PICNet
PROVINCIAL INFECTION CONTROL NETWORK OF BRITISH COLUMBIA
A program of the Provincial Health Services Authority

Infection Prevention and Control Guidelines for Providing Healthcare to Clients Living in the Community

Provincial Infection Control Network of British Columbia (PICNet)

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Glossary of Acronyms

ABHR	alcohol based hand rub
ARO	antibiotic resistant organism
BC	British Columbia
CA	community associated
CAUTI	catheter associated urinary tract infection
CDI	*Clostridium difficile* infection
GI	gastrointestinal
HA	health authority
HAI	healthcare associated infection
ICP	infection control professional/practitioner
IPC	infection prevention and control
MRSA	Methicillin resistant *Staphylococcus* aureus
PHSA	Provincial Health Services Authority
PICNet	Provincial Infection Control Network of British Columbia
PPE	personal protective equipment
VRE	Vancomycin resistant *Enterococci*

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PICNet would also like to thank the members of our community of practice who took the time to review these guidelines and provide feedback.

1.0 Introduction

A systematic approach to infection prevention and control requires that each healthcare provider plays a vital role in protecting everyone who utilizes the healthcare system, in all of its many forms: pre-hospital settings, hospitals, clinics, offices, home care and community programs, etc. Healthcare providers need to follow infection prevention and control practices at all times, and use critical thinking and problem solving in managing clinical situations. [3]

Home and Community Care teams include home care nurses, home support workers, dieticians, social providers, speech therapists, occupational therapists, and physiotherapists. Due to shifting demographics, these teams are now delivering increasingly more complex, invasive care, such as intravenous therapy, hemodialysis, wound care, or ventilator therapy, which all increase the risk of infection. [1]

There is little evidence to suggest that the provision of healthcare in the home setting results in substantial disease transmission. Most infections in this setting are related to procedures and devices such as urinary or intravascular catheters. Risks of transmission mainly relate to hand hygiene and aseptic practices of the caregiver; cleaning and disinfection of equipment and supplies used between clients; and environmental cleanliness. [2]

1.2 Purpose and Scope

This document intends to provide regional infection prevention and control programs, and managers of community healthcare and home care programs, with guidance in the writing of policies pertaining to infection prevention and control within these settings. While frontline staff are welcome to read and use this document, it is not intended to supersede direction given by their local Infection Control Practitioner or their regional infection prevention and control program.

The client, resident, or individual receiving healthcare, for the purposes of this document, will be referred to as the 'client' throughout. The types of settings covered by this document are assisted living, supportive housing, client's homes, group homes, hospice, ambulatory care, outpatient clinics, and street clinics.

1.3 Literature Search Strategy

The Health Librarians of the College of Registered Nurses of British Columbia conducted a systematic literature search of CINAHL, Medline, and Dynamed for studies related to infections in home and community care, infection control practices, and home care practices.

The first review of articles was performed by PICNet staff. The remainder of the articles were then reviewed by the revision working group when this information was used in the guidelines.

1.4 Methods

Since the Public Health Agency of Canada document *Routine Practices and Additional Precautions* is widely accepted, this document was used as the basis for many of the practices in these guidelines. The recommendations made within this guideline that were not already covered in *Routine Practices and Additional Precautions* are graded based on the level of supporting evidence available, using the Public Health Agency of Canada rating scale for strength and quality of evidence (Appendix A). The grading level assigned does not relate to the importance of the recommendation, but to the strength of the supporting evidence. Evidence tables were created by the author where moderate to strong evidence to support the recommendations was available. These tables were then reviewed by the Guideline Working Group (GWG). For recommendations based on weak evidence and the expert opinion of the GWG members, any available literature was reviewed, and differences in opinion were resolved through discussion and consensus. This process was reviewed and approved by the Guidelines Steering Committee.

2.0 General Information About Infections

Microorganisms are very much a part of our world. They perform a variety of essential functions and interact with every living creature. The majority of microorganisms do not cause illness. However, there are several categories of microorganisms that cause infection. These are: bacteria, viruses, fungi, and parasites. Some of these microorganisms are more pathogenic (likely to cause disease) than others.[1]

In healthcare settings, infections are generally categorized into whether the person likely acquired the infection from her or his interaction with healthcare *(healthcare-associated or -acquired)*, or whether it was acquired from the community *(community-associated or -acquired)*.

Usually, when an individual develops an infection they will show observable signs and symptoms such as fever, vomiting, diarrhea, and/or cough. In some instances, the interaction between the individual and the microorganism may only be a detectable immune response such as a tuberculosis (TB) skin test conversion (subclinical infection).[1]

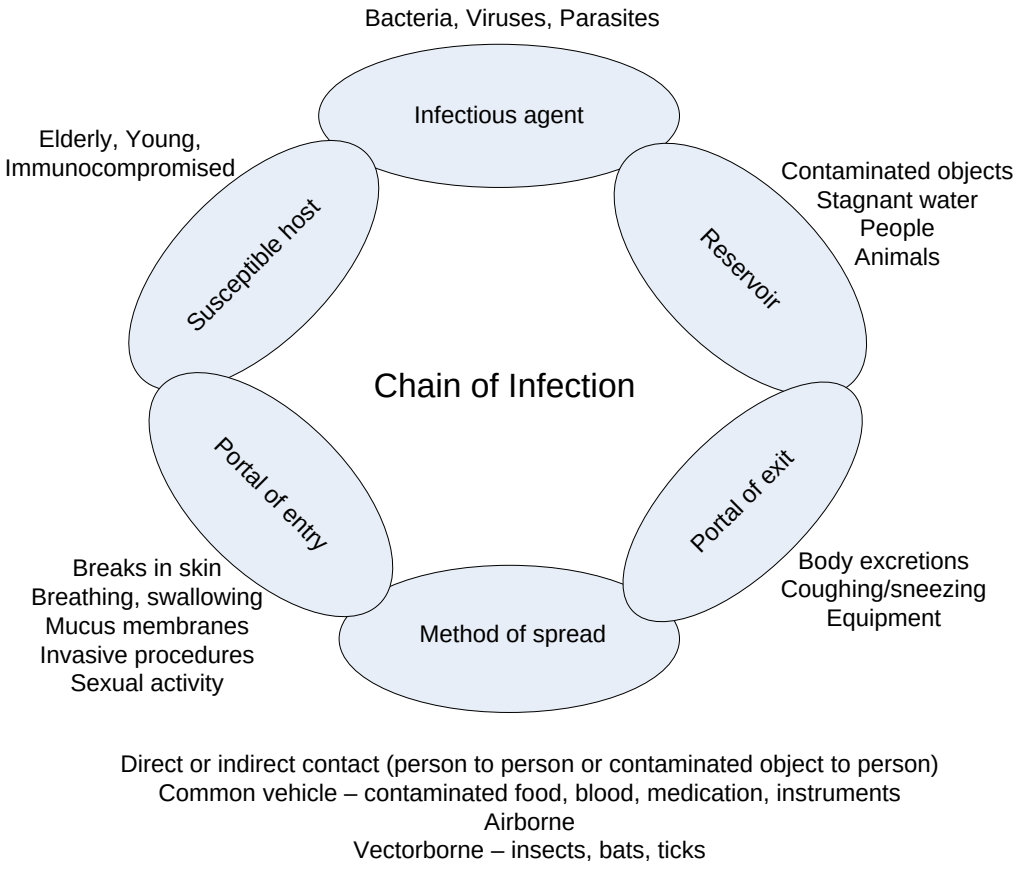
2.1 Common Clinical Signs of Infection

Inflamed Skin	Skin that is red, hot, swollen, or has a rash
Fever or chills	Temperature above 38°C*
Pus	Green or yellow drainage or discharge from a wound or body cavity
Nausea or Vomiting	Unexplained by change in diet, medications, etc.
Diarrhea	Persistent or copious loose bowel movements, unexplained by diet or medication
Pain	Sore throat or other pain, also pain that is disproportionate to severity of the injury
Cough	Productive, persistent or new cough
Painful Urination	Painful and/or frequent urination

* For the elderly, infants, or those taking an immunosuppressant medication, a temperature change may be subtle, no change, or higher or lower. Often for the elderly, the first indication of an infection may be a change in their cognitive abilities.

2.2 The Chain of Infection

Infection prevention and control measures are based on knowledge of the six main factors that influence the spread of microorganisms. These factors are collectively known as the chain of infection.



Infectious Agent: Each microorganism that causes human infections have characteristics that influence its ability to cause an infection. These include:

- the number of organisms required to cause infection,
- the ability of the organism to cause disease,
- the ability of the organism to breach natural barriers,
- the ability to survive in the environment, and
- the ability to develop resistance to antimicrobials.[1]

Reservoir and Source of Infection: All microorganisms have both a reservoir and a source that may be the same or different. A reservoir is the place where the organism maintains its presence, metabolizes, and reproduces. Reservoirs of infection include people (both healthy and ill), animals, or inanimate objects. A source is the place from which the microorganism passes to the host. Sources may be animate or inanimate. An example of a reservoir and source being the same would be a common-source outbreak such as measles, where both the

reservoir and the source is a person. An example of a different reservoir and source is one in which contaminated tap water (reservoir) is vaporized through a humidifier (source). Other examples of sources include medical instruments (surgical instruments), or equipment (blood pressure cuffs, commodes).[1]

Portal of Exit: The exit of the pathogen is dependent on the location of the microorganism in the body. Microorganisms can be expelled from the respiratory tract during breathing, coughing or sneezing, and from the gastrointestinal tract (GI) via saliva, emesis, feces, or drainage from sites within the GI tract. Urine, blood, genital secretions, and drainage from wounds may also carry microorganisms out of the body. Hepatitis A, for example, exits the body via the GI tract and can be transmitted through vomiting, diarrhea, and/or improperly washed hands after toileting.[1]:

Method of Spread: Microorganisms can be transmitted from their reservoir or source to a susceptible host by several routes:

Direct Person to Person Contact - This is the most common mode of transmission, and can occur from skin-to-skin contact, especially from one's hands following sneezing or coughing.

