional 11.9 positions if it was to have the personnel in place to meet the guidelines. In February 2005, the senior executive team approved the hiring of 10.5 full-time-equivalent (FTE) Infection Control Practitioners. At the time of our audit, many of the positions had been filled, although hiring was ongoing. We noted at that time that only the Central Okanagan area had Infection Control Practitioners dedicated specifically to residential

care. Throughout the remainder of the health authority, the Infection Control Practitioners were providing service to both acute care and residential care, as well as acting as a resource to home and community care as needed. This is not conducive to good infection management. However, we were told that some realignment of personnel would occur once all positions were filled.

In December 2005, the health authority had 18.5 FTE Infection Control Practitioners, including the Infection Control Practice Leader, to support 1,157 acute/rehabilitation beds and 2,587 permanent and 197 temporary owned and operated residential care beds. This level of staffing meets the guidelines based on the maximum ratios. It must be noted, however, that at this level of staffing there is very little support being offered to staff providing home care services or other community-based programs such as mental health and addictions.

In addition, Interior Health has contracts with third-party operators of 1,297 permanent and 113 temporary residential care beds. It does not provide Infection Control Practitioners to these facilities, but it does have oversight responsibilities to ensure that standards are met. This is done both through Public Health licensing and through contract management.

The position descriptions in place for the practitioners tend to be site-specific such as for Royal Inland Hospital and Vernon Jubilee Hospital. In the case of the East Kootenay Health Service Area, the individual is also the Manager of the Central Sterile Processing Department. However, we found that all had similar responsibilities, including policy development, staff education and surveillance. Of some concern to us was the fact that the approval dates for the position descriptions ranged from 1994 to 2004.

Within Public Health, there are four senior staff responsible for communicable disease control who then rely on all Public Health Nurses for management and follow-up of any identified cases. Environmental Health Officers are also an important component of infection control, as they have responsibilities for enteric disease outbreaks.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

Medical Infection Control Officers

A Physician Leader for Infection Control was appointed in April 2005 for the fiscal year 2005/06. A position description was not available at the time of our audit, but our interviews indicated that the Physician Leader, in conjunction with the Infection Control Practice Leader, was responsible for continuing to develop the program, manage it and provide support to the Infection Control Practitioners.

As noted above, the infection control program reflects acute and residential care in particular. It is not clear if its responsibility extends to programs in the community such as home care or mental health clinics. Public Health remains the responsibility of the Senior Medical Health Officer.

The Senior Medical Health Officer and the Medical Health Officers located in the Health Service Areas also provide guidance and advice to the infection control program as needed.

Although not directly having responsibility for the infection control program, other physicians at different sites offer support to the program either because of their specialty (such as a medical microbiologist or infectious disease specialist) or because of chairing an Infection Control Committee.

Medical microbiologists supported by the laboratory staff play a key role in the infection control program, as they are instrumental in diagnosing infectious organisms and understanding their susceptibility or resistance to antibiotics.

Workplace Health and Safety Staff

The Workplace Health and Safety 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); and taking appropriate steps if staff become infected with an organism.

There are authority-wide policies regarding infection control issues affecting employee health (e.g., management of exposure to measles). The policies are posted on the intranet and are on some units in hard copy. Workplace Health and Safety's policies are cross-referenced with infection control policies.

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Workplace Health and Safety staff participate on the Infection Control Committees both at the regional level and at the site level. As well, Workplace Health and Safety staff, Infection Control Practitioners and Public Health staff work very closely on a number of issues such as the annual influenza campaign and immunization strategy.

We did hear that the line between Workplace Health and Safety staff and Infection Control Practitioners was blurred on occasion, because the latter were doing immunizations at some sites, as well as fit-testing for the N95 mask.

Physical Environment

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

Across the 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. However, we also heard that initiatives are underway to try to mitigate some of the risks created by the age and design of facilities, especially those that were highlighted during the SARS (Severe Acute Respiratory Syndrome) outbreak. SARS resulted in Interior Health undertaking a review of the number of negative pressure rooms available in the authority and subsequently developing a plan to increase their availability. Increasing the supply was done through upgrades to existing rooms, new construction and making available portable ventilation units where renovations and/or new construction was not being undertaken in the short term. In February 2005, there were upgrades of over $2.5 million yet to be completed. Shortcomings in the number and location of sinks are being addressed partly by the installation of waterless hand washing dispensers throughout facilities in the authority. For staff who practise outside facilities (such as in Public Health and Home and Community Care), sinks may not always be accessible for hand washing, so the waterless hand washing product is carried with them.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

The Standards Council of Canada has a standard called "Infection Control during Construction or Renovation of Health Care Facilities." This addresses risk stratification of facility areas and populations, descriptions and stratification of construction activity, and the roles and responsibilities of those involved with such activities (see Appendix B for a more detailed description). We heard from the Infection Control Practitioners that they were involved in planning and monitoring of construction/renovation activity. Some Infection Control Practitioners also included this information in their reports at the local level and it was a topic of discussion at the Infection Control Practice Committee.

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 would be involved if housekeeping wanted to introduce a new disinfectant, or if materials management staff were considering the purchase of a different mask, isolation gown or syringe.

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 a supply of masks, gloves and waterless hand washing products with them.

Except for Public Health Nurses, education for staff after their initial orientation is on an ad hoc basis

Orientation

All staff joining Interior Health receive a one-day regional orientation that includes a component on infection control. Discussed in the session are the infection control program, routine and transmission-based precautions, antibiotic-resistant organisms, personal protective equipment and hand washing. Workplace Health and Safety is also covered in the general orientation, which is relevant to infection control, especially in the area of immunizations and communicable diseases.

Following the regional orientation, nursing staff are provided an additional 30 minutes focused on infection control. This session

specifically covers the antibiotic-resistant organism (ARO) screening protocol, routine precautions and isolation, and a demonstration of N95 respirator seal checks.

As well, all staff receive an orientation of their specific work area, which for some staff also includes an additional focus on infection control. For example, housekeeping staff are partnered with another staff member and clean an isolation room under supervision.

There is no formal orientation for new physicians joining the medical staff of Interior Health. There may be a tour of the facility where the physician will be practising, but nothing is provided regarding infection control.

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. Most education is provided on a one-to-one, informal basis and 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. He or she may also work with staff educators in some areas, who in turn educate the staff on infection control.

We frequently heard how difficult it is to offer more formal scheduled training sessions because staff are unable to get away easily from their work situation to attend.

Because most education is ad hoc and one-on-one, there is no reliable record of who has received what education about infection control practice.

Public Health Nurses have a more formal approach to education. They are brought together for two days in the spring and in the fall for meetings and education sessions that cover a variety of topics.

No ongoing education related specifically to infection control has been set for medical staff, although it could be a topic at a medical continuing education session. Infection control issues may come up as part of morbidity and mortality rounds, or be a topic of discussion at a departmental or medical staff meeting. The Medical Health Officers try to keep medical practitioners up-to-date on emerging pathogens and changes in communicable disease issues through newsletters, electronic communication and medical staff meetings.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

Education for Infection Control Practitioners is evolving with changes to Interior Health's program

With the decision to hire a significant number of Infection Control Practitioners, the health authority was aware that not all new staff would be qualified Infection Control Practitioners and that it would need to put in place educational programs and supports. As a result, the health authority contracted with a consultant in July 2005 to begin the development of an orientation program for new Infection Control Practitioners. This included creating a two-year learning and work experience plan and learning modules for a number of topics (e.g., outbreak management and surveillance). In addition, the consultant was to ensure that all educational materials were directed at supporting the preparation of the novice Infection Control Practitioners to write the certification exams following their two-year work experience.

The health authority also supported its novice Infection Control Practitioners by paying their enrolment fees in an infection control course for new practitioners at the University of Calgary.

For more experienced practitioners, there is not a requirement for 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. As well, Interior Health has subscribed to Webber Teleclasses, which are educational sessions on a variety of topics relevant to Infection Control Practitioners. Some examples include: Measuring the Cost of Hospital Infection, Measuring the Value of Hospital Infection Control; Emerging Infectious Disease; and Disinfectants and Environmental Impact.

To maintain certification, Infection Control Practitioners must write and pass a re-certification exam every five years.

Public Health Nurses responsible for immunizations must be certified every three years. To be certified, they must pass an exam and be observed setting up a clinic, assessing clients, giving vaccinations and documenting their work in the public health information system.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

Monitoring of infection control practices is not consistent 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 Interior Health generally varies across each Health Service Area and even by site because the activity currently depends on the availability, skill and knowledge of the Infection Control Practitioner. Surgery was one service where we expected to see surveillance in place across the authority (and if not for all surgeries, at least for some specialties), but even in this area we found variability across the authority.

Regional surveillance is in place for vancomycin-resistant enterococcus, methicillin-resistant staph aureus, and Clostridium difficile (C. difficile) associated disease, but reporting appears to be by Health Service Area and not consolidated to provide a report for the authority overall.

Interior Health is participating in a 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.

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. Exhibit 2 is an example of an excerpt of the information provided for one of the components of care related to preventing ventilator-associated pneumonia.

Exhibit 2

Excerpt from an Information Kit Describing a Care Component for Preventing Ventilator-Associated Pneumonia (VAP)

Components of Care

1. Elevation of the Head of the Bed

Elevation of the head of the bed is an integral part of the VAP Bundle and has been correlated with reduction in the rate of ventilator-associated pneumonia. The recommended elevation is 30 – 45 degrees. While it is not immediately clear whether the intervention aids in the prevention of ventilator-associated pneumonia by decreasing the risk of aspiration of gastrointestinal contents or oropharyngeal secretions, this was the ostensible reason for the initial recommendation. Another reason that the intervention was suggested was to improve patients' ventilation.

What changes can we make that will result in improvement?

Some changes are:

- Implement a mechanism to ensure head-of-the-bed elevation, such as including this intervention on the nursing flow sheets and as a topic at daily multidisciplinary rounds.
- Include the intervention on standard orders for the initiation and weaning of mechanical ventilation, delivery tube feedings, and provision of oral care.

Source: Safer Healthcare Now! Campaign How-to-guide, *Prevent Ventilator-associated Pneumonia* (February 2006)

Public Health's surveillance of communicable diseases is ongoing. It is a regulatory requirement for health care professionals and others to alert Public Health staff 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.

Public Health also monitors immunization rates and any adverse events that may occur. This information is also reported to the B.C. Centre for Disease Control.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

Contract Monitoring

Interior Health has contracts with a number of operators of residential care facilities. These agreements outline the expectations of the parties. In addition to meeting Interior Health's expectations, the contractors must also operate under the requirements of the Continuing Care Act and the Community Care and Assisted Living Act.

The contract template contains a performance management framework. That framework includes a clinical component that requires infection control policies and procedures, a wound management policy and procedure, a risk management plan and staff orientation and training plan to be in place before the facility opens. The contract also requires the operator to maintain a current accreditation with the Canadian Council on Health Services Accreditation throughout the term. If at the date of the agreement the operator does not hold a current accreditation, the accreditation process must begin within one year of the date of the agreement. There is no stated requirement in the contract for regular reporting on issues of infection surveillance and control. However, there is a requirement under the legislation for operators to report any disease outbreaks or occurrences above an incident level normally expected.

In addition, Interior Health contracts with providers of surgical services. These contracts indicate that the contractors will comply with policies and standards of the Ministry of Health and of Interior Health, and the accreditation standards of the Canadian Council on Health Services Accreditation or other applicable accrediting body (as approved by the health authority). The provider agrees to report all critical incidents (including mortality or major complications or outbreak of infections) to the authority. As well, the provider must supply the following to Interior Health before the agreement and at any time (on the request of the health authority) throughout the term of agreement:

- evidence that satisfies Interior Health that the provider is meeting accreditation standards as set out by the College of Physicians and Surgeons of British Columbia for non-hospital medical/surgical facilities;
- evidence that the facility the provider is using to supply the surgical services is certified for all aspects of mechanical

design (including medical gas, ground fault and humidity, mechanical and laminar flow);

- evidence that the provider complies with CSA and ORNAC (Operating Room Nurses Association of Canada) standards for instrument processing and infection prevention;
- evidence that staff have appropriate qualifications or certification; and
- access to the facility by the health authority upon reasonable notice.

Practice Monitoring

There is no formal ongoing monitoring of practice such as hand washing or use of gloves. However, we did hear that there is informal monitoring in that the Infection Control Practitioner may notice someone using gloves improperly or not hand washing and will bring it to his or her attention. This type of informal monitoring is also said to be done by departmental managers. Informal monitoring is beneficial, but we believe there needs to be a formal mechanism in place to monitor hand washing, since it is well documented that hand washing is the best line of defence against the spread of infectious organisms.

At the time of our fieldwork, Interior Health was just introducing quarterly housekeeping audits. These audits will use the same methodology and standards as the provincial housekeeping audit that is conducted by WesTech Systems FM, Inc. in all health authorities and reported publicly by the health authorities.

Antibiotic use is another aspect of monitoring—and one we found to be inconsistent across the authority. It tends to be site specific and done in different ways and by different personnel. For example, it may be done by the pharmacist when reviewing patient medications, by the lab when reviewing culture and sensitivity reports, or by an Infection Control Practitioner when reviewing charts. We found at one site that the microbiologist was sending out information memos to all physicians regarding organisms and their resistance/susceptibility to different antibiotics, and reminding the physicians that with increasing bacterial resistance it is more important than ever to send specimens for culture and susceptibility testing.

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

In addition, policies regarding antibiotic ordering and use are not standardized across the Interior Health, but the authority is working with its medical staff to address this. The Regional Pharmacy and Therapeutics Committee, which reports to the Health Authority Medical Advisory Committee, has established an Antibiotic Utilization Subcommittee. This subcommittee is examining standardization of policies across the health authority, such as stepping down from intravenous antimicrobials to oral.

External Monitoring

Interior Health participates in the accreditation process of the Canadian Council on Health Services Accreditation, which is 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.

The accreditation standards for the environment include several that are specific to infection control. Interior Health participated in this accreditation process in June 2005 and received a recommendation that it implement formal infection control procedures across the system to ensure a consistent approach to preventing and controlling infections. The review also highlighted some program strengths and areas for improvements (outlined in Exhibit 3).

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

Exhibit 3

Accreditation Report Excerpt

Highlights infection control program strengths and areas for improvement

Strengths:

- The team developed a few community educational programs related to hand washing and infections.
- Infection control efforts such as flu vaccination of residents are good. The team is moving towards standardization of a computerized system for tracking and monitoring all outbreaks and infection control trends. Areas that do not have dedicated infection control staff are able to access service and consultations via phone and email.
- The team is commended for the learning gained through recent emergencies such as fire and SARS.
- It cooperates well with provincial partners and agencies.

Areas for Improvement:

- Develop an infection control program structure, leadership and governance. Ensure that there is consistency of infection control processes across the system, especially for community care workers that are at high risk due to individualized, isolated nature of their work such as transportation of soiled linens in cars, and the role of infection control practitioners.
- Identify infection control programs as priority programs for resources and performance management. Priority funding for 10 Infection Control Practitioner positions has been approved. A review of action plans listed June 2005 as a deadline. Currently, infection control practice is not standardized across the system. Findings of the compliance audit of infection control practices in 2004 included adequate and appropriate general infection control policies and procedures in accordance with the guidelines; however, IHA's infection control programs are uncoordinated and inconsistent between the Health Service Areas and the reporting structure in each HSA is inconsistent. There is a lack of attendance by the executive team, a shortage of Infection Control Practitioners in Canada and a number of infection control programs do not meet minimum guidelines based on the number of patients and residents. Surveillance data is critical to measure trends and to adjust infection control to reduce preventable infections and yet surveillance data collected does not meet recommended guidelines
- Develop a standardized infection control manual for residential and home care. Key findings from four tabletop exercises based on pandemic influenza outbreak were taken to senior management.
- Explore and develop a policy for Long Term care staff flu immunization. Immunization of staff varies between 64%–95%. These rates may be higher due to an inflated denominator.

Source: CCHSA Accreditation Report to Interior Health, 2005

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. For example, rooms categorized as very high risk (such as an operating room) have a low tolerance for unclean inspection

Best practices are not being well demonstrated in Interior Health, but the weaknesses are known and steps are being taken to address them

elements. The best practice benchmark is 85%. The initial audit was conducted in May 2005. Interior Health as a whole scored above the benchmark. Three of its facilities fall below the benchmark.

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

Interior Health is not involved in research at this time, although it anticipates that there will be increased emphasis in this area when the new medical school opens.

The authority does trial and evaluate new products, such as cleaning solutions and wound care products. This process involves the Infection Control Practitioners. As well, novice Infection Control Practitioners are involved in mini research projects as part of their university course work.

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 the authority to have information systems in place to support the infection control program.

Conclusion

The information system in place in Interior Health does not have a module to support the infection control program across the continuum of care. However, there is a system in place to support the public health programs.

Findings

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

Meditech, the information system in place across the health authority, does not have an infection control surveillance component. It does, however, have a Medical Quality Management Program that provides some support on data entry and analysis, but needs to be augmented by other software such as Excel for analysis. It was not clear to us if this component of the Meditech system is widely used by the Infection Control Practitioners. In addition, Meditech offers support to the infection control program through its lab reporting component. It also provides the ability to flag new admissions that may have an infection, such as those caused by an antibiotic-resistant organism (e.g., MRSA).

Currently, the only area of Interior Health that has a software surveillance system is Vernon/Armstrong. They have the AICE program, which was in place before regionalization. This program supports data collection and analysis. The health authority's own internal audit report identified the lack of computer-supported data collection and analysis as posing a significant risk.

In response, a steering group, which included Infection Control Practitioners, was formed to investigate and recommend a suitable software program to support surveillance, analysis and reporting. The Steering Committee recommended Picis Quality Manager as a

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

solution to facilitate standardized surveillance across the continuum of care. The recommendation was accepted and a total budget of approximately $1.3 million was approved over a two-year period, with an initial $700,000 being allocated to start implementation in 2006. An initial step will be for the health authority to agree on standards and definitions and then work with the vendor to build the fields and implement the system.

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. Even with iPHIS, much of the data collection is paper-based and then entered into the system—rather than the data being entered at the point of care. The exception to this is immunization data, which is entered at the point of care.

Occupational Health and Safety has the Workplace Health Indicator Tracking and Evaluation (WHITE) system in place, which allows staff to track staff immunizations. The rates of immunizations can be followed by facility and by health service area, thus allowing the authority to focus particular efforts (e.g., its annual flu campaign) on specific areas.

Data collection and tracking does not provide an overall picture of infections in the health authority, except in communicable diseases

Currently, the data collection that does occur is at either the health service area or site level, and therefore most tracking is done at that level and not brought together in one comprehensive report. This prevents Interior Health from having a good picture of what is occurring—although, as noted below, without standard data definitions and data quality mechanisms in place, any such report produced by the authority now would not necessarily be providing an accurate picture.

Outbreaks of non-reportable diseases such as the Norwalk virus are tracked by Public Health, but we did not see any reports on such occurrences across the authority. As well, reportable communicable diseases are tracked and reported on.

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

Interior Health has identified data quality assurance as an issue and is taking steps to address it

For the Interior Health to understand infection control issues across the authority, it needs to be certain that data being collected and used is defined, interpreted and collected in the same way.

At the time of our fieldwork, data definitions were not standardized across the authority, thus leaving it unable to determine if the infection rates it was seeing in the Health Service Areas were comparable across the authority or comparable with those in other authorities. To address the issue, Interior Health established a Standardization of Surveillance Committee, which was to examine data definitions and data collection methods. Subsequently, the work of this committee evolved into a much larger project, including the implementation of Picis. Now the purpose of the project is to enable the systematic collection, consolidation and analysis of critical information concerning the distribution and determinants of a given disease, infection or event; and to disseminate the information to those who can improve the outcomes. The two main components are standardization of practice procedures and policies, and the implementation of a standard electronic computer system. The project is in two phases: Phase 1, April 2006 to March 2007; and Phase 2, April 2007 to March 2008.

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

Reporting by Interior Health on the infection control program to the governance level, senior executive staff and medical staff has been limited. However, the focused attention on implementing the recommendations of the internal audit report has increased the awareness of the need for enhanced reporting of surveillance and monitoring activities across the authority.

Findings

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

We were told that where surveillance is done (e.g., for surgical site infections), an increase in the number of infections seen would result in further investigation and appropriate actions if a problem was identified. However, we did not see any reports that indicated such actions.

In addition, the Infection Control Practitioners may carry out small focused audits. For example, an audit of the transport and storage of sterile supplies, undertaken at Shuswap General Hospital, found that a transport standard — that carts and palates be completely enclosed — was not met. The report also noted, however, that the hospital was in the process of sourcing a zippered cover to provide full containment.

We also saw reports from the Infection Control Practitioner (in the Okanagan Health Service Area, with responsibility for residential care facilities) on review of the management of outbreaks. These reviews include a debriefing with the care staff and an evaluation of the control measures. Recommendations may result in an effort to prevent or reduce the impact of future occurrences. A review of an outbreak at one care facility, for example, identified that the facility had very few personal protective equipment

Reporting on the prevention, surveillance and control of infections across Interior Health has been inadequate

(masks and gowns) available. Then, because the outbreak hit hardest over the weekend, delivery of additional supplies was not available. Thus, masks and gowns were reused by staff to ensure some protection was available to them, but this is what also may have contributed to transmission of the virus. The review also identified some problems with facility design. Recommendations as a result of this review included: implementing wall-mounted dispensers with alcohol hand hygiene products and signage demonstrating use; ensuring an adequate supply of personal protective equipment is kept on site; and ensuring that during an outbreak the doors to the kitchen are kept closed except at meal times.