Indirect Contact - Hands pick up organisms from contaminated surfaces or equipment, and then transmit the organisms to the individual or others.

Droplet - This involves exposure of the mucus membranes of the conjunctiva, nose, and mouth as a result of sneezing or coughing by an infected person. These droplets are heavy and usually travel no more than approximately two metres (six feet) before falling to the ground.

Airborne Transmission – This occurs by dissemination of an infectious organism either by droplet nuclei or tiny particles in the air. The organism can be widely dispersed by air currents and remain suspended in the air for extended periods of time (hours), enabling it to be inhaled.

Common vehicle – A contaminated inanimate vehicle such as food, water, or blood products may serve as a passive vector for transmission, or even allow the microorganism to multiply within them.

Vectors (e.g. mosquitoes, flies, and bats) carry microorganisms as part of their normal flora, or as an infection, and may infect humans through a bite.

Some microorganisms have single routes of transmission (e.g. TB), while others have two or more routes (e.g. influenza, measles, salmonella).[1]

Portal of Entry: These may be the same as the portals of exit. All of the portals have natural barriers that protect the body from microorganisms. The barriers are normally effective, but microorganisms may enter if the barriers are damaged, or if they have been compromised by

invasive medical devices (e.g. catheters, feeding tubes). Examples of portals of entry include the gastrointestinal tract where the infection is by ingestion, or the urinary system via a urinary catheter.[1]

Susceptible Host: Humans have defense mechanisms to protect against infections. These include:

- skin;
- mucous membranes;
- certain body secretions such as tears;
- inflammatory response;
- genetic,
- hormonal,
- nutritional and/or behavioural mechanisms; and
- personal hygiene.

The same organism may produce different severity of illness in different individuals depending upon their own host mechanisms. Occasionally, circumstances arise where the normal balance between microorganisms and their host is disturbed. This may be due to:

- a disease process,
- altered immune status,
- extremes of age,
- invasive procedures,
- drug therapy,
- poor nutrition, and
- irradiation, etc.

Should the host develop an infection as a result of this disturbance, a new reservoir of microorganisms may be established, thus further increasing the risk of infection to other people.[1]

2.3 Interruption of the Chain of Infection

By understanding the basic roles and functions of microorganisms in our environment, principles can be applied to interrupt the chain of infection. Good personal hygiene and proper handling of body excretions and secretions cannot be over-emphasized. Diligent hand hygiene remains the single most important element in controlling the spread of infections. **Preventing infections is the responsibility of everyone (caregivers and clients).**

3.0 Routine Practices for Home and Community Care

Routine practices is the term used by Public Health Agency of Canada[2] to describe the system of infection prevention and control practices used to prevent the transmission of infections in healthcare settings.

Routine practices are the foundational practices used with all patients/clients in all healthcare settings at all times.

Close attention to routine practices is paramount to preventing transmission of microorganisms in all healthcare settings. The Public Health Agency of Canada document outlining these practices can be downloaded at: https://www.picnet.ca/practice-guidelines.

The basic elements of **routine practices** include:

- Point of care risk assessment
- Hand hygiene program (including point-of-care alcohol based hand rub)
- Source control (triage, early diagnosis and treatment, respiratory hygiene, spatial separation)
- Client placement, accommodation, and flow
- Aseptic technique
- Use of personal protective equipment (PPE)
- Sharps safety and prevention of bloodborne pathogen transmission
- Management of the client care environment
    - Cleaning of the client care environment
    - Cleaning and disinfection of non-critical client care equipment
    - Handling of waste and linen
- Education of clients

3.1 Point-of-Care Risk Assessment for Home and Community Care

Any client admitted to home and community care programs may carry potential risks for introducing and transmitting infections within the service: from client to healthcare worker (HCW), from HCW to client, or from client to client. **If the client's illness/condition requires that additional precautions be used while providing their care, the referring organisation should inform the home care agency at the time of referral.** Never-the-less the healthcare provider should keep in mind that the information on the referral form may not present the complete picture. Early identification of infection prevention and control issues, in conjunction with education for the client and family, is an essential component of infection prevention and control in the community.[2]

Depending upon the intake process for new clients, there may be two opportunities to perform a risk assessment. They are:

1. While booking the initial appointment, questions regarding potential infectiousness should be asked. Questions should include whether the individual has a fever, cough, rash, or vomiting/diarrhea. **This risk assessment should be ongoing for all interactions**.

2. During the admission process, a more complete health history is performed by using information from the person's intake form or other documentation, as well as interviewing the client.

The admission risk assessment of the client should include questions about:

- Tuberculosis including previous or present evidence (if the client is from an identified risk group) of disease
- Antibiotic-resistant organisms such as Methicillin Resistant *Staphylococcus aureus* (MRSA)
- The presence of any chronic infections
- Skin and soft-tissue infections (boils, cellulitis) to determine if secretions are contained
- Infestations (e.g. scabies, head or body lice)
- Gastrointestinal illness (nausea, vomiting, diarrhea)
- Any acute respiratory infection (fever, cough)
- The client's ability to comply and cooperate with hand and personal hygiene, self care etc.
- Continence issues

Prior to every client interaction, HCWs have a responsibility to assess the infectious risk posed to themselves and others by a client, situation, or procedure. The point of care risk assessment (PCRA) is based on judgement about the clinical situation (including the client's clinical condition, physical, emotional, and mental state) and their environment to assess for possible exposure to infectious organisms and the need for any additional precautions.[2]

Risk assessments also provide an opportunity to identify new health issues that require intervention and to evaluate whether the care given is meeting the client's needs.

Point of care risk assessment questions should include **(C11):**

- What contact is the HCW going to have with the client?
- What task(s) or procedures(s) is the HCW going to perform?
- Is there a risk of splashes/sprays?
- Is additional protective equipment needed?
- If the client has diarrhea, is he/she continent?
    - If incontinent, can stool be contained in an incontinence product?
- Is the client able and willing to perform hand hygiene?
- Is there improvement in any previously identified skin or soft tissue infections?
- What is the status of any infestations previously identified (e.g. scabies, head or body lice)
- Are there new symptoms that could indicate an infection? (e.g. fever, cough, vomiting)

Factors demonstrated to increase one's risk of developing infections include:[3]

- Extremes of age
- Recent or extended stay in an acute care facility, or recurrent hospitalizations

- Invasive procedures and presence of invasive devices (e.g. IV, urinary catheter, tracheostomy, gastrostomy feeding tube)
- Recurrent antibiotic use
- Presence of a surgical wound, decubitus ulcer, or other chronic wound
- Exposure to a person who is infected with an organism and had draining skin lesions or wounds or copious respiratory secretions
- Age or medication-related malnutrition and/or immunosuppression
- Chronic illness and/or underlying medical conditions (e.g. HIV/AIDS)
- Conditions requiring extensive hands-on care
- Poor personal and/or household hygiene
- Cognitive challenges (e.g. brain injury, dementia, mental health conditions)

NOTE: ***The presence of a microorganism such as MRSA, VRE or a CPO should not exclude the client from home or community care as long as they meet the criteria for home nursing services.*** **C11**

3.2 Hand Hygiene for Home and Community Care

Hand hygiene is the single most important procedure for preventing the transmission of any kind of infection in any setting. ***When performing hand hygiene in a client's home, the provider should use their own hand hygiene supplies provided by the agency.***[4] **C11**

For healthcare-related purposes, an alcohol-based hand rub (ABHR) of at least 70% alcohol is recommended for hand hygiene unless hands are visibly soiled.[4] Alcohol based hand rub typically purchased in stores usually contains about 62% alcohol. This concentration is completely acceptable for general use by clients in their home and community.[5-9]

When hands are visibly soiled or when the client has gastrointestinal symptoms such as diarrhea and the cause is unknown, then hand washing is the preferred hand hygiene method.
A neutral soap from a disposable dispenser should be used for hand washing; remove jewellery prior. Fingernails should be kept short**. Utilize the first available method for cleaning hands, then follow with the preferred method if not immediately available.**

Healthcare providers may care for a client without access to clean or running water. If hands are visibly soiled with dirt, blood or other body fluids and there is no running water available in the home, clean the hands first with an individual-use towelette, followed by the ABHR. Wash hands with soap and water as soon as possible.

Artificial nails and nail extenders are not acceptable in healthcare settings, as they are known to harbour infectious organisms and have been implicated in outbreak investigations.[4, 10-13] **B11**

Caregivers are required to perform hand hygiene:

- Before and after all client care
- Before and after handling, preparing, or serving food
- After using toilet facilities, blowing the nose, and/or covering a sneeze or cough
- After changing a diaper or incontinent product, or assisting a client in using the toilet (ensure client also performs hand hygiene)
- After handling pets
- After touching inanimate sources that are potentially contaminated
- Prior to leaving the clients home

Clients who are able to participate in self-care should be taught, encouraged, and reminded of the importance of hand hygiene before eating or preparing food, after using the toilet or other [4] personal hygiene activities, as well as before leaving their homes for common/public areas, and when returning home from public places. **C11**

Clients who are unable to participate in hand hygiene due to physical or mental impairments should be assisted with hand hygiene prior to meals, after toilet use, etc. **C11**

Since intact skin is the first line of defense for microorganisms, attention to skin care and use of a hand lotion is recommended. ***Caregivers (family and home support workers) with open lesions on their hands should to apply an occlusive (air and water tight) bandage before caring for the client; if the lesions are extensive, the caregiver should consult with his or her physician or occupational health service about appropriate coverage of the affected area, or exclusion from the work setting.*** **C11**

For more details related to hand hygiene programs please refer to the BC Ministry of Health document *Best Practices for Hand Hygiene In All Healthcare Settings and Programs.*[4]

3.3 Source Control for Home and Community Care

Source control measures are used to contain organisms from being spread from the infectious source. In the home environment, source control measures include:

- Early identification, diagnosis, and treatment of infection
- Respiratory hygiene (cough etiquette)
- Hand hygiene
- Spatial separation for symptomatic clients
- Up to date immunizations
- Annual influenza immunization
- Safe handling of sharps

- Having client wear a surgical mask if they have infectious respiratory symptoms (and can tolerate wearing the mask).