These reports are provided to the Geriatric Medical Committee, and also shared with the Residential Services Operations team.

The minutes of the Infection Control Practice Committee indicate that issues, actions and reviews are shared and discussed for applicability across the region.

The board receives regular updates on changes to the infection control program, but no reporting on the broader aspects of the program

Among the many duties and responsibilities of the Board of Directors is the responsibility to monitor Interior Health's performance against plans, with a clear focus on its three long-term goals:

- to provide high quality patient-centred care,
- to improve health and wellness for those being served, and
- to create a sustainable, affordable public health system.

In addition the board has the responsibility to ensure that management has systems in place to ensure physicians are meeting practice standards while conducting programs offered by the authority.

These responsibilities indicate that the board has a role to play in the oversight of the infection control program either directly or through its Quality of Care Committee. The purpose of the Quality of Care Committee is to:

- develop, through management, and present to the board for approval the key performance measures required to provide a competent, reliable assessment of the quality of service being provided in all service sectors and at all locations within the scope of the authority's mandate; and
- ensure through regular monitoring that current priorities and programs are providing consistent, quality service in all areas and that the specific performance obligations set out in the Agreement (Performance Agreement with the Ministry of Health) are met.

Detailed duties and responsibilities of the committee are provided in Exhibit 4.

The committee is accountable to the board, reporting both through its minutes and by providing an oral report at the board meeting.

Reporting on the prevention, surveillance and control of infections across Interior Health has been inadequate

Exhibit 4

Excerpt of Duties and Responsibilities Board Quality of Care Committee

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

A. Review with management the key markers and indicators currently available to measure the quality of patient service being provided by the Authority in the principal service sectors including:
   - Acute Care Services
   - Residential Care Services
   - Home and Community Care Services
   - Mental Health Services
   - Public/Population Health Services
   - Corporate Services

C. Regularly review summary relevant management reports to monitor the quality of care being provided; to observe trends; and to identify problem issues or areas where further investigation may be warranted.

D. Periodically, review management summary reports in respect to evaluations, unusual occurrences, complaints, analytical analyses, and levels of satisfaction.

E. Arrange, with the assistance of management, regular written or oral consultations with Health Service Area patient representatives, using these exchanges to verify the patient quality care assessments and to bring into focus any major issues or priority needs that have not otherwise been identified.

G. Monitor accreditation activities including readiness for accreditation surveys and compliance with all applicable standards.

I. (ii) Receive from time to time independent reports of the Internal Auditor.

(iii) Keep the Board of Directors informed on general program performance and any major incident reports or developing issues.

Source: Interior Health Authority Terms of Reference for the Quality Care Committee (September 2003)

A review of the board minutes and our interviews indicated that some information on infection control is brought to the attention of the board. This information includes updates: on implementing the recommendations of the internal audit report; on outbreaks at any Interior Health facilities; and on influenza immunization rates. There were no formal reports on surveillance activities, except for one report received on caesarean section infection rates (conducted at Surrey Memorial Hospital). There was limited reporting by the Health Authority Medical Advisory Committee on issues related to the infection control program.

Reporting on the prevention, surveillance and control of infections across Interior Health has been inadequate

The senior executive team does receive, and discusses, information about the health authority's infection control program

The minutes of the senior executive team from early 2003 to 2005 clearly indicate that issues related to infection control were discussed and action taken as resources permitted. The Senior Medical Health Officer, as a member of the executive team, was very active in providing information, from updates about SARS, flu immunization campaigns, and pandemic planning to details about Public Health's strategic plan.

Following the internal audit in 2004, infection control continued to be part of the executive team agenda, but the discussions were more focused on the strategic aspects—structure of the program, where the program fits (e.g., whether it should be part of the quality portfolio), resource requirements, and capacity building.

Although receiving information, the executive team does not receive regular, formal reports on surgical site infections or other incidents of infections, with the exception that they usually are provided information on any outbreaks, such as the Norwalk virus or C. difficile. As well, they do receive reports on staff flu immunization rates. Exhibit 5 provides an example of the type of report that may be received regarding staff immunizations.

Exhibit 5

Flu Immunizations, 2004

	Number of Employees	Number of Employees Vaccinated	% Compliance
Total East Kootenay	2,531	1,342	53.9
Total Kootenay Boundary	2,846	1,384	48.6
Total Okanagan	8,794	3,349	38.1
Total Thompson Cariboo Shuswap	5,252	3,039	57.9
Total Interior Health	19,423	9,114	46.9

Source: Interior Health, Occupational Health and Safety Department

Reporting on the prevention, surveillance and control of infections across Interior Health has been inadequate

The Health Authority Medical Advisory Committee does not regularly receive and review reports on the infection control program

The Health Authority Medical Advisory Committee is charged with providing advice to the board and the CEO on: the provision of medical care within the facilities and programs of the authority, the monitoring of the quality and effectiveness of medical care, 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.

Membership of HAMAC includes medical staff appointed to medical leadership roles in the health authority, medical staff elected by the medical staff, the Senior Medical Health Officer, the Chief Executive Officer as a non-voting member and other senior administrative and medical staff as non-voting members. The Medical Infection Control Officer for the authority is an invited guest to HAMAC and is a non-voting member.

The Health Authority Infection Prevention and Control Committee is a subcommittee of HAMAC. The subcommittee only came into being in 2005, with the terms of reference approved in August 2005. The HAMAC minutes we reviewed both before and after the formation of the subcommittee indicate limited discussion of infection control issues. There was also little evidence in the minutes of infection control issues raised at the Health Service Area Medical Advisory Committees, which report through to HAMAC.

Site Medical Advisory Committees (MAC) also exist, and medical staff are involved in departmental meetings.

Medical staff see reports on infection surveillance and control through a mix of routes. Some receive infection control information and reports at the Medical Advisory Committee they attend; others do not. Those who do not see reports at MAC say they receive information or reports on infection control through departmental meetings or by being a member of an infection control committee.

Reporting on the prevention, surveillance and control of infections across Interior Health has been inadequate

Others indicate that they receive no reports or very limited information.

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

The Health Act requires that communicable diseases 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 Interior Health meets both of those reporting requirements. However, there is no reporting on nosocomial infection rates.

Interior Health has posted its internal audit report of infection control on its website, along with the updates that have been provided to the organization. The authority also publishes the results of the provincial housekeeping audits that it participates in.

Response from the Interior Health Authority

Infection Prevention and Control

Interior Health's Response to the Auditor General's Report

Prepared by: J. de Heer
IH Infection Control Practice Leader

Prepared on: February 15, 2007

Overall Conclusion

Section 1: Need for comprehensive framework for Infection Control

A 3 Year Strategic Plan that outlines the future plans for Infection Prevention and Control has been developed. The recommendations have been approved by the Senior Executive Team in March 2006.

Within Interior Health the direct reporting of the Infection Control Practitioners and equivalent positions is through managers or directors within the health service areas under the direction of the geographical Chief Operating Officers.

The Infection Control Practice Leader and Physician Leader for Infection Control report directly to the Corporate Director Performance Management.

Infection Control crosses sectors, departments, and communities. For this reason there is an extensive network of committees responsible for infection prevention and control. The Health Authority Infection Prevention and Control Committee (HAIPCC) have dual reporting. Through the Physician Leader recommendations are reported to the Health Authority Medical Advisory Committee. Through the Corporate Director Performance Management recommendations are reported to the IH Quality and Safety Committee and to the Senior Executive Team. For purposes of practice, the Infection Prevention Control Practice Committee reports recommendations through the Infection Control Practice Leader to the HAIPCC. Public Health and Workplace Health and Safety have representation on both committees. For purposes of communication and quality, minutes from the fifteen site and community infection control committees are reviewed by the HAIPCC. At the current time the health service areas continue to have their own Infection Control

Committees. The Interior Health Infection Prevention and Control Committee have representation from these health service area committees as well as Public Health.

Managers of the Infection Control Practitioners meet monthly to ensure the health service areas are in alignment with the Interior Health Plan. The meeting is facilitated by the IH Infection Control Practice Leader.

The Infection Control Practitioners have an on call rotation in which they are on call for outbreaks of Gastroenteritis or Influenza Like Illnesses. Standardized guidelines have been instituted to clarify the on call process. The Infection Control Practitioner works in collaboration with the Medical Health Officer and the Public Health Inspector (PHI) during these outbreaks.

Section 2: Surveillance, reporting, and data quality

A surveillance program has been purchased however; this program has been deferred until a later date due to budgeting constraints.

A surveillance group has been formed to develop a standardized surveillance system that will be done manually at the present time. Prior to the deferral of the computerized surveillance program, process mapping of the current Infection Control processes in place throughout Interior Health was completed. Using the results of this process a standard worksheet was developed. This worksheet will assist the Infection Control Practitioners in collecting standardized data.

Standardized definitions are being used. The NNIS definitions have been chosen. At this point we are developing an Excel spreadsheet for the Infection Control Practitioners to report to the IH Infection Control Practice Leader on a monthly basis.

These reports will be given to the Corporate Director of Performance Management for distribution.

The Interior Health Infection Control office is keeping surveillance data for outbreaks. This information is available on a shared drive to the Infection Control Practitioners and Medical Health Officers. All outbreaks in the health service areas are reported to this office and kept on this spreadsheet.

Interior Health's Response to the Auditor General's Report

Section 3: Planning and service delivery, including staffing

Interior Health has completed a review of the numbers of Infection Control Practitioners and has hired 10.5 new Infection Control Practitioners. This hiring process has now been completed.

Most of the Infection Control Practitioners remain in the Acute Care setting and have responsibilities to Residential Services in their geographic areas. Thompson Cariboo Shuswap Health Service Area and the South Okanagan have hired an Infection Control Practitioner dedicated to Residential Services in their area. These practitioners also have a joint responsibility to Home and Community Care.

In the rest of the Health Service Areas, the Infection Control Practitioners from Acute and Residential Care offer consultative services to Home and Community Care.

The Infection Control Practitioners have been provided with a portion of a full time equivalent dedicated to clerical support.

A standard job description for the Infection Control Practitioners in Interior Health has been developed. All new employees will be hired using this job description.

All Infection Control Practitioners in Interior Health are expected to have their Certification in Infection Control or be eligible to write this certification exam.

The Physician Lead for Infection Control sits on the Medical Health Officers group and attends their weekly meetings. Public Health has recently undertaken a total review of their Communicable Diseases program and at the present time Infection Control is not represented on the proposed Communicable Diseases Team.