3.3.1 Immunizations of Client

Encourage clients to discuss their immunization needs with their family physician and keep their immunization status current. In addition to the regular baseline adult immunizations, the following are recommended by the British Columbia Centre for Disease Control:[14]

- Combined tetanus-diphtheria (Td) vaccine should be updated if a booster has not been given in the previous 10 years. During the adult years, one of the Td boosters should also contain acellular pertussis
- Annual influenza vaccine
- Pneumococcal vaccine for those 65 years and older or others with specific high risk medical conditions
- Varicella for those who are susceptible

These immunizations are publically funded and may be obtained from the client's general practitioner or local Public Health unit. Information regarding immunizations can be found at http://www.bccdc.ca/immvac/ForHealthProfessionals/ImmsHealthProfsSchedules.htm.

3.4 Aseptic Technique for Home and Community Care

Aseptic technique is a method of practice that prevents the transfer of microorganisms from the client's body surface to one of their normally sterile body sites, or from one person to another, by keeping the microbe count to an irreducible minimum. Aseptic techniques, also known as sterile techniques, are measures designed to render the client's skin, supplies, and surfaces maximally free from microorganisms. These practices are used when performing procedures that expose the client's normally sterile sites (e.g. intravascular system, urinary tract) in order to keep them free from microorganisms. Components of aseptic technique prior to a procedure involve the following:

- preparing the client's skin with an antiseptic;
- hand hygiene;
- use of sterile gloves, gowns, masks, equipment, and drapes;
- and maintaining a sterile field.[2]

Common invasive procedures performed in home care that require aseptic technique include initiating intravenous access, surgical wound care, and insertion of urinary catheters.

Infections (either local or systemic) may result from insufficient skin cleansing prior to injection of medications, vaccines, or venipuncture. Chlorhexidine in alcohol inactivates microorganisms on the skin more effectively than most other antiseptics, and is the preferred antiseptic for skin preparation prior to insertion of central venous catheters.[15-18]

Aseptic technique for the withdrawal of medication or other sterile substances from any vial or other container includes: hand hygiene, the use of alcohol to prepare the rubber stopper or injection port (waiting for alcohol to dry), single-use sterile needles and syringes, and following manufacturer's instructions. Transmission of hepatitis B and hepatitis C virus and other agents has been related to the reuse of needles and/or syringes used to withdraw agents from multiuse vials; inappropriate use of glucose monitoring equipment; and reusing a single needle and syringe to administer medications to multiple clients.[19-24]

Injection safety procedures include:

- Do not administer medications from the same syringe to more than one client, even if the needle is changed.
- Consider a syringe or needle to be contaminated after it has been used to enter or connect to a client's intravenous infusion bag or administration set.
- Do not enter a vial or bag/bottle with a used syringe or needle.
- Do not use medications packaged as single-use vials for more than one client.
- Assign medications packaged as multi-use vials to a single client whenever possible.
- Follow aseptic practices during the preparation and administration of injectable medications.

3.5 Use of Personal Protective Equipment (PPE)

3.5.1 Gloves

Touch is a fundamental part of human interaction, and can be an important aspect of quality client care. Gloves are not needed for routine client care when the contact is limited to a client's intact skin (e.g. assisting in bathing)**.** When using gloves,

- Remember that **glove use is not a substitute for hand hygiene**[2]; hands must be cleaned before **and** after glove use.
- Wear the appropriate type of glove for the task (see below).
- Remove hand jewellery (jewellery reduces the effectiveness of thorough hand hygiene, and can tear gloves).
- Do not wash gloved hands and re-use gloves for care on another client.
- Dispose into regular garbage (if disposable).

Three types of gloves are available: sterile disposable, clean non-sterile disposable, and non-disposable rubber gloves.

- **Sterile (surgical) gloves** are worn to protect clients from contamination during an aseptic procedure. They also provide protection for the wearer. Use these gloves when performing a sterile procedure (e.g. inserting or changing a urinary catheter).
- **Clean (non-sterile) disposable gloves** (single-use medical examination gloves — vinyl, latex, or copolymer nitryl or nitrile) are worn to protect the wearer from sources of contamination. Use these gloves when touching blood or other body secretions/ excretions, mucous membranes, undiagnosed rashes, or protecting the caregiver's skin

if he or she is at risk due to non-intact skin such as dermatitis. Choose the appropriate glove to fit the specific task (i.e. nitrile gloves for exposure to chemicals)

- **Non-disposable rubber gloves** (e.g. rubber household gloves) are for tasks other than client care. Use these gloves to protect the hands from chemicals and detergent solutions while performing routine housekeeping. Rubber gloves should be cleaned after use and only be used in one home.

Reuse of single-use gloves by washing with soap and water or any other disinfectant is NOT advised. This practice affects the gloves' integrity and has not been shown to be effective in removing inoculated microorganisms.[25-27] **C1**

3.5.2 Gowns and Protective Apparel (i.e. aprons)

The routine use of gowns and aprons for basic client care is not necessary. ***Gowns and/or plastic aprons should be worn when a staff member's clothing is likely to become soiled with blood, or body fluids such as feces, urine, or any other secretions, or if significant contamination of the environment is occurring.***[2] **C11**

Examples of significant contamination of the environment include:

- Uncontrolled diarrhea that cannot be contained with incontinence products, and resident is not confined to bed
- Draining an infected wound in which dressing cannot reliably contain drainage
- Excessive skin desquamation

Use gowns or aprons for specific clients only, and dispose into regular garbage immediately after each use.

3.5.3 Masks and/or Other Face Protection (goggles, face shield)

The science regarding respiratory protection in the home care setting for respiratory illness is still evolving. At this time, masks are not usually required in home care settings.

Healthcare providers should wear a mask that covers the mouth and nose, and goggles or a face shield during client-care activities that are likely to cause splashes or sprays of blood, body fluids, secretions, or excretions onto the face.[28-30] Examples of these activities include irrigation using fluid under pressure, suctioning, or tracheotomy care. **A11**

Prescription eyewear does not provide adequate protection; therefore, goggles or face shields that fit over eyewear must be worn whenever splashes or sprays are anticipated.[2]

Surgical masks filter particles that are 5 microns in size or larger (i.e., large droplets). They provide a physical barrier against respiratory droplet secretions that are spread during close contact, sneezing, coughing, singing, and certain procedures. A surgical mask is worn when the caregiver is within two metres of a coughing client, for activities that are likely to cause splashes or sprays onto the face, or for aseptic procedures. These masks are single-use only and almost

always worn in conjunction with eye protection. An exception to this may be the use of a surgical mask when performing some aseptic procedures.[2]

N95 respirators have a removal efficiency of 95% for the most penetrating particle of 0.3 micron and are used to protect against infectious particles also known as respirable or droplet nuclei. N95 respirators are worn when caring for individuals who require airborne precautions, or when performing aerosolizing procedures. Procedures which fall into this category include bronchoscopy, open suctioning of airway secretions, endotracheal intubation, and resuscitation involving emergency intubation or cardiopulmonary resuscitation.[2] When an individual with an infectious disease such as tuberculosis speaks, coughs/sneezes, or sings, a wide range of particle sizes are generated. Some of these are immediately of respirable size, while others may quickly reduce in size, remain viable, and become respirable.

These smaller droplet nuclei can remain aloft for long periods of time. If a N95 respirator is considered necessary, a process called fit testing (a WorkSafeBC regulatory requirement) will ensure that the correct respirator type and size is worn, and that the wearer is taught how to do a fit check to ensure a proper facial seal each time the device is worn.[31, 32] ***Healthcare workers should only use the type of respirator for which they were successfully fit tested***. WorkSafeBC reg.

Principles for using masks and respirators:

- Perform hand hygiene before putting on a face mask.
- The mask should fit snugly over the face, and should fully cover the nose, mouth, and chin.
- The metallic wire part of the face mask should be fixed securely over the bridge of the nose to prevent leakage.
- Tie all strings that keep the mask in place, or fix the rubber bands of the mask around the ears properly. Do not dangle the mask around your neck.
- Change mask if it becomes wet, soiled, or dirty.
- Perform hand hygiene after removing and discarding the mask.

It is important to remove PPE in a way that does not contaminate oneself.

3.6 Safe Use of Sharps

Safety-engineered sharp devices should be used wherever possible, and the safety of clients and healthcare workers should be considered when selecting safety-engineered sharp devices. **WorkSafeBC Regulation.**

Needles should not be recapped; used needles and other used single-use sharp items should be disposed of immediately into designated puncture-resistant containers that are easily accessible at the point-of-care.[32, 33] **C11**

The person using a disposable item (e.g. needles, scalpel blades, etc.) is responsible for its safe disposal in an appropriate container (sturdy with a tightly fitting lid). Examples of clinical sharps include needles, stitch cutters, and any other sharp object that may have been in contact with blood, body fluids or exudates.

Needles must **not** be recapped, purposely bent, broken, removed from a disposable syringe, or manipulated by hand. Sharps containers should be readily available in all areas of client care. Carry a small sharps container in each home care vehicle and leave one in homes that do not have one. Sharps containers must be puncture resistant, have a tight-fitting lid that seals, and be clearly labelled.

- Do not uncap a needle unless there is an appropriate container accessible for immediate disposal. Use "point of use" disposal receptacles for sharps.
- Ensure that containers are safely placed in the client's home, mobile clinic, or other settings, in consideration of children, confused adults, drug abusers, etc.
- Sharps containers must **not** be over-filled. Most containers indicate a "fill line" at about the ¾ full mark, beyond which the container should not be filled. Remove and replace sharps containers when the "fill line" is reached. Broken glass contaminated with body fluids may be disposed of in the sharps containers. Replace full containers immediately.
- Teach clients, their family members, friends, or other caregivers in the home the correct procedures for safe handling and disposal of sharps and sharp containers.

Some municipalities in British Columbia may allow needles used in the home to be disposed of as general waste. They may require decontamination by adding bleach before sealing the lid. Check with local waste management authorities in your region for the appropriate disposal method. Local pharmacies often have an exchange program for sharps containers.

3.7 Management of the Client Care Area in the Home

3.7.1 Personal Care Supplies

Personal care supplies pertain to those items used for elements of a person's routine care such as bathing, skin care, nail care, oral care, and denture care. It is important that personal care supplies are not shared, and are kept clean. This can minimize the risk of transmission of infection or infestations (e.g. lice, scabies).[2, 34-36] ***Clients should have their own soaps, lotions, or creams, toothbrush, toothpaste, denture box, comb, hairbrush, nail file, nail clippers, shaver (electric or disposable), and bath towel. These items should not be shared with others, including family members***.[2, 34-36] **C1**

3.7.2 Household Cleaning

Healthcare professionals will need to educate clients about the importance of environmental cleaning, and assess their ability to perform these tasks. Some may need additional supports to ensure a clean environment.

Consistent, regular cleaning assists in reducing the potential for environmental transmission of microorganisms. Encourage clients and their caregivers to perform regular cleaning of frequently touched surfaces (e.g. taps, sinks, toilets, bedside tables) as one way to prevent the spread of infection to others in the home. Housekeeping routines should include cleaning of surfaces, toys, and objects with a general household cleaner, using the correct concentration and contact time. Cleaning physically removes rather than kills microorganisms, reducing the organism load on a surface. It is accomplished with water, detergents, and mechanical action. The key element of cleaning is the use of full contact of cleaning cloth with friction and taking the time to ensure all surfaces are wiped. Common, over-the-counter cleaning agents are completely adequate for cleaning in a home environment [37, 38]. In the event of an acute infectious illness of one of the household members, it may be prudent to use a hospital grade disinfectant. See Appendix B for a description of disinfectants.

3.7.2.1 Bath Tubs

Clients at home or in a group living arrangement may not have access to private bathroom facilities; therefore clean bath tubs after each use.

- Use regular soap for bathing. Use of antimicrobial soap in the home and community is neither necessary nor recommended.
- Clients that are infected or colonized with an antibiotic resistant organism (ARO) or who have diarrhea or fecal incontinence should bathe in the bathtub as necessary for healthy skin care, regardless of diagnosis. Clean and disinfect the bath tub after each use. If it is a special purpose tub, follow the manufacturer's instructions for cleaning.[2, 39]

3.7.3 Client Care Equipment and Supplies

Evaluate clients on a case-by-case basis to determine whether dedicated equipment is indicated. Limit the amount of reusable equipment that is brought into the home of clients.

Minimize supplies going into the home and discard any unused disposable equipment or supplies from the home following discharge from home care services. Whenever possible, leave reusable client care equipment in the home until the client is discharged from home care services

Reprocess non-critical client care equipment (e.g., stethoscope) that cannot remain in the home by cleaning and low-level disinfection before removing from the home. Alternatively, contaminated reusable items can be stored in a sealable plastic bag for transport to an appropriate facility for cleaning and disinfection.

3.8 Cleaning, Disinfection and Sterilization of Reusable Medical Equipment

Cleaning is always essential prior to disinfection or sterilization. An item that has not been cleaned cannot be assuredly disinfected or sterilized. The purpose of cleaning is to remove soil, dust, foreign material, or contaminants. Soil or other foreign materials can shield microorganisms and protect them from the action of disinfectants or sterilants, as well as interact with the disinfectant (or sterilant) to neutralize the activity/process.[2] Cleaning physically removes, rather than, kills microorganisms. It is accomplished with water, detergents, and mechanical action. Thorough and meticulous cleaning is required before any equipment/device may be disinfected and/or sterilized.[40]

Disinfection is a process used on inanimate objects to kill microorganisms when cleaning processes alone do not render them safe for their intended use. Disinfection does not destroy bacterial spores.[41]

Sterilization is a process used on inanimate objects, which results in the destruction of all forms of microbial life including bacteria, bacterial spores, viruses, and fungi.[40]

There are three levels of reprocessing equipment:

Low-level disinfection is the level of reprocessing required when processing non-critical medical equipment/devices. These items contact only client's intact skin. Medical equipment/devices must be thoroughly cleaned prior to low-level disinfection. Low-level disinfection will kill vegetative bacteria, some viruses, and some fungi. This class of disinfection cannot be relied on to kill bacterial spores or mycobacteria such as Mycobacterium tuberculosis.[40]

High-level disinfection is the level of reprocessing required when processing semi-critical medical equipment/devices. These items contact client's mucous membranes. High-level disinfection processes destroy vegetative bacteria, mycobacteria, fungi, and enveloped (lipid) and non-enveloped (non-lipid) viruses, but not necessarily bacterial spores. Medical equipment/devices must be thoroughly cleaned prior to high-level disinfection.[40]

Sterilization is the level of reprocessing required when processing critical medical equipment/devices. These items enter client's tissues or sterile cavities. Equipment/devices must be cleaned thoroughly before effective sterilization can take place.[40]

***Reusable semi-critical or critical instruments should be reprocessed according to BC Best Practices for Cleaning, Disinfection and Sterilization. Personnel need to be adequately trained and assessed for competency*. Ministry of Health Policy Communiqué.**

For cleaning of specific equipment commonly found in home care, see Appendix C.

3.9 Computer/Paper Medical Records

Do not take a computer or medical record into an area where contamination is likely to take place. Perform hand hygiene between client contact and documentation. The medical record or technological equipment can be accessed after the client visit for charting. (See computer care guidelines: Appendix D.)

3.10 Food Safety

Clients may become ill from food borne microorganisms. To prevent this:[42]

- Carry out hand hygiene before, during, and after preparing or handling food.
- Clean and disinfect counters and other surfaces before, during, and after preparing food.
- Rinse fresh fruits and vegetables under running water, including those with skins e.g. oranges) and rinds (e.g. cantaloupe). Rub with hands or scrub with a vegetable brush while rinsing, if skin/rind is firm enough.
- Ensure juices from raw meats, seafood, and poultry do not drip onto ready-to-eat or other foods in the fridge. Cover ready-to-eat foods and store them above raw foods.
- Use separate cutting boards and utensils for raw and ready-to-eat foods.
- Ensure meat and poultry is thoroughly cooked or reheated to a safe temperature of 74^{o}C (165^{o}F).

For more information on food safety, go to http://www.bccdc.ca/foodhealth/default.htm.

3.10.1 Eating Utensils

Clients often share a communal dining room. Meals are served and dishes are cleared according to routine efficient working procedures. Handle and store dishes and utensils in a manner that prevents contamination of clean dishes from soiled items.

Regular dishes can be used for all clients whether or not they have any infectious disease. The combination of hot water and detergents used in dishwashers is sufficient to clean all dishes, glasses, cups, and eating utensils. Some commercial dishwashers use heat to sanitize, (the final rinse temperature must be at minimum 71^{o}C (161^{o}F),[43]), while other dishwashers use a chemical sanitizer such as chlorine bleach. Domestic dishwashers may be an acceptable alternative in some residential care facilities or in a client's home. These machines use a longer rinse cycle to achieve sanitization. It is important to allow the machine to complete its cycle.

If washing dishes by hand in a client's home, a water temperature of at least 44^{o}C is recommended.[42] Please see BCCDC's guidelines at http://www.bccdc.ca/foodhealth/foodguidelines/default.htm.

Note: The hot water heater should be pre-set at 60°C; hot water in the entire tank must be stored at 60°C and equipped with antiscald device to decrease the water temperature to 49°C or less, especially at taps in the bath or shower. This is to minimize the risk of scalding and the risk of legionellosis .[43, 44] In addition, any heated water accessible to children or person in care is to be at 49°C or less.[45]

3.11 Soiled Linen

Microbial counts on soiled linens are significantly reduced by the mechanical action and dilution of washing and rinsing. With the high cost of energy and use of cold water detergents (which do not require heat to be effective), hot water washes are not necessary for everyday clothing. There are several studies that show low temperature laundering will effectively eliminate residual bacteria to a level comparable to high temperature laundering.[46-48]

Linens used in the healthcare setting can be laundered together using detergent, and dried in a hot air dryer to ensure killing of microorganisms. Linens soiled with large quantities of organic material (i.e. stool or vomitus) will require pre-treating to remove the material. It is impossible to clean laundry when organic material is present. Although soiled linen has been identified as a source of microorganisms, the risk of actual disease transmission appears low.[47, 48] One study published[49] demonstrated that transfer for organisms from hospital curtains back onto hands did occur, but with only very small amounts of the organism.

Healthcare providers should handle any laundry soiled with blood or body fluids with gloves, and avoid touching it to their clothes or skin. Position the laundry basket nearby to reduce handling (keep off the floor and upholstered furniture); handle with minimal agitation and do not shake; remove fecal material into the toilet. Teach family or caregivers how to handle contaminated laundry safely. Wash heavily soiled laundry separately and add bleach to wash water according to the manufacturer's instructions if material is bleach tolerant. Store clean laundry apart from soiled linens. Hand hygiene is required when task is complete.