Section 4: Best Practices

A standardized manual has been developed and distributed. It is now in the implementation stage. Following implementation, The Interior Health Infection Prevention and Control manual is the only Infection Prevention and Control manual to be used throughout IH.

The manual is available in all Interior Health facilities, all private facilities, on the Intranet (inside net) as well as the Internet.

The Interior Health Infection Control Department is keeping a list of the locations of all manual distributed. The soft copy of the manual will be updated as required. The hard copy of the manuals will be updated two times a year, June and December.

The manual includes sections on Residential and Community Care.

Section 5: Need for medical support

All health service area Infection Control Committees have a designated physician. This physician may not have actual Infection Control expertise but may be a pathologist or physician with an interest in infection control

Interior Health has hired a Physician Lead. Dr. Riben is an Epidemiologist and is responsible for providing Infection Control expertise throughout Interior Health. Dr. Riben chairs the Interior Health Antibiotic Utilization Committee as well as the Health Authority Infection Prevention & Control Committee. Dr. Riben works 0.4—0.5 FTE in this position and utilizes the expertise of the Medical Microbiologist in the Thompson, Cariboo, and Shuswap as needed.

Interior Health has one Infectious Diseases specialist who does consultative work for Interior Health but his practice is situated in the Central Okanagan.

There are two Medical Microbiologists—one in the North Okanagan and one in the Thompson Cariboo Shuswap Heath Service Area. These physicians offer consultative services in their respective geographic areas.

Section 6: Education

At the time of hire, the new Infection Control Practitioners were registered in either the University of British Columbia Infection Control Course or the University of Calgary course pertaining to basic infection control education.

There are follow up education sessions with the IH Infection Control Practice Leader and/or Physician Leader to provide ongoing training. The new Infection Control Practitioners have also been mentored in their respective facilities by an experienced practitioner.

The expectation of the new Infection Control Practitioners is that they must obtain their Certification in Infection Control within the specified two year period. Regular sessions are being held with the Interior Health Infection Control Practice Leader to assist them with this process. Appropriate reference materials have been provided to assist with their education and training.

IH encourages the Infection Control Practitioners to participate in the Provincial Infection Control Network.

The Infection Control Practitioners provide ongoing staff education to the facilities they are responsible for. This education is done to reinforce current best practices and when new emerging issues arise.

All new staff are expected to attend Regional Orientation. The Infection Control information is standard throughout Interior Health and a standardized presentation is used. Further patient care orientation is offered at the respective sites and more detailed Infection Control education is provided at that time.

The Physician Leader provides education to physicians as required and as emerging issues become known.

The Physician Leader is providing an on-line epidemiology course open to all Performance Management staff and Infection Control Practitioners. This on-line course and is being offered in conjunction with Thompson Rivers University.

Section 7: Reporting to Board, senior management and public

The Health Authority Infection Prevention & Control Committee reports to the Health Authority Medical Advisory Committee (HAMAC).

The Corporate Director of Performance Management sits on the Senior Executive Team (SET) as a member, and in a support role, to the Board Quality Committee. Infection Prevention and Control activities are reported on as required.

Infection Prevention and Control
3-Year Service Plan

2006/07 – 2008/09

Prepared by:
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Colleen McEachern
Dr. Peter Riben

Last updated:

July 10, 2006

Interior Health

Table of Contents

Executive Summary

Strategic Context

The overarching goal of Infection Prevention and Control is to prevent infections from occurring in patients, residents, clients, visitors and employees. If, for whatever reason, an individual with an infection is in a facility or program, the goal of Infection Prevention and Control is to control, and to prevent infection from spreading to others.

Infection control programs have been shown to be effective. Characteristics of effective programs include a high intensity, active surveillance program that provides feedback and education to care personnel including physicians. In addition, an effective program includes the presence and use of evidence based guidelines to prevent and/or limit transmission infections, and adequate numbers of Infection Control Practitioners plus physician epidemiologists and specialists to ensure that the program is intensive and proactive. That is, it does not wait for problems to be identified.

An effective infection prevention and control program generally includes the following principal functions:

- *To obtain and manage critical data and information, including surveillance for infections*
- *To develop and recommend policies and procedures*
- *To intervene directly to prevent infections, and*
- *To educate and train health care workers, patients and non-medical caregivers.*

The delivery of health care is changing. The prevalence of individuals with chronic disease is increasing, and more patients are being admitted to acute care with high severity illnesses. There is an increasing prevalence of antibiotic resistant organisms. All of these examples increase the likelihood of nosocomial infection which are infections that were not present or incubating at time of admission. These "hospital acquired" infections impact patient length of stay and re-admissions which both place additional pressures on the system. Though not a panacea, a well functioning Infection Prevention and Control Program limits the impact of these additional pressures.

Environmental Scan

There is increasing acceptance that nosocomial infections are a concern and that, with proper activity, can be prevented. This is evidenced by the inclusion of infection-related activities in three of the six "bundles" in Safer Health Care Now, and also in the Save 100,000 Lives campaign. These patient safety campaigns target three specific types of infections - surgical site infections, central line infections, and ventilator associated pneumonia.

The Centers for Disease Control in the United States, and the Canadian Public Health Agency are two examples of federal organizations working to decrease the incidence and prevalence of nosocomial infections. Similar activity is occurring across Europe, as well as most of the developed countries. The British Columbia provincial government, through the recently established Provincial Infection Control Network (PICNet) is also targeting nosocomial infections. PICNet is still in its infancy, but it is anticipate that it will begin influencing practice during 2006/2007.

Review Accomplishments

The Interior Health Internal Audit Team reviewed infection prevention and control practices in a sample of Interior Health acute and residential care facilities in April 2004. The Compliance Audit of Infection Control Practices in a Sample of Interior Health Acute Care and Residential Care Facilities had recommendations in all nine of the areas assessed.

Since release of these findings, there has been a significant focus and investment into infection prevention and control. There have been the following significant accomplishments as of March, 2006:

3-Year Service Plan

- *In January 2005, the Chief Executive Officer assigned the Executive Liaison Officer to assess infection control needs, and nine recommendations identified during this process were approved in March 2005 by the Senior Executive Team. These recommendations shaped the redesign of the infection prevention and control program for two years, from April 1, 2005 to March 31, 2007.*

- *The Physician Leader for Infection Control was contracted in 2005/06 and 2006/07, and is a physician epidemiologist who participates on provincial and national advisory committees. Effective April 1, 2006, this position reports to the Corporate Director, Performance Management.*

- *The Infection Control Practice Leader has extensive infection prevention and control experience in the areas of acute care, residential care and public health. She was hired into the position in June 2005, and effective April 1, 2006, this position reports to the Corporate Director, Performance Management.*

- *The Health Authority Infection Prevention and Control Committee (HAIPCC) meets bi-monthly and the Chair is the Physician Leader for Infection Control. This committee has dual reporting – to Health Authority Medical Advisory Committee (HAMAC) through the Physician Leader, and to the Quality and Safety Committee (and to Senior Executive Team) through Corporate Director, Performance Management. Minutes from site infection control committees are reviewed by the HAIPCC*

- *The Health Authority Infection Prevention and Control Practice Committee meets monthly and the Chair is the Practice Leader off Infection Control. This Committee reports to the HAIPCC through the Practice Leader*

- *A Surveillance subcommittee was formed as subcommittee to the Practice Committee. To date, software has been selected; Project Lead and Project Analyst have been hired for the Information Management/ Information Technology (IMIT) project. An expert from a multi-hospital infection control computer implementation project available to assist with worksheet development and project implementation. Initial standardized worksheets are in the process of agreement by the working subcommittee.*

- *The Physician Leader is co-chair of the Antibiotic Subcommittee, a subcommittee of the Pharmacy and Therapeutics Committee. Prescribing practices are important because antibiotic use is linked to infectious diseases such as Clostridium difficile.*

- *Number of Infection Control Practitioners (ICPs) increased from 6.2 FTE to 17.9 FTE by March 31, 2006. These positions are "difficult to fill". For this reason, "developmental opportunities" were created and offered with mentoring during the 24-month practice period in order to prepare these Registered Nurses to successfully challenge their certification examinations with the Certification Board of Infection Control. ICPs are directly supervised within Health Service Areas. To date, there have been an increased number of educational opportunities for Infection Control Practitioners such as university courses, conferences, monthly educational teleconferences and other educational opportunities.*

- *During Outbreak season (December 2005 to March, 2006), an Infection Control Practitioner was on telephone call for the Medical Health Officer. This pilot project is now being evaluated, and indications to date suggest it has been a successful undertaking.*

- *Standardized influenza protocol developed and implemented during the winter season of 2005/06.*

- *Waterless handwash products have been implemented for public and on units*

- *Single Use Committee has been formed, and assessing re-use of disposables*
- *Air purifiers to filter contaminants and re-circulate air were purchased*
- *Negative pressure rooms are being installed in conjunction with new construction and renovations*
- *Interior Health has active participants on the Provincial Infection Control Network (PICNet) which will be influencing and/or making recommendations provincially regarding infection control.*

In addition, the following are underway:

- *Draft standardized policy and procedure manual for infection prevention and control prepared, and will be considered for approval by the HAIPCC at the May 2006 meeting.*
- *A three year cycle for infection prevention and control site reviews is being prepared to assess all acute care and residential care sites to common standards. This will be a shared function between Internal Audit and the Infection Control Practitioners.*
- *A standardized gastro-intestinal protocol is being prepared.*

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The purpose of preparing the Infection Prevention and Control Three-Year Service Plan is to continue the focus on infection related activities. Four ongoing areas have been identified:

- *Surveillance*
- *Infection Prevention*
- *Education and Consultation*
- *Practice Management and Evaluation*

There has been significant progress towards a standardized program for IH infection control since the Internal Auditor assessment in April 2004. It is anticipated that the results from the provincial Auditor General Office will highlight the specific outcomes such as to continue with standardized surveillance. In addition the Provincial Infection Control Network (PICNet) is in the process of determining standardized statistical surveillance criteria for use across the province.

The current Performance Agreement between Interior Health and the Ministry of Health stipulates that the determinations from the Provincial working group will be implemented in this Health Authority. Within Schedule A of the Performance Agreement has patient safety and infection control as one of the priority systems identified for improvement. The best practices for Infection Control will be recommended by the Provincial Infection Control Network at which time they will be implemented.

Organization Structure

Within Interior Health the direct reporting of the Infection Control Practitioners and equivalent positions is through managers or directors within the health service areas under the direction of the geographical Chief operating Officers

The Infection Control Practice Leader and Physician Leader for Infection Control report directly to the Corporate Director Performance Management.

3-Year Service Plan

Infection Control crosses sectors, departments, and communities. For this reason there is an extensive network of committees responsible for Infection prevention and control. The Health Authority Infection Prevention and Control Committee (HAIPCC) has dual reporting. Through the Physician Leader recommendations are reported to the Health Authority Medical Advisory Committee. Through the Corporate Director Performance Management recommendations are reported to the IH Quality and Safety Committee and to the Senior Executive Team. For purposes of practice, the Infection Prevention Control Practice Committee reports recommendations through the Infection Control Practice Leader to the HAIPCC. For purposes of communication and quality, minutes from the fifteen site and community infection control committees are reviewed by the HAIPCC.

Infection Prevention and Control is a challenging area. Consequences of a small incident can have devastating ramifications. For this reason attention to detail is required in addition to an understanding of implications between sectors and within clinical disciplines.

Strategic Initiatives for 2006/07 – 2008/09

Initiative #1: SURVEILLANCE

Surveillance is the ongoing and systematic method of collecting, consolidating and analyzing data regarding the distribution and determinants of a given disease or event. This is followed by dissemination of that information to those who can improve the outcome.

Information obtained from the Surveillance data may and can be used in the planning, implementation, and evaluation of Infection Prevention and Control practice.

The Infection Control Surveillance Project has an electronic component, and a practice component. It is the intent of the Working Subcommittee to develop one surveillance program across Interior Health. This program will include information based on data extracted from computerized sources such as admissions, laboratory and pharmacy modules, PLUS information obtained by the Infection Control Practitioners through activities such as chart review and patient assessment. The one surveillance program will include a common set of objectives, common definitions, common data collection, and standardized interpretation.

The information produced by the surveillance program will be used to monitor the frequency of infections within a facility over time. Deviation from established patterns will be examined. Surgeon specific infection rates will also be provided to each individual surgeon. As the program becomes more mature, it will be possible to compare the experiences in different facilities, identify variations in practice and develop, based on local experience, a set of best practices. A software program designed to assist in identifying individuals (patients, residents, clients) who have acquired an infection and which will calculate specific rates is required to satisfy the project objectives. The first year of the information management and technology project will focus on the acute care sector including post-acute discharge into home nursing programs in the community and IH owned residential care facilities. The second year will focus on surveillance within IH owned residential care facilities. The focus of the third year is under discussion, but anticipated to include areas such as public health and other community health programs.

Milestones	**Year 1 2006/07**	**Year 2 2007/08**	**Year 3 2008/09**
Goals and objectives established by the Project Manager	*Acute & Res Care April 06*	*PH & Comm April 07*	
Definitions of events under surveillance confirmed by the working group	*Acute Care July 06*	*Resid Care April 07 PH & Comm Dec 07*	
Data required to satisfy goals and objectives identified by the Systems Analyst.	N/A	*Acute Care April 07*	*Resid Care April 08*
Information systems installed and operational by Pices	*Acute & Res Care Sept 06*		*PH & Comm Sept 08*
Surveillance reports satisfying the objectives presented to the Board, SET, HAMAC, and site committees by Practice Leader and Corporate Director, Performance Management	*Acute Care March 07*	*Resid Care March 08*	*PH & Comm March 09*

3-Year Service Plan

Strategic Linkages: *Linkages are required with computer modules for Microbiology Laboratory, Pharma Operating Room, Admitting, Radiology, and Health Records. In addition, the Infection Control Practitione must continue to rely on interviews with caregivers, review of patient charts, census information, nursing plans, incident reports, activity logs, communicable diseases and exposures. Within the Ministry annual service plan, Infection Control meets Objective 1.2 Protection of the public from preventable disease, illne and injury, and it also meets objective 2.2 Patient-centered care tailored to meet the specific health needs patients and patient sub-populations. In addition to this, it also promotes improved sustainability by mana the health of the population which is the MoH's second redesign theme.*

IH has a commitment to providing a safe, clean environment for our residents, patients and staff. Specific strategic objective 7 states: "To identify and monitor current and emerging risks and ensure systems are place to effectively manage the broad range of risks associated with Authority operations including corpor environmental, clinical and financial risks.

Key Measures/ Targets: *Agreement is reached at HAIPCC on definitions of infection and the goals of th surveillance program. Training of the acute care Infection Control Practitioners in the use of the software acute care purposes is targeted for completion by October 2006.*

Challenges: *Although improvements have been made, the existing culture is still one of isolation. The consistent application of standardization is expected to continue to be a challenge. In addition, individual expected to understand the entire continuum of care, not just one sector.*

Financial Implications: *The IMIT Infection Control Surveillance Project is contained with the 2005/06-2007/08 IMIT Tactical Plan.*

Initiative #2: Infection Prevention

Infections are a result of a complex series of interactions between the host (the person infected), the environment, and the infecting agent. Programs designed to prevent infections must target at least one of the "legs" of this epidemiological triad. For example immunization decreases the probability of infection by improving the host's immune system. Disinfection and sterilization are meant to alter the environment. Limiting the use of antimicrobials is meant to limit the emergence of antibiotic resistant organisms.

The methods, protocols and procedures used within facilities are incorporated into an Infection Prevention and Control Manual. This manual is used on an "as needed" basis, is available to all individuals working within the facilities and programs, and is updated regularly. The manual is based on evidence. It will be necessary to have all Infection Control Practitioners interpret the Interior Health Infection Prevention and Control Manual in the same way because differences in interpretation will lead to confusion among the health care providers.

Outbreaks are a constant threat. Outbreaks can occur in healthcare settings, communities, regions or even on a global scale. Guidelines or protocols are developed for use by facilities and programs to identify contributing factors, and to stop or reduce the risk of future occurrences.

However, infectious organisms are "living" things. They change and recommended treatments and preventive activities also change. Consequently it is necessary to revise the protocols annually.

Milestones	Year 1 2006/07	Year 2 2007/08	Year 3 2008/09
Standardized Infection Prevention and Control Manual completed (May 2006), distributed (Sept 2006) and revised annually by the Practice Leader	*Sept 06*	*Ongoing*	*Ongoing*
All patient/resident care providers will be given training on the IH Infection Prevention and Control Manual by the facility ICP	*Dec 06*	*Ongoing*	*Ongoing*
Influenza outbreak Protocol implemented by facility ICP and the annual review will be done by the Workplace Health & Safety Director, Assistant Director Prevention Public Health and IH Infection Prevention and Control Practice Leader	*Ongoing*	*Ongoing*	*Ongoing*
Gastroenteritis Protocol implemented by facility ICP with annual review being done by Public Health Protection and the Practice Leader	*Sept 06*	*Ongoing*	*Ongoing*
Safer Healthcare Now bundle supported		*April 07*	*April 08*
Compliance audit of Standardized Infection Prevention and Control Manual to ensure uniform policy interpretation completed by the Practice Leader		*May 07*	*Ongoing*

Strategic Linkages: *Cooperation between epidemiologists, ICPs and public health experts are necessary to effectively manage outbreak situations. Public Health plays a fundamental role in developing and revising the outbreak protocols as per Ministry of Health Objective 3.1. The Performance Agreement states we will implement best practices for infection control and monitoring as promulgated by the Provincial Infection Control Network. PICNet is a provincial network of Health Authorities, BCCDC and the Ministry of Health. Additional strategic linkages include the provincial Communicable disease policy network, and (as needed), the Canadian Public Health Agency.*

Key Measures/ Targets: *Hardcopies of the manual will be distributed across all sites and programs of Interior Health by November 2006. In addition, hard copies will be distributed to all non-amalgamated (private) long term care providers.*

Challenges: *Change management. To this point all facilities and programs used individually prepared manuals. These will be replaced with the new standardized manual, and employee education regarding changed practices will be required.*

Financial Implications

Cost of employee education sessions is part of the normal educational processes within the individuals Health Services Areas. The cost for printing of the standardized manuals is to be borne by the corporate cost centre for the initial distribution phase.

Initiative #3: Education and Consultation

The rate with which new knowledge, as measured by the rate of publication, is being accumulated, is such that it outstrips our capacity to read and absorb it. Consequently it is necessary to develop a way to summarize and distribute the new information to all health care personnel. Such new information has traditionally been delivered through educational sessions, conferences, courses, "rounds" and newsletters. These still serve as the "norm" however other venues such as utilization of the intranet will be examined. As important as it is to distribute new information, it is also necessary to ensure that all are aware of the current situations and expectations of best practice.

This area focuses on education provided by Infection Control Practitioners for employees, and as pertinent, to volunteers. It also focuses on the requirement for physicians with specialized expertise to provide education for physicians. The education of the infection control practitioners themselves is important, both for the ICPs in the 24-month developmental opportunities, and for the more seasoned ICPs.

In addition the ICPs provide a consultative role to others, to private long term care facilities and to ICPs in other locations who request assistance.

Milestones	Year 1 2006/07	Year 2 2007/08	Year 3 2008/09
Routine communication regarding infection control with physicians established by Infection Control Physician Leader	*Implemented Mar 31, 07*	*Ongoing*	*Ongoing*
Consultative support for physicians from Infection Control Physician Leader	*Ongoing*	*Ongoing*	*Ongoing*
Infection Control rounds presented to ICPs four times a year by Physician Leader	*Ongoing*	*Ongoing*	*Ongoing*
Education for employees who work in all health care sectors by ICPs	*Ongoing*	*Ongoing*	*Ongoing*
Infection control awareness for key groups such as senior managers and administrators, with framework created by Infection Control Physician Leader	*Create framework Sept 07*	*Ongoing*	*Ongoing*
ICP availability for consultation (example private long term care provides)	*Ongoing*	*Ongoing*	*Ongoing*
Practice Leader to create an education plan for ICPs themselves	*Create plan Sept 07*	*Ongoing*	*Ongoing*

Strategic Linkages: *Continuing education, Medical Administration, Nursing administration, Education coordinators, Professional Practice Office, private providers, outside educational activities, and provincial groups such as PICNet*

Key Measures/ Targets: *Infection control specific topic included in a physician newsletter by September 2006 Education plan for ICPs prepared by September 2006, rounds presented four times per year by Physician Leader by March 31, 2007*

Challenges: *The expansive geography for IH is a challenge. Site visits and one-to-one discussions have a greater chance of modifying behavior.*

Financial Implications *Education costs for employees, corporate cost centre includes budget for some activities such as education for those in the "developmental opportunities"*

Initiative #4: Practice Management and Evaluation

There are two committees that function at the health authority level. They are the Health Authority Infection Prevention and Control Committee (HAIPCC) and the Health Authority Infection Prevention and Control Practice Committee (Practice Committee). Please refer to the terms of reference in Attachments A and B. The organizational chart depicting reporting for Infection Control Committees is provided as Attachment C. Please note the listing of names, site and community committees on the left hand side of the chart with communication through their minutes to the HAIPCC.