3.12 Nursing Supply Bag

The supply container/bag is not commonly associated with spreading infections. Nursing bags should be made from a minimally porous material, and cleaned inside and out with a hospital grade disinfectant at least weekly.[50] If possible, leave any equipment in the client's home until discharge. This equipment should be dedicated to the client, and handled according to cleaning guidelines at time of discharge.

If non-critical client care equipment (e.g. stethoscope) cannot be left in the home, clean and disinfect the item using a low level disinfectant before taking it from the home. Alternatively,

place reusable items in a plastic bag for transport and subsequent cleaning[51] (follow own agency policy and procedure).

Care providers should perform hand hygiene prior to reaching into the bag to obtain supplies. Any equipment used on the client should be cleaned prior to being returned to the bag. Inside the supply container/bag, semi-critical items should be kept covered, and critical items should be contained in sterile wrappers that will prevent contamination.

The healthcare provider's supply container/supply bag should be made of material that is easily cleaned or washable. The bag should be cleaned whenever it is visibly soiled, and at regular intervals as determined by the agency. Wipe the inside of the bag with an approved disinfectant.

An option to nursing bags made from material is to use a double-lined sturdy paper bag which can be disposed of at regular intervals or when contaminated.

3.13 Waste Disposal

It is important that waste be disposed of safely and properly. Usually, waste generated in home and community healthcare settings is no more hazardous than general household waste. Non-biomedical waste, such as general office waste, used gloves, or non-sharp medical equipment, requires no special handling other than containment during disposal and removal.

However, there are certain items that may be considered biomedical waste, in accordance with local, regional, provincial and federal regulations on waste segregation, handling and disposal. Legislation requires that biomedical waste be handled and disposed of in such a way as to avoid transmission of potential infections. Waste, such as liquid blood or body fluid drainage in containers that cannot be emptied into a toilet, may require special disposal depending upon your community bylaws. See your local, regional, provincial and federal regulations on waste.

If unsure, contact your municipality for policy details. British Columbia municipality contact information can be found at: http://civicinfo.bc.ca/11.asp

3.14 Client and Family Education

Education for clients should include specific information about their general condition (usually this is provided by the attending physician) and specific information concerning any infection. If the client has an infection, this information should include practices necessary to reduce the risk of spread.

The healthcare provider should provide education for the client and family as appropriate for the presenting condition. **C11**

Education should also include:

- The importance of how and when to perform good hand hygiene (before leaving their residences for public areas and upon returning home from outings; after using the toilet; and before eating or preparing food).
- How to practice good respiratory etiquette, which includes covering the nose and mouth with a disposable tissue or the upper arm when coughing or sneezing (even when this is due to allergies or dust), using a disposable tissue to blow/wipe nose, and always performing hand hygiene afterwards.
- The importance of keeping hands away from the mucous membranes of the eyes, mouth and nose (e.g. avoid rubbing the eyes and nose, or biting fingernails).

BC Health Files are helpful as a client/family reference. They can be downloaded at: https://www.healthlinkbc.ca/servicesresources/healthlinkbcfiles/hlfileslist.html.

3.14.1 Client Activities

In group living arrangements in the community, the use of infection prevention and control principles when providing care of the client in the home must be congruent with promoting an optimal healthy lifestyle, while protecting the other residents in that setting. Base decisions regarding communal activities upon the clinical presentation of the client that day.

Individuals with symptoms such as fever, cough, diarrhea, vomiting, or with wounds in which the drainage cannot be covered and contained, should not participate in group events until symptoms have resolved. **C11**

It is important to promote and facilitate hand hygiene among all clients, staff, volunteers, and visitors.

3.15 Visitors

Visitors who may have a communicable disease (e.g. chicken pox, measles, vomiting, or diarrhea) should not visit clients during the period when they are ill. Provide education regarding disease communicability as needed.

Visitors with respiratory tract infection or gastrointestinal symptoms should be asked to postpone their visits until they have recovered. **C11**

Those who must (unavoidable) visit someone with acute respiratory symptoms should wear a mask or respirator, as appropriate. **B11**

Encourage all visitors to perform hand hygiene and use good cough etiquette.

3.16 Pets

Pets can enhance a client's quality of life. Assisted living facilities should have formal pet policies that ensure the safety of the clients and the pets.

Appropriate infection prevention strategies will protect clients from pet-borne diseases. The principles for preventing the spread of pathogens from pets are the same as those for humans. Good hand washing practice is the single most important infection control measure. Clean hands with soap and water or ABHR after handling domestic animals, animal food, and pet treats.[52, 53]

General practices include:[52, 54, 55]

- Pets should be in good general health, house trained, good tempered, clean, and examined regularly by a veterinarian.
- Vaccinations should be up to date. Pets should not be allowed in common food preparation areas or service areas.
- Keep pet food separate from human food.
- Pets should have their own area for sleeping and eating.
- Pet eating areas should be kept clean, and animals have their own dishes and utensils. Dishes, utensils, and tin openers used for pet food should be cleaned and stored separately.
- There should be an individual designated to be responsible for all care of the pet (i.e. feeding, exercise and hygiene — which includes cleanup of any excrement).
- Keep pets off kitchen surfaces or areas where food is prepared.
- Clean all cages and launder bedding regularly.
- Ensure litter trays are cleaned regularly (daily).
- Use gloves and paper towels to clean up animal faeces.
- Animal faeces can be flushed down the toilet. However, faeces in plastic bags and soiled cat litter should go into the waste bin.
- Clean floor surfaces used by pets and pet feeding areas regularly by cleaning followed by disinfection, or using a disinfectant/cleaner.
- Keep sandboxes/sandpits covered to avoid soiling by animals.
- Pregnant women should **not** clean cat litter trays.

In individual homes it is recommended that the family pet is not in the room when active care is given especially clean or aseptic procedures such as initiating IVs, dressing changes or inserting Foley catheters. **C11**

3.17 Pests and Infestations

Occasionally home and community care workers may encounter pests (e.g. bed bugs) in individual residences. While pests such as bedbugs are not associated with transmission of

disease, healthcare workers will need to avoid becoming a "vehicle" for their transfer to other houses. Please see Appendix E for an example of instructions for staff, from Vancouver Coastal Health. For general information for clients, see BC Health Files # 95 http://www.healthlinkbc.ca/healthfiles/hfile95.stm.

Other pests, such as mice or rats, have been associated with the transmission of disease. Special care must be taken when cleaning rodent droppings. Please see BC Health Files # 37 http://www.healthlinkbc.ca/healthfiles/hfile37.stm for instructions regarding how to respond if evidence of the presence of rodents (e.g. droppings) is found. If pests are found in an assisted living facility, or any licensed facility, especially in the food service area, Public Health should be notified. In most health authority-operated facilities, pests are dealt with by plant services and/or housekeeping.

Home and community care staff may also encounter infestations of lice and/or scabies. These pests are not associated with disease transmission; however, staff will need to avoid acquiring them and transmitting them to another home. Please see BC Health Files #06 at http://www.healthlinkbc.ca/healthfiles/hfile06.stm for information about lice and BC Health File #09 at http://www.healthlinkbc.ca/healthfiles/hfile09.stm for information about scabies.

4.0 Additional Precautions

Occasionally, routine practices are not sufficient to interrupt the transmission of certain organisms, and additional precautions as well as routine practices may be required. These precautions fall into three categories: contact, droplet, and airborne precautions; and are based upon the actual mode of transmission of the organism. These precautions are used in addition to the routine practices described earlier. Additional precautions are implemented differently in a home and community care setting than in a hospital setting because in the latter, the risk of transmission of infection is higher.[2]

Note: Some conditions require a combination of precautions: e.g., influenza requires droplet and contact precautions, and disseminated herpes zoster requires airborne and contact precautions.[1]

4.1 Contact Precautions

Contact precautions are used for clients known or suspected to have microorganisms that can be spread by direct contact with the client, or by indirect contact with environmental surfaces or client care equipment. Examples of conditions that require contact precautions are: enteric infections, skin infections that are highly contagious (impetigo, scabies, non-contained abscesses), and respiratory infections, especially when cough etiquette is not well used. Gloves should be worn for all direct contact with the client as well as direct contact with the client's immediate environment, personal items, and equipment. Wear a clean gown to protect the healthcare provider's clothing from contamination when there is substantial contact with the client or environmental surfaces. No special treatment is required for linen, or dishes and eating utensils. Attention should be focused on preventing the transmission of the organisms to the next client or environment visited. [2]

4.2 Droplet Precautions

Droplet precautions are used for clients known or suspected to have microorganisms transmitted by large particle droplets (larger than 5 microns). These droplets may be produced during coughing, sneezing, or certain procedures such as suctioning. These particles are propelled a short distance, usually less than two metres (six feet), and do not remain suspended in the air. Common conditions that may be encountered in the home and community care setting include acute respiratory infection, mumps, and influenza. In addition to routine practices, healthcare providers should wear a surgical mask and eye protection when providing direct care to the client, or when they are in close proximity (2 metres). If in a group environment individuals should be spatially separated from others (2 metres), although they do

not require placement into a separate room. No special treatment is required for linen or dishes and eating utensils.[2]

4.3 Airborne Precautions

Airborne precautions are used for clients known or suspected to have microorganisms spread by the airborne route. These may consist of small particle residue (5 microns or smaller) that result from the evaporation of large droplets or dust particles containing skin squames and other debris. These can remain suspended in the air for long periods of time, and are spread by air currents within a room or over a long distance. Conditions that require this level of precautions include pulmonary TB, disseminated herpes zoster, chickenpox, or measles. In addition to routine practices, healthcare providers should wear a N95 respirator, for which they have been fit tested, upon entering the home.[2] In some specific diseases (e.g. measles, chickenpox) the healthcare provider is not required to use airborne precautions if they have proof of immunity such as documentation of vaccination, or previous disease themselves.[56, 57] No special treatment is required for linen or dishes and eating utensils.

Should a client that requires additional precautions need to seek medical care, the office or site should be notified in advance of the additional precaution requirement. In cases of droplet or airborne precautions, the client should be asked to wear a surgical mask and perform hand hygiene prior to leaving their home. Clients should also be instructed not to take public transit or utilize volunteer transportation services until they are no longer infectious.

In all cases when additional precautions are necessary, clients and family members should receive basic education about how to prevent transmission of the illness and proper use of any personal protective equipment needed. **C11**

4.4 Mandatory Reportable Diseases

It is also important to be aware that according to the Public Health Act, some communicable diseases are reportable to Public Health.[58] Each home care service should have a process for this reporting, with an assigned responsible person. The list of reportable diseases can be found in Appendix F.

5.0 Antibiotic Resistant Organisms (AROs) in the Home

It is possible to transmit AROs within the home between household members.[59, 60] The risk for this increases in settings where living space is small, personal items are shared between household members, and personal and/or environmental hygiene is poor.

There is no need to use additional precautions while caring for clients who are ARO positive in their homes simply based upon a positive ARO screen. Use a point of care risk assessment to determine what personal protective equipment is required. Routine practices already dictate the use of gloves when handling wound dressings or other body fluids. Diligent hand hygiene and thorough cleaning of any equipment used will be very effective in minimizing the risk of transmission to another client.[2, 61]

Teach clients to keep any open wounds securely covered, adopt good hand hygiene practices, not share personal items (e.g. face cloths, toothbrushes, towels, razors) with other household members, bath or shower daily using a neutral soap, and regularly clean household surfaces, especially those that are frequently touched. Encourage all members of the household to use good hand hygiene practices.[61]

6.0 Enteral Feeding

The process of enteral feeding bypasses an individual's natural defense mechanisms in the upper gastrointestinal tract, resulting in microbial overgrowth of bacteria in close proximity to the gut-associated immune system. This can increase the risk of movement of bacteria from the gut to the bloodstream, causing systemic sepsis. Therefore it is very important to use stringently clean processes when preparing and providing enteral feeds.

Teach and encourage clients and their household members to:[62, 63]

- Clean hands prior to preparing formula or touching the feeding system
- Maintain a hygienic kitchen
- Don't let formula sit at room temperature for more than 8 hours
- Clean and store syringes as per manufacturer's instructions
- Use cooled boiled water for flushing the tubing if water supply does not come from a reliable municipal system (e.g. well water).
- Store formula in refrigerator after opening
- Throw away all opened cans of food after 24 hours
- Hang feeds for no longer than 4-8 hours (check health authority policy), and always clean and rinse bag before adding fresh formula

7.0 IV Therapy in the Home

Aseptic approach is necessary when performing any invasive procedure, even when provided in the home care environment. Aseptic technique is indicated when delivering IV therapy, be it cannula insertion, IV drug administration or fluid administration.[2, 64] Invasive procedures such as IV cannula insertion and IV drug administration carry risks for IV infections secondary to breaches in infection control technique.[65] Although uncommon in peripheral IV therapy, the

delivery of a microorganism directly into the bloodstream can have severe physiological consequences for clients. A number of microorganisms are associated with IV therapy, including *Staphylococcus aureus, Pseudomonas,* and *Klebsiella*.[66]

Careful preparation of the skin is essential before the insertion of an IV cannula and administration of any IV drug or fluids. The issue of how long IV catheters should remain *in situ* is controversial, as there is evidence both supporting and refuting the need for changing the cannula site at regular intervals (usually 72 hours).[67, 68] Check your Health Authority's policy for regular cannula site change intervals; inspect the IV cannula daily; and remove/replace it if there is any evidence of infection, either locally or systemically.

A Cochrane Database Systematic Review supports the change of IV administration sets containing typical IV fluids (i.e. normal saline, 2/3 and 1/3/) every 72-96 hours; however, evidence is inconclusive whether sets containing parenteral nutrition require more frequent changes.[69, 70] Current guidelines recommend that IV administration sets (i.e. tubing, secondary lines, and bags) should be changed every 72–96 hours or immediately after the administration of blood products.[64, 67]

8.0 Urinary Catheter Care in the Home

Urinary catheterization is a common healthcare practice, and is associated with increased risk for complications such pyelonephritis, bacteremia, epididymitis and prostatitis in men, and most commonly, catheter-associated urinary tract infection (CAUTI).[71, 72] Catheter-related problems can contribute to excess healthcare utilization, as well as inconvenience in catheter users and their families.[71]

The bacteria that cause CAUTI can gain entry into the bladder either by moving into the bladder between the outside of the catheter and the inner side of the urethral wall, or by infiltrating upward inside the catheter drainage system after contamination of the drainage bag through the outflow tap or disconnection of the catheter.[73]

Catheterization should only be undertaken when all other methods of urinary system management have been deemed inappropriate or have failed.[72-74] **C1**

If indwelling catheterization is required, the catheter should be inserted using aseptic technique and be removed as soon as possible to reduce the risk of complications.[71, 72, 75] **C1**

Appropriate aseptic technique for the insertion of urinary catheters includes sterile equipment (e.g., gloves, drapes, sponges, and catheters), a sterile or antiseptic solution for cleaning the meatus, and a single-use packet of sterile lubricant jelly for ease of insertion.[74]

For clients who practice intermittent self-catheterization, there is no definitive evidence to support the use of sterile, single-use catheters over clean, re-usable catheters as a means of

decreasing the incidence of CAUTI.[76] ***Whenever clinically appropriate and practical for the client, intermittent catheterization should be used in preference to an indwelling catheter for long term use.***[75] **C11**

Common symptoms of CAUTI include urgency, frequency, dysuria, suprapubic tenderness, fever >38^{o}C, color or character changes in urine, hematuria, and positive culture. However, elderly clients with indwelling catheters may not present with the typical signs and symptoms of infection. A change in mental status in elderly individuals with indwelling catheters may be the first indication of CAUTI, and warrant further assessment.[77] Individuals with spinal cord injury also pose a challenge when assessing for CAUTI. One study[78] showed that the most accurate signs of UTI in individuals with spinal cord injury were ‘‘cloudy urine’’ and ‘‘foul smell in the urine,’’ whereas the most sensitive sign was ‘‘leukocytes in the urine.’’ This study also showed that for individuals with spinal cord injury, the actual objective signs and symptoms predicted a UTI more accurately than did individuals using subjective impressions of their own signs and symptoms.

Actions to prevent the occurrence of a catheter-associated urinary tract infections (CAUTI) include:

- Diligent hand hygiene by healthcare provider, client, or family prior to and after any handling of catheter and/or urinary drainage system
- Appropriate cleaning of urinary care supplies (follow manufacturer’s instructions)
- Frequent emptying of collection bag to keep below 2/3 full
    - when emptying prevent contact between drain tip and collection container
- Proper securement of collection tubing and bag to maintain an unobstructed flow of urine and prevent reflux
- Daily cleansing of meatus with neutral soap and water
- Changing indwelling catheters and drainage bags according to clinical indications such as infection, obstruction, or when the closed system is compromised rather than at routine, fixed intervals

When assessing a client for a CAUTI the results of the urine culture should always be interpreted in conjunction with the client’s clinical symptoms, and character of their urine.

9.0 Respiratory Therapy in the Home

Some clients in the home and community care setting require respiratory support and ventilator assistance. Often they have a chronic underlying disease (e.g. cystic fibrosis) or are otherwise immunocompromised (e.g. chemotherapy), which predisposes them to infections. Typical equipment and supplies used in these treatments include oxygen concentrators, ventilators, continuous or bi-level positive airway pressure, nebulizers, aerochambers, and face

masks or nasal cannulas. These devices may serve as a reservoir for microorganisms and contribute to respiratory infections if allowed to become contaminated.[79]

The majority of equipment used in respiratory therapy falls within the reprocessing classification of "semi-critical"[40, 79]. All equipment used in respiratory support should be cleaned on a regular schedule according to manufacturer's instructions.

10.0 Occupational Health

Protecting the health of the care provider is essential in all healthcare settings, including home and community care. Section 115 of the Worker's Compensation Act states that employers are not only responsible for their own workers, but also for other workers who may be functioning in their workplace. Employers must ensure that work is being conducted safely, and protect their workers from exposure to infectious diseases.[80] This includes:

- Identification of infectious diseases that are or may be in the workplace
- Develop and implement an exposure control plan
- Educate all staff on exposure risks identified and safe work practices, such as hand hygiene and use of personal protective equipment.
- Offer vaccinations as recommended in the BC Centre for Disease Control's *Communicable Disease Control Manual*, without cost to workers who are at risk of occupational exposure
- Purchase safety-engineered medical devices, especially needles/syrninges, where appropriate
- Encourage and facilitate staff in seeking medical attention as required

Screening for tuberculosis should be completed at start of employment and as required.[81] ***Any healthcare worker who requires the use of a N95 respirator should be fit tested and taught the proper application and removal of the respirator***. [31, 32] **WorkSafeBC Regulation**

Staff also have responsibilities to help reduce their risk of exposure to infectious pathogens, including the following:

- Attend education and training sessions
- Use a point of care risk assessment consistently to manage their risk of exposure
- Follow safe work procedures, including hand hygiene and appropriate use of PPE
- Seek immediate first aid and medical attention after an occupational exposure
- Report exposure incidents to supervisors or managers
- Workers should also keep a record of personal vaccinations, and ensure that their vaccinations are up to date.

10.1 Employee Immunizations

The employer has an important role in the promotion and provision of immunizations, as they are essential in preventing spread of communicable diseases. ***At start of employment, the employee should have a record of immunization on file in their confidential employee health record, and maintain their immunizations as per the BCCDC Immunization Manual***.[14] **C11**

Recognition and awareness of the care provider's immune status helps define the susceptibility of the provider in the event of exposure to a communicable disease. The health history also helps identify any work limitations or risk factors for the provider.