The reporting relationships for individual Infection Control Practitioners to Supervisors within the Health Service Areas are included in Attachment D. The position descriptions for the Infection Control Physician Leader and Infection Control Practice Leader are included as Attachments E and F.

The nine recommendations approved by the Senior Executive Team in March 2005 (revised March 2006) regarding Infection Prevention and Control are included in Attachment G.

With regard to evaluation, preparations are underway to review infection control activities at acute care and long term care sites within a three-year cycle. In addition, the Office of the Internal Auditor will be revising the infection control audit tool to focus on areas from the highest risk perspective during 2007. Interior Health is also committed to participation in the Safer Health Care Now initiatives relating to infection prevention and control.

The goals and objectives established for the IMIT surveillance project will be evaluated, plus compliance to standardized reporting.

Milestones	**Year 1 2006/07**	**Year 2 2007/08**	**Year 3 2008/09**
All HSAs interpret policy uniformly	*Ongoing*	*Ongoing*	*Ongoing*
Physician recruitment for Medical Microbiologist (accountability Medical Administration)	*Target*		
Physician recruitment for site-expertise in Infection Control (accountability Physician Leader and Medical Administration)	*Target*		
Evaluate the nine SET-approved goals for infection control in April 2007 Corporate Director Performance Management and Physician and Practice Leader	*April 07*		
Three-year cycle of assessments of facilities by Practcie Leader and ICPs (acute care and residential care) in conjunction with Internal Audit	*Ongoing*	*Ongoing*	*Ongoing*
Evaluate surveillance project from IMIT perspective plus from the standardized practice perspective by Project Manager and Practice Leader		*Acute Care March 08*	*Resid Care March 09*

Strategic Linkages: *Medical Administration, PICNet, Performance Management, Health Services Area Supervisors for Infection Control*

Key Measures/ Targets: *Performance Agreement, audits, IMIT rates, provincial standards, ICPs successfully challenging exam to receive designation Certified Infection Control Practitioner.*

Challenges	*Consistency, standardization, and recruitment issues, Auditor General assessment of Infection Control in BC expected mid 2006.*
Financial Implications	*Recommendations from PICNet may be made regarding number of ICPs per bed rate.*

Critical Success Factors

In order to insure the above milestones can be achieved the following must occur:

- *A change in culture from one of isolation to one of collaboration and adaptability*
- *Standardized processes must be in place and adhered to*
- *Infection Prevention and Control Surveillance Project must be successful*
- *Experienced ICPs will assist with the mentoring and development of the novice practitioners*
- *An adequate number of ICPs are in place (all vacancies filled)*
- *Educational opportunities will be provided to all ICPs*
- *Senior Executive endorses the Infection Prevention and Control 3 Year Service Plan*

Communications

The IH Newsletter, Physician's Newsletter and the Inside Net will be utilized in communicating the Infection Prevention and Control Three Year Service Plan. The Senior Executive Team, Health Service Area Management Teams, Health Authority Medical Advisory Committees and ICPs will receive more detailed information.

Conclusion

In summary, there has been significant focus and investment into infection prevention and control within Interior Health. Infection Control Programs have been shown to be effective in preventing infections thereby reducing risks to our patients and staff. Additional resources have been allocated to assist Interior Health in the development of an improved program. The four ongoing areas that have been targeted for the next three years include Surveillance, Infection Prevention, Education and Consultation and Practice Management and Evaluation. The purpose of this plan is to ensure that progress continues as Interior Health creates an effective Infection Prevention and Control Program.

Attachment A

INTERIOR HEALTH

Health Authority Infection Prevention and Control Committee

Terms of Reference

Preamble:

- *The Interior Health Authority Infection Prevention and Control Committee (HA IPCC) is a Standing Committee of the Health Authority Medical Advisory Committee "HAMAC" for Interior Health*

Purpose:

- *The HA IPCC makes recommendations regarding the policies and procedures for use within IHA facilities regarding control and prevention of infections*
- *The HA IPCC monitors the occurrences of infections a well as the interventions used to limit their occurrences*

Composition:

- *The Chairperson will be the Physician Leader for Infection Control*
- *Representation will come from all Health Service Areas (HSAs) as well as from enterprise-wide programs such as Public Health*
- *The following disciplines will be represented on the committee: Infectious Disease, Clinical Microbiology, Public Health, Pharmacy, Surgery, Pediatrics, General Practice, Intensive Care, Geriatrics, Nursing, Housekeeping, Residential Care Services, Chairs of the Regional Infection Control Committees (ICCs), Infection Control Practitioners, and Senior Management*
- *Medical Appointments to the committee, as noted in the HAMAC Terms of Reference, will be made by HAMAC with no limit to the number of terms an individual physician may serve*

Duties and Responsibilities:

- *Quality of care. The HA IPCC shall ensure that policies and procedures, which limit the likelihood of an infection being acquired while under the care of the health authority, are prepared and implemented. The HA IPCC:*

  i. Will receive reports on the frequency and rates of Health Authority acquired infections

  ii. Will review provincial, national, and international guidelines, and relevant published literature, as appropriate for development of Health Authority policies and procedures

  iii. Will, following the review (see ii), recommend policies and procedures that are effective in increasing the safety of patients, clients and employees

- *HA IPCC will collaborate with public health to ensure that prevention strategies are consistent with the strategies used in the community*
- *HA IPCC will ensure public health is notified of infections as required by the Public Health Act in the province*
- *HA IPCC will encourage applied research in the area of infection prevention and control within facilities*
- *HA IPCC will encourage the continuing education of physicians, nurses and Infection Control Practitioners in infection prevention and control*
- *At the call of the Chair, the HA IPCC may convene as a quality assurance committee as per Section 51 of the Evidence Act.*

Meetings and Agendas:

- *The HA IPCC will schedule regular meetings with a minimum of six meetings per year*
- *The Chair will develop a written agenda for each meeting including order of business, items required approval, and opportunity for the introduction of issues not listed in the distributed meeting agenda*
- *Under normal circumstances, the agenda and related material will be distributed to the members not less then one week before the meeting*
- *All members are free to suggest additions to the agenda*
- *The HA IPCC may also meet at the call of the Chair to deal with special or urgent issues. In such event, a formal agenda need not be issued. All members will be advised however, of the purpose of the meeting and given adequate notice*
- *With the approval of the other members, individual members may participate in meetings of the HA IPCC by means of such telephone, electronic or other communication facilities as permit all persons participating in the meeting to communicate adequately with each other. A member participating in such a meeting by any such means is deemed to be present at the meeting*
- *Minutes will be prepared on a timely basis for each meeting of the HA IPCC and will be made available to all members of the committee within 2 weeks of the meeting*

Committees:

Representatives of the HA IPCC will serve as members of the Health Authority Infection Control Practice Committee

Representatives of the HA IPCC will participate in the Health Authority Quality Improvement Patient Safety Council

Reporting Relationships:

The HA IPCC will report, via the minutes to the HAMAC, the Senior Executive Team, and to the Board Quality Care Committee

The Senior Medical Director for the Health Authority is designated as the SET member responsible for the HA IPCC

August 26, 2005

Interior Health

Attachment B

INTERIOR HEALTH

Infection Prevention & Control Practice Committee

Terms of Reference

Purpose:

- *To provide leadership regarding preparation of common standards and best practice protocols for infection prevention and control practices that are to be implemented across the Interior Health care continuum*
- *To act as an advocate for activities that prevent and control infections within facilities, programs, and populations within Interior Health*
- *To implement and monitor infection control patient/client/resident care policies, procedures, and practices recommended by the Health Authority Infection Prevention and Control Committee for implementation throughout the Interior Health care continuum including the sectors of acute care, community care, residential complex care, mental health services and public health*
- *To educate employees about infection prevention and control practices*
- *To mentor and support Infection Control Practitioners.*
- *To advocate for adequate and appropriately trained individuals to perform infection prevention and control duties in order to maintain the safety of the patients, residents, clients, volunteers, visitors and Interior Health employees, including physician.*

Responsibilities:

- *To identify infection prevention and control issues throughout Interior Health*
- *To disseminate pertinent information regarding surveillance data and policy decisions throughout Interior Health*
- *To act on the recommendations from the Health Authority Infection Prevention and Control Committee (HAIPCC) regarding the preparation of standards*
- *Develop draft policies and procedures as recommended by the HAIPCC*
- *Implement the policies as approved by the HAIPCC*
- *The Infection Control Practitioner (ICP) representatives on the committee will be responsible for notifying the other ICPs and their Supervisors in the Health Service Areas, the decisions made by this committee*
- *To coordinate the implementation of Infection Control policies, procedures, protocols and guidelines throughout Interior Health*

- *To provide representation on the Interior Health Product Evaluation Committee and the Construction/Renovations Committee*
- *To provide strategic coordination and communication across the care continuum, especially between the Public Health Programs of Health Protection and Prevention and other Health Care Services such as Acute Care, Residential Services and Continuing Care regarding outbreak management*
- *To maintain effective communication channels within the Health Authority, and with Provincial and National regulatory bodies*
- *To participate in Canadian Council on Health Services Accreditation (CCHSA) accreditation activities as required*
- *To provide continuous coverage for Infection Control consultation within Interior Health*

Reporting:
The Infection Prevention and Control Practice Committee Reports to the Director of Strategic Services, Okanagan to the Chief Operating Officer, Okanagan to SET.

Distribution of Meeting Minutes and Reports:

- *Health Authority Infection Prevention and Control Committee*
- *Interior Health Quality and Safety Council*
- *Interior Health Senior Executive Team*
- *Medical Administration Leadership Council*
- *Community Administrators and Infection Prevention and Control Practitioner supervisors in the Health Services Areas*

Meetings:
Minimum of 10 meetings per year and at the call of the Chair
Quorum is 50% of the voting membership
Decisions will be made by consensus first, followed by a 51% majority vote.

Individuals may actively participate in meetings by means such as telephone, video conference or other electronic devices that permit all persons participating to communicate adequately with each other.

Minutes of the meeting will be circulated electronically to the members of the "_IHA Infection Control" distribution group in Outlook.