10.2 Exposure to Blood and Body Fluids

Occupational exposure to blood and body fluids can and does occur in the home care setting.[82] Replacing conventional sharps with needleless systems or devices that have safety-engineered features (e.g. retractable needles); providing point of care sharps disposal containers; and prohibiting recapping of needles are key measures in minimizing exposure from sharps.[32, 83]

Employers should encourage the reporting of all exposures to blood and body fluids including needle-stick injuries and have developed a post-exposure protocol that is consistent with the Accidental Exposure Guidelines by the BC Centre for Excellence in HIV/AIDS.[83] **C1**

Should an exposure occur, clean the exposed area.

a. Mucous membrane or eye: Rinse well with water and/or normal saline.
b. Skin: Wash well with soap and water (do not apply bleach to the wound).
c. Allow injury/wound site to bleed freely, and then cover lightly.

Do not promote bleeding of percutaneous injuries by cutting, scratching, squeezing, or puncturing the skin. This may damage the tissues and increase uptake of any pathogen(s).

If percutaneous, permucosal, or non-intact skin exposure has occurred, the exposed person should immediately have a risk assessment performed by a qualified health professional, preferably within 2 hours of exposure.[84] **C1**

Common locations where this is available are emergency departments, occupational health departments, or alternate sites the BC Centre for Excellence in HIV/AIDS has supplied with antiretroviral starter kits.[83] A full description of their recommendations is found at: http://cfenet.ubc.ca/sites/default/files/uploads/docs/Accidental_Exposure_Therapeutic_Guidelines_Nov82010.pdf

10.3 Exposure to Cytotoxic Drugs

A number of drugs used in healthcare settings (e.g., hospitals, physician's offices, home healthcare agencies) may pose a risk to workers through acute or chronic occupational exposure. The degree of risk is dependent on the inherent toxicity of the drug, as well as the extent of exposure.

Where a worker is or may be occupationally exposed to a cytotoxic drug, (e.g. a worker may be exposed via a needlestick injury or absorption through the skin) section 6.43 of the WorkSafe BC *Occupational health and Safety Regulation* requires that the employer implement an exposure control plan meeting the requirements of section 5.54 of the Regulation.

For further information on the required elements of an exposure control plan, refer to OHG Guideline G5.54-2.

http://www2.worksafebc.com/Publications/OHSRegulation/GuidelinePart5.asp#SectionNumber:G5.54-2

11.0 Ambulatory Healthcare Clinics

In general, the risks of healthcare-associated infection in ambulatory healthcare settings are much lower, primarily because the clients are more likely to be healthier than those treated in inpatient settings. In addition, ambulatory visits are shorter in duration and usually minimally invasive. However, many patients of higher acuity are being treated in outpatient settings because of a shift in care delivery from hospitals to alternative settings. Invasive procedures and advanced technologies are being used with increasing frequency in outpatient settings. All of these factors increase the potential for healthcare associated infection.

In ambulatory healthcare settings, individuals are often clustered in common waiting areas and move independently through office and clinic settings (e.g., from examination rooms to diagnostic and therapeutic areas). People may present with undiagnosed communicable diseases to the ambulatory care office or clinic, increasing the risk of exposure to droplet or airborne diseases in these settings.[85]

Specific syndromes involving diagnostic uncertainty (e.g., diarrhea, febrile respiratory illness, and febrile rash) are routinely encountered in ambulatory settings. ***Facilities should develop and implement strategies for early detection and management of potentially infectious clientss on arrival to the facility.*** **C11**

To the extent possible, this includes prompt placement of such clients into a single room.[85, 86] Consider the following special arrangements for clients who may be contagious:

- Screen clients at the time the office visit is scheduled

- Make efforts to see these clients at the end of the day or when the waiting area is the least busy
- Have clients wear a surgical mask upon arrival if coughing and febrile
- Triaging clients out of common waiting areas and into a private examination room quickly
- Close the door of the examining room, and limit access to the client by visitors and staff members who are not immune to the suspected disease

Clean all surfaces in the facility on a regular basis. High touch surfaces should be cleaned daily. An example of a routine cleaning schedule is provided in Appendix G

Many outpatient settings perform some level of instrument reprocessing. Follow the *BC Best Practices for Cleaning, Disinfection and Sterilization in Health Authorities*.[40] Ensure that staff assigned to this task have been adequately trained.

12.0 Summary of Recommendations

Point of Care Risk Assessment questions should include. C-11 (page 12)

The presence of a microorganism such as MRSA or VRE should not exclude the client from home or community care as long as they meet the criteria for home nursing services. C11 (page 12)

When performing hand hygiene in a client's home, the provider should use their own hand hygiene supplies provided by the agency rather than use the client's soap and towels. Category C11 (page 13)

Artificial nails and nail extenders are not acceptable in healthcare settings. B11 (page 13)

Clients who are able to participate in self-care should be taught, encouraged, and reminded of the importance of hand hygiene before eating or preparing food, after using the toilet or other [4] personal hygiene activities, before leaving their homes for common/public areas and when returning home from public places. C11 (page 13)

Clients who are unable to participate in hand hygiene due to physical or mental impairments should be assisted with hand hygiene prior to meals, after toilet use, etc. C11 (Page 13)

Caregivers with open lesions on their hands should apply an occlusive (air and water tight) bandage before starting work; if the lesions are extensive, the caregiver should consult with his or her physician or occupational health service about appropriate coverage of the affected area, or exclusion from the work setting. C11 (page 13)

Reuse of single-use gloves by washing with soap and water or any other disinfectant is NOT advised. C1 (page 16)

Gowns and/or plastic aprons should be worn when a staff member's clothing is likely to become soiled with blood or body fluids such as feces, urine, or any other secretions, or if significant contamination of the environment is occurring. C11 (page16)

Healthcare providers should wear a mask that covers the mouth and nose, and goggles or a face shield during client-care activities that are likely to cause splashes or sprays of blood, body fluids, secretions, or excretions onto the face. A11 (page 17)

Healthcare workers should only use the type of respirator for which they were successfully fit tested. WorkSafeBC reg (page 17)

Safety-engineered sharp devices should be used wherever possible, and the safety of clients and healthcare workers should be considered when selecting safety-engineered sharp devices WorkSafeBC reg. (page 18)

Needles should not be recapped; used needles and other used single-use sharp items should be disposed of immediately into designated puncture-resistant containers that are easily accessible at the point of care. C11 (page 18)

Clients should have their own soaps, lotions or creams, toothbrush, toothpaste, denture box, comb, hairbrush, nail file, nail clippers, shaver (electric or disposable), and bath towel. C1 (page 18)

Reusable semi-critical or critical instruments should be reprocessed according to BC Best Practices for Cleaning, Disinfection and Sterilization. Personnel need to be adequately trained and assessed for competency. Ministry of Health Policy Communiqué. (page 22)

The healthcare provider should provide education for the client and family as appropriate for the presenting condition. **C11** (page 24)

Individuals with symptoms such as fever, cough, diarrhea, vomiting, or with wounds in which the drainage cannot be covered and contained, should not participate in group events until symptoms have resolved. C11 (page 24)

Visitors with respiratory tract infection or gastrointestinal symptoms should be asked to postpone their visits until they have recovered. C11 (page 24)

Those who have acute respiratory symptoms and must (unavoidably) visit someone should wear a mask or respirator, as appropriate. A11 (page 24)

In individual homes, it is recommended that the family pet is not in the room when active care is given, especially during clean or aseptic procedures such as initiating IVs, dressing changes, or inserting Foley catheters. C11 (page 25)

In all cases when additional precautions are necessary, clients and family members should receive basic education about how to prevent transmission of the illness and proper use of any personal protective equipment needed. **C11** (page 28)

Catheterization should only be undertaken when all other methods of urinary system management have been deemed inappropriate or have failed. C1 (page 30)

If indwelling catheterization is required, the catheter should be inserted using aseptic technique and be removed as soon as possible to reduce the risk of complications. **C1** (page 30)

Whenever clinically appropriate and practical for the client, intermittent catheterization should be used in preference to an indwelling catheter. C11 (page 30)

Any healthcare worker who requires the use of a N95 respirator should be fit tested and taught the proper application and removal of the respirator. WorkSafeBC Regulation. (page 32)

At start of employment, the employee should have a record of immunization on file in their confidential employee health record, and maintain their immunizations as per the *BCCDC Immunization Manual B*. C11 (page 32)

Employers should encourage the reporting of all exposures to blood and body fluids, including needle-stick injuries, and have developed a post-exposure protocol that is consistent with the *Accidental Exposure Guidelines by the BC Centre for Excellence in HIV/AIDS*. C11 (page 32)

If percutaneous, permucosal, or non-intact skin exposure has occurred, the exposed person should immediately have a risk assessment performed by a qualified health professional, preferably within two hours of exposure. C1 (page 33)

Facilities should develop and implement strategies for early detection and management of potentially infectious clients on arrival to the facility. C11 (page 33)

Appendix A: Criteria for rating evidence on which recommendations are based

Strength of Evidence	Grade	Type of Evidence
Strong	A1	Direct evidence from meta-analysis or multiple strong design studies of high quality, with consistency of results
	A11	Direct evidence from multiple strong design studies of medium quality with consistency of results, **or** At least one strong design study with support from multiple, moderate design studies of high quality, with consistency of results, **or** At least one strong design study of medium quality with support from extrapolation from multiple strong design studies of high quality, with consistency of results
Moderate	B1	Direct evidence from multiple moderate design studies of high quality, with consistency of results, **or** Extrapolation from multiple strong design studies of high quality, with consistency of results
	B11	Direct evidence from any combination of strong or moderate design studies of high/medium quality, with a clear trend but some inconsistency of results, **or** Extrapolation from multiple strong design studies of medium quality or moderate design studies of high/medium quality, with consistency of results, **or** One strong design study with support from multiple weak design studies of high/medium quality, with consistency of results
Weak	C1	Direct evidence from multiple weak design studies of high/medium quality, with consistency of results, **or** Extrapolation from any combination of strong/moderate design
	C11	Studies of low quality, regardless of study design, **or** Contradictory results, regardless of study design, **or** Case series/case reports, **or** Expert opinion