Membership:
Interior Health Infection Control Practice Leader, Chair
Interior Health Physician Leader
Infection Control Practitioner representatives from each Health Services Area (supervisors are responsible for naming the representatives)

- *2 Thompson/Cariboo/Shuswap*
- *3 Okanagan*

- *1 Kootenay Boundary*
- *1 East Kootenay*

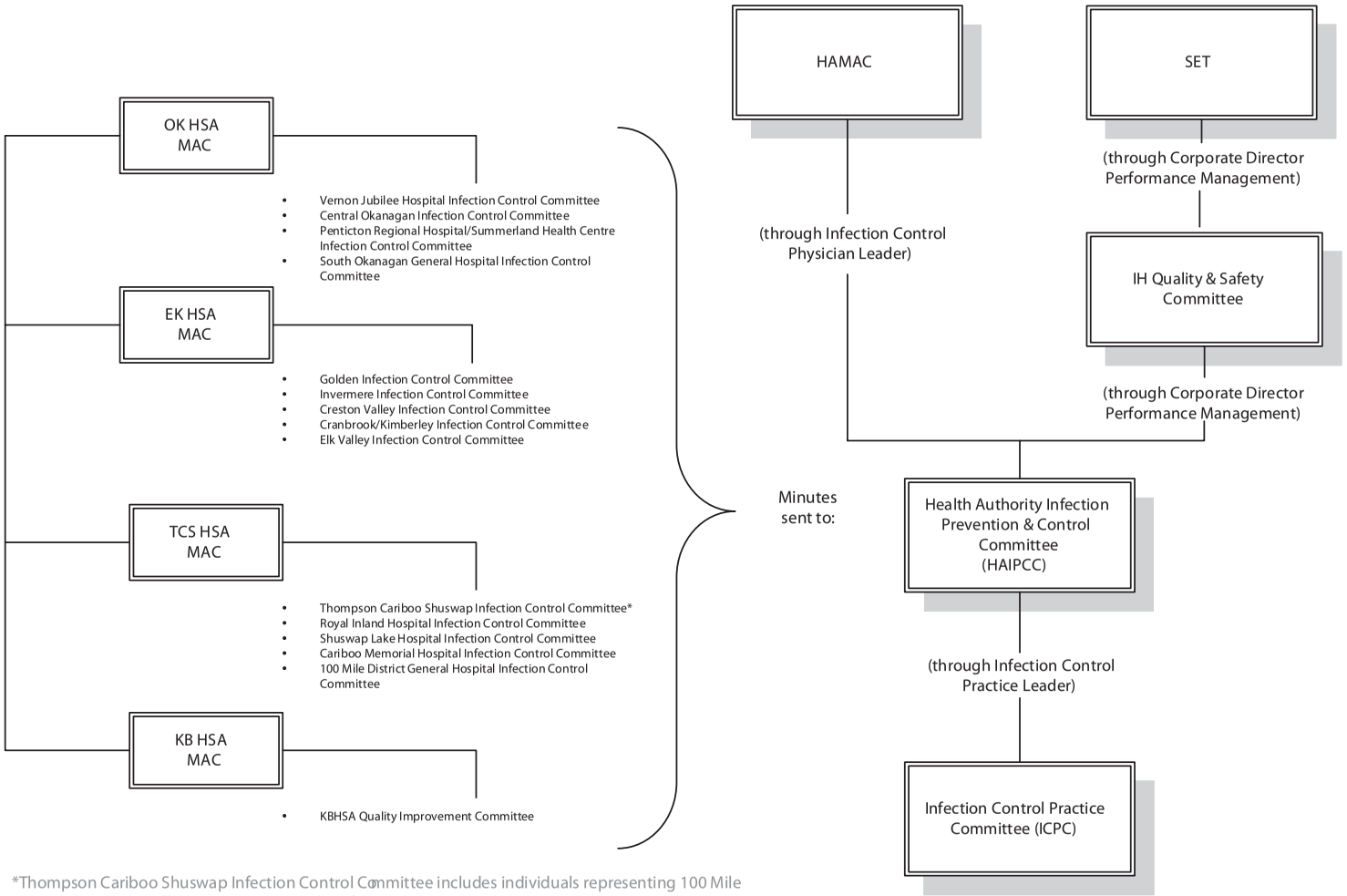
Communicable Diseases representative for Public Health or designate
Public Health Inspector
Workplace Health and Safety representative
Okanagan Strategic Services Director
Material Management Representative – Ad Hoc
Other departmental representatives as required

The Interior Health Practice Leader will chair the committee and will be the representative on the Health Authority Infection Prevention and Control Committee

January 9, 2006

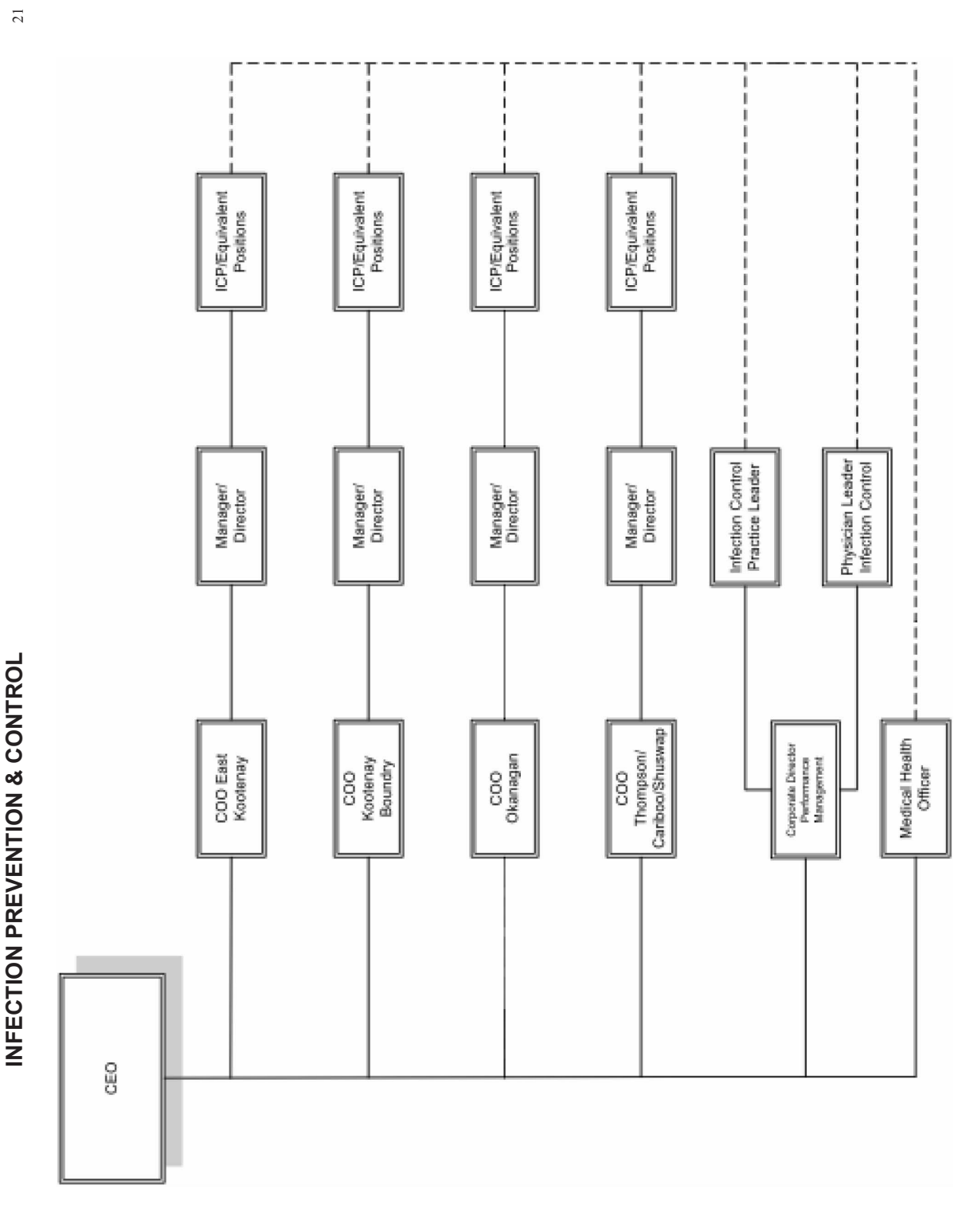
INSPECTION CONTROL COMMITTEE REPORTING STRUCTURE

Attachment C



*Thompson Cariboo Shuswap Infection Control Committee includes individuals representing 100 Mile House, Clearwater, Lillooet, Merritt, and Ashcroft.

3-Year Service Plan



Attachment E

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Physician Leader Job Description
TO BE INSERTED when completed-

Attachment F

Interior Health

Position Description

Leader – Infection Prevention and Control

Strategic Services Okanagan

JOB TITLE:	*LEADER, INFECTION PREVENTION AND CONTROL*
FACILITY:	Interior Health
DEPARTMENT:	Strategic Services Okanagan: ▪ Infection Prevention and Control
REPORTS TO:	Corporate Director Performance Manager
BARGAINING UNIT:	Non Contract (Excluded)
DATE:	Developed: June 23, 2006

Scope of the Role

In conjunction with the Infection Control Physician Leader, is responsible for facilitating the development, planning, coordination and evaluation of Infection Prevention and Control Programs in Interior Health, for the entire continuum of care.

The Practice Leader collaborates with other infection control personnel within Interior Health to foster consistency in Infection Control policies and practices, using best benchmark guidelines and standards from key resources such as the Canadian Council for Health Services Accreditation, British Columbia Centre for Disease Control, Public Health Agency of Canada and Centre for Disease Control in the United States. The Practice Leader collaborates with Public Health, Workplace Health & Safety, Infection Control Practitioners and others as deemed necessary, to ensure that infection control practices are in place and delivered according to best practice standards. The Practice Leader participates with the Provincial Network for Infection Control and ensures Interior Health is well represented.

The Practice Leader provides Infection Control expertise on the Interior Health Infectious Hazards committee and develops the Interior Health Infection Control response as it pertains to Pandemic Influenza.

The Practice Leader acts as a resource to Infection Control Practitioners and facilitates with the mentoring of new practitioners and those in "developmental opportunities".

The Practice Leader ensures appropriate Infection Control information is provided to the Senior Executive Team and other Health Authority Committees as required, and liaises with external agencies to provide expertise pertaining to infection control issues and practices.

KEY Responsibilities

- Responsible for maintaining the corporate budget for the Interior Health, Infection Control Program, such as telephone on call
- In conjunction with the Physician Leader, leads the development of an Interior Health surveillance program for all health sectors, and participates in its implementation
- The Practice Leader is the key liaison with Information Management and Information Technology for the implementation and evaluation process of the electronic component of the surveillance program to ensure it is delivered in a timely and cost effective manner
- In collaboration with other Infection Control Practitioners, identifies educational needs pertaining to Infection Control and recommends strategies to address needs. Develops educational tools and conducts training and education programs as required
- Develops standardized Infection Control policies and procedures and ensures these are followed in all facilities, and responsible for the development of the Infection Control procedures relating to Pandemic Influenza
- Evaluates compliance regarding standard interpretation of the standardized policies and procedures in all facilities, and programs
- Assists with the audits of Interior Health amalgamated and non amalgamated facilities according to the 3 Year Assessment plan
- Provides expert knowledge and leadership both inside Interior Health and outside of the Health Authority, with various organizations such as the Provincial Infection Control Network (PICNet)
- Represents Interior Health on the Provincial Infection Control Network (PICNet) Steering Committee
- Participates on various professional, planning and program related committees both within and outside the Health Authority as a clinical expert and contributor to decision making
- Mentors to new practitioners and prepares the novice Practitioners to challenge the certification exam in Infection Control following 24 months of practice experience
- Provides clinical consultation in the area of Infection Prevention and Control
- Acts as an Infection Control Resource for the Safer Health Care Now bundles
- Represents Infection Control on Interior Health wide committees such as the Surgical Products Evaluation Committee, Safety Products Committee, Infectious Hazards Committee
- Chairs the Interior Health Infection Control Practice Committee, and is the liaison between the Interior Health Infection Prevention and Control Practice Committee and the Health Authority Infection Prevention and Control Committee
- Ensures minutes of all the site Infection Control Committees are provided to Health Authority Infection Prevention and Control Committee
- Ensures pertinent information on Infection Control is sent to the Senior Executive Team and other Interior Health Committees as necessary

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QUALIFICATIONS

- Registered Laboratory Technologist or Registered Nurse with demonstrated competence in Infection Prevention and Control Practice
- Master preparation in health related field or equivalent combination of education and experience
- Certified in Infection Control or eligible to write the Certification Board of Infection Control exam
- Two years experience in a coordination or supervisory role related to infection control practices
- Current valid B.C. driver's license

Skills and Abilities

- Conceptual skills: knowledge of legislated acts, regulations, policies and procedures, epidemiological principals, statistics, microbiology and infectious diseases that govern the delivery of infection control services
- Leadership: Demonstrated ability to lead plan, manage, implement organize and problem solve in a complex multidisciplinary organizational environment
- Communication: Proven verbal and written communication skills: Ability to inter-relate effectively with internal and external clients, other professionals, community agencies, municipal and regional governments and organizations
- Change Management: Demonstrated ability to effectively introduce and manage purposeful change
- Equipment: Ability to utilize computerized software/hardware technology within a Windows operating environment including knowledge of statistical programs. Working knowledge of Meditech is required

Position Description Approvals

Department/Program Head Sign Off	Date
Department/Program Head Name	
Human Resource Sign Off	Date
Human Resource Name	

Attachment F

APPROVED RECOMMENDATIONS BY SENIOR EXECUTIVE TEAM
FOR INFECTION PREVENTION AND CONTROL
March 1, 2005 (Revised March 2006)

Although these recommendations are numbered, the numbers do not reflect priority. Recommendations one through eight were approved by the Senior Executive Team on March 1, 2005. Recommendation nine (allocation of new Infection Prevention and Control Practitioner positions) was approved by the Senior Executive Team on February 17, 2005, and revised March 2006.

APPROVED RECOMMENDATIONS

1.0 *Develop a written framework outlining the Infection Prevention and Control Program within Interior Health. The Physician Leader for Infection Control and Infection Control Practice Leader are jointly responsible for the development of the* **Interior Health Infection Control Program,** *for consideration by the Senior Executive Team.*

2.0 *Provide* **Infection Prevention and Control services for all Interior Health Services including the sectors of Acute Care, Home and Community Care (home/ community programs and residential care sites), plus Mental Health and Addiction Services.** *Initial attention will be focused on areas of highest risk, the sectors of Acute Care and Residential Care.*

Examples of infection prevention and control services are:

- *Analysis and interpretation of collected infection control data,*
- *Investigation and surveillance of suspected outbreaks of infection,*
- *Planning, implementation and evaluation of infection prevention and control measures,*
- *Education of individuals about infection risk, prevention and control,*
- *Development and revision of infection control practices and protocols,*
- *Management of infection prevention and control activities,*
- *Consultation about strategies for infection risk assessment, prevention and control.*

The **role for Public Health** *is to lead prevention activities, provide leadership for outbreak control, support infection control practitioners and physicians, and to focus prevention activities aimed at the community-based population. Collaboration and development of strong working relationships between Public Health and members of the Health Services Leadership Teams is important for prevention and control of infections.*

3.0 *Through the accreditation process with the Canadian Council on Health Services Accreditation (CCHSA), ensure that* **infection prevention and control services are provided within privately operated sites funded by Interior Health**. *Through contract with Interior Health, private operators are required to comply with national accreditation standards, including comprehensive standards for infection control. For the residential care sites, compliance is monitored by the Directors of Residential Care. Most of the current Infection Control Practitioners have collaborative and collegial working relationships with the privately operated residential care sites. These relationships should continue to provide consultative support, and provide a proactive role in outbreak management and control.*

4.0 **Maintain line accountability** *reporting structure for the Infection Control Practitioner positions* **within the Health Services Areas (HSAs)**. *The Infection Control Practitioners positions report to a supervisor as designed by the Chief Operating Officer. The Chief Operating Officer for the Okanagan can determine whether the reporting should be centralized within the Okanagen HSA, or remain the current practice of reporting to three separate Directors. This HSA reporting will be reassessed for consideration of the Senior Executive Team in two years, by March 31, 2007.*

5.0 *Create a* **new support position, Infection Control Practice Leader,** *at the Interior Health corporate level to:*

- *Develop the Interior Health Infection Control Program in conjunction with the Physician Leader for Infection Control,*
- *Develop practice guidelines and protocols,*
- *Support planning, common standards, and policy development,*
- *Provide support for surveillance,*
- *Support the novice practitioners in a mentoring role,*
- *Provide orientation and clinical consultation,*
- *Assess professional development requirements,*
- *Lead product review,*
- *Communicate with health professionals regarding infection control,*
- *Support the Infection Control Committees at the Health Authority level.*

Initially, this excluded position will report to the Executive Liaison Officer, and on April 1, 2006, report to the Executive Direct or Performance Management.

6.0 *Create a position of* **Physician Leader for Infection Control** *to provide Medical Leadership for infection control. Funding has not yet been determined for this position, and time commitment for this role is yet to be determined. This position is required to:*

- *Provide education about epidemiology and infection control for health care providers, including physicians,*
- *Develop practice guidelines and protocols,*
- *Actively be involved in the development of the surveillance program, including definitions and data sources,*
- *Interpret surveillance information, recommend appropriate actions, and assist in implementing best practices such as changes to physician prescribing practices,*
- *Provide key information to the Health Authority Medical Advisory Committee (HAMAC), and the other Medical Advisory Committees,*
- *Communicate with medical professionals, the media, and the public,*
- *Provide issues management for physician-specific infection control concerns,*
- *In conjunction with the Infection Control Practice Leader, develop the Interior Health Infection Control Program,*
- *Support physicians who are medical consultants for Infection Control regarding incident issues management, and provide information regarding technical inquires from Infection Control Practitioners.*

Initially, this physician position will report to the Senior Medical Health Officer, and on April 1, 2006, report to the Executive Director Performance Management. The function will be assessed by March 31, 2007.

7.0 *Create an* **Interior Health Infection Prevention and Control Committee** *(draft terms of reference required) with the Physician Leader for Infection Control as Chair. This will be structured as a subcommittee for the Health Advisory Medical Advisory Committee, and because of the interdisciplinary membership and issues, jointly report to the Quality and Safety Council, a subcommittee of the Senior Executive Team.*

Committee members will provide representation of the key components of infection control including (but not limited to) sterilization, pharmacy, infection control, occupational health, administration, Public Health, and physicians who are local medical consultants for infection control. The purpose of this committee is to plan, monitor surveillance such as infection rates, set standards of practice, and provide education. The Infection Control Practice Leader will sit on this Committee, and provide support for the Committee as required. The function of this committee will be evaluated March 31, 2007.

Of note, the detailed nature of Infection Control activities supports continuation of Infection Control Committees at the level of site and/ or HSA.

8.0 *Continue the* **Infection Control Practitioner Standards of Practice Committee** *(revised draft terms of reference and membership required). The Committee will report to the Quality and Safety Council, a subcommittee of the Senior Executive Team, with minutes sent to the Infection Control Supervisors in the HSAs for information. The Infection Control Practice Leader will Chair this Committee. The purpose of this committee is to develop and coordinate standards of practice for the functions performed by the Infection Control Practitioners/ equivalents. The function of this committee will be evaluated March 31, 2007.*

9.0 *Approved by Senior Executive Team on February 17, 2005 that as individuals are hired into the new Infection Control Practitioner positions,* **allocate budget** *(funding for full time equivalents (FTEs)) to the four Health Service Area Chief Operating Officers for Infection Control Practitioner/ equivalent positions as per the next page:*

	INFECTION CONTROL PRACT/ EQUIV	INTERNAL AUDIT	2005/06 & 06/07 BUDGET ALLOCATION	INFECTION CONTROL PRACT/ EQUIV
	CURRENT POSITIONS (FTE)	RECOMM. POSITIONS (FTE)	PROPOSED NEW POSITIONS (APR 1, 2005)	TOTAL POSITIONS (FTE)*
Corp			*1.0*	*1.0*
EK	*0.5 FTE*	*2.0*	*1.5*	*2.0*
KB	*1.0 FTE*	*2.1*	*1.0*	*2.0*
Okanagan	*3.9 FTE*	*8.9*	*5.0*	*8.9*
TCS	*2.0 FTE*	*4.1*	*2.0*	*4.0*
PH	*1.0 FTE*			*1.0*
TOTAL	*8.4*	*17.1*	*10.5*	*18.9*

(refer to next page for additional information about this table)

FTE	*full time equivalent*
Total Positions	*supports Infection Control Practices Compliance Audit recommendations for Acute Care and Residential Care beds, however, ICP/ equivalent resource allocation relating to non-amalgamated site bed numbers were not included in the Audit.*
Corp	*Corporate Excluded Infection Control Practice Leader position*
EK	*East Kootenay Health Services Area*
KB	*Kootenay Boundary Health Services Area*
TCS	*Thompson Cariboo Shuswap Health Services Area*
PH	*Public Health*

Initially, post these new bargaining unit positions simultaneously internally and outside Interior Health, filling only with qualified individuals with recent experience.

It is anticipated these positions will be hard to fill with qualified individuals, even with external recruitment. For unfilled positions, appropriate bargaining unit Interior Health employees (Registered Nurses and/or Medical Laboratory Technologists) will be selected to participate as novices for the two-year period that includes self-study as required prior to challenging certification with the Certification Board for Infection Control and Epidemiology (CBIC). During the novice period, the Novice Infection Control Practitioners will be supported in ways such as weekly short video or teleconference meetings to help facilitate success.

Recommendations 1 to 8 approved by SET March 1, 2005
Recommendation 9 approved by SET February 17, 2005
Recommendations 5 and 6 revised by SET March 2006

Prepared by C. McEachern

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