Appendix B: Disinfectant uses, advantages and disadvantages

[87-90]

Agent and Concentration	Uses	Active Against	Properties/Cautions
Chlorine: Household bleach (5.25%) 1:100 (500 ppm solution) 10 ml bleach to 990 ml water	Used for disinfecting general household surfaces. (make fresh daily) Allow surface to air dry naturally	Bacteria (*Salmonella, E. coli*), Enveloped viruses (Hepatitis B and C)	All organic matter must be cleaned from surface first Make fresh daily as shelf life shortens when diluted Store in closed containers which do not allow light to pass through away from light and heat Irritant to skin and mucous membranes. Area should be well ventilated to prevent respiratory tract irritation Corrosive to metals Discolors carpets and clothing **NEVER** mix with any other cleaning solution
1:50 (1,000ppm solution) 20 ml bleach to 980 ml water	Used for disinfecting surfaces contaminated with bodily fluids and waste like vomit, diarrhea, mucus, or feces. Allow surface to air dry naturally	Bacteria Enveloped viruses Non-enveloped viruses (Norovirus, Hepatitis A)	
1:10 (5,000ppm solution) 100 ml bleach to 900 ml water	Used for disinfecting surfaces contaminated by blood Allow surface to air dry naturally	Bacterial spores (e.g. *C difficile*)	
Accelerated hydrogen Peroxide 0.5%	Used for disinfecting general surfaces and surfaces contaminated with body fluids and waste	Bacteria Viruses (enveloped and non-enveloped) Fungi	Active in the presence of organic matter Good cleaning ability due to detergent properties Non-toxic
Alcohol (70-90%)	Used for disinfecting external surfaces of some small equipment (e.g. stethoscopes)	Bacteria Viruses (enveloped and non-enveloped) Fungi	Ineffective in presence of organic material May harden plastic or rubber Flammable
Quaternary Ammonium Compounds (QUATs)	Used for cleaning and low level disinfection of any hard surface	Bacteria Enveloped viruses Fungi	Non-corrosive, non-toxic, low irritant Good cleaning ability, usually has detergent properties May be used on food surfaces Diluted solutions may support the growth of microorganisms

Phenolics	Used for cleaning hard surfaces and equipment that do not touch mucous membranes	Vegetative Bacteria Viruses (enveloped and non-enveloped) Fungi	**Do not use in nurseries or on equipment contacting infants (e.g., baby scales)** **Do not use on food preparation surfaces** Diluted solutions may support the growth of microorganisms

VERY IMPORTANT:

- Ensure product has a DIN number.
- Check manufacturers information to ensure that product is effective against organisms in question.
- Follow product instructions for dilution and contact time.
- Unless otherwise stated on the product, use a detergent to clean surface of all visible debris prior to application of disinfectant.
- *Alcohol may be used on some small equipment such as stethoscopes, but not as a general surface disinfectant.

Appendix C: Reprocessing Requirements for Specific Equipment

Table of Common Items Found in Home and Community Care

HUW- Health Unit Worker **LLD**-Low Level Disinfection **HLD**-High Level Disinfection

Equipment	Class	Process Required	Frequency Of Action
Blood pressure equipment	Non-critical	Low Level Disinfection (LLD)	Cuff: between clients Monitor: weekly and when visibly soiled
Camera and Pixelare Equipment	Non-critical	As per manufacturer's directions	Weekly and when visibly soiled
Chair cushions (Used for client positioning)	Non-critical	Laundered-full cycle	Between clients
Client assist equipment e.g. bath boards, transfer boards, bath chairs, wheelchairs	Non-critical	Low level disinfection	Between clients When visibly soiled
Clinic room carts, lamps, work surfaces, etc.	Non-critical	Low level disinfection	At end of clinic or when visibly soiled
Commode Chairs	Non-critical	Low level disinfection	Between clients Daily and when visibly soiled for same client
Minor surgery set	Critical	Sterilization	Between clients
Diaphragm fitting rings	Semi-critical	Single use or HLD Sterilization (preferred)	Between clients
Electrotherapy modalities (e.g. TENS, high-volt, interferential)	Non-critical	Carbon-electrodes-reusable-cleaned with warm water and soap. Disposable – discard between clients Exterior: LLD	Between clients
Exam tables/Stretchers	Non-critical	Low level disinfection: A new barrier (paper, sheet) should be used between clients	Between clients if no barrier is used If barrier used change barrier between clients and disinfect when visibly soiled

Equipment	Class	Process Required	Frequency Of Action
Flashlight	Non-critical	Low level disinfection	Between uses involving mucous membrane contact
Glucometer	Non-critical	Low-level disinfection as per manufacturer's directions.	Between clients and when visibly soiled
Intravenous Poles	Non-critical	Low level disinfection	Between clients and when visibly soiled
Mats for parent-infant groups, physio	Non-critical	Low level disinfection	Between activities and when visibly soiled
Metal probes for wound care	Critical	Sterilization	Between clients
Mirrors used to assist clients to view procedures/wounds	Non-critical	Low level disinfection	Between clients
Otoscope, Ophthalmoscope	Non-critical	Ear and nasal specula single use only. Machine: as per manufacturer's directions.	Specula-single use only Machine: daily or when visibly soiled
Pressure mapping equipment	Non-critical	Low level disinfection as per manufacturer's directions	Between clients
Respiratory equipment-e.g. Spirometer machine with filter	Non-critical	As per manufacturer's direction	Between clients and when visibly soiled
Peak flow meters	Non-critical	Low level disinfection	Between clients and when visibly soiled
Disposable mouth piece for peak flow meters	Semi-critical	Single Client Use	Discard after use
Valved spacer (e.g. aero-chamber, opti-chamber)	Semi-critical	Single Client Use	Discard after use
Mask/nebulizer/nasal prongs, Incentive spirometers	Semi-critical	Single Client Use	Discard after use
Oximeter probe	Non-critical	Low-level disinfection as per manufacturer's directions.	Between clients

Equipment	Class	Process Required	Frequency Of Action
Mask/nebulizer/nasal prongs,	Semi-critical	Single client use disposable	Discard after use
Incentive spirometers	Non-critical	Single client use. Low-level disinfection as per manufacturer's directions.	Weekly
Reflex hammers	Non-critical	Low level disinfection	Between clients
Roho cushions	Non-critical	Low-level disinfection. clean and disinfect thoroughly while inflated. Deflate to clean and disinfect base.	Between clients. Not suitable for re-use unless it can be cleaned thoroughly. Gel cushions cannot be cleaned.
Scales-infant/adult	Non-critical	Low-level disinfection. Infant scale: A new barrier (paper, sheet) should be used between clients Adult Scale: may use barrier as needed	Between clients if no barrier is used. If barrier used change barrier between clients. Thorough cleaning once a week and when visibly soiled
Scissors for non-sterile procedures	Non-critical	Low level disinfection	Between clients
Scissors/forceps for sterile procedures	Critical	Single use (supplied sterile) Sterilization if re-usable	Single use Between clients
Speculum-non disposable	Semi-Critical	Sterilization Disposable recommended	Between clients
Speculum light	Non-critical	Low level disinfection	Between clients
Staple remover-non disposable	Critical	Sterilization	Between clients

Equipment	Class	Process Required	Frequency Of Action
Stethoscope	Non-critical	Low level disinfection	After each use Once a week or when visibly soiled
Swallowing assessment kits	Non-critical	Use dishwasher with sanitizing cycle or wash in soap and hot water and sanitize in a 0.05% bleach solution.	Between clients
Thermometers-tympanic	Non-critical	Low-level disinfection. Wipe entire thermometer with cleaner/disinfectant and allow to air dry	Between clients
Tourniquet	Non-critical	Single use recommended or low-level disinfection.	Between clients
Toys	Non-critical	Low level disinfection	Once a week or when visibly soiled
Transfer belts	Non-critical	Laundered	Between clients
Ultrasound /Doppler on intact skin	Non-critical	Low-level disinfection as per manufacturer's guidelines for agents.	Between clients

Adapted from: Vancouver Coastal Health. Cleaning, Disinfection and Sterilization of Reusable Medical Equipment and other Equipment used for Infant Child Youth; Adult Older Adult; and Primary Care Programs. Vancouver Community Client Care Guidelines; 2007

For items that require reprocessing and are not on this list, please refer to the *Best Practice Guidelines for the Cleaning, Disinfection and Sterilization of Medical Devices in Health Authorities*, March 2011, BC Ministry of Health which can be found at:
http://www.health.gov.bc.ca/library/publications/year/2011/Best-practice-guidelines-cleaning.pdf

Appendix D: Care of Computer Equipment in the Home and Community Setting

Use a "clean hands" approach. Wash hands with soap or use an alcohol based hand rub:

- prior to touching the device (refers to any computer equipment e.g., computer, laptop, tablet)
- after touching the device and before providing care to the client

Keep the device away from spills, splashes, sprays and other sources of water.

Place the device on a clean surface or use a barrier, e.g. cloth, plastic, paper.

Store the device in a safe, dry place away from liquids that might leak or spill.

Avoid:

- going back and forth between the device and the client
- taking the device into areas where there is a high risk of contamination

Cleaning recommendations:

Always turn the device off before cleaning

Follow manufacturer's instructions for cleaning.

Key points:

LCD/Regular Monitor

- use computer-monitor specific cleaner only. Do not use other products, e.g. glass cleaner, hand wipes, alcohol, acetone, or ammonia-based products etc., as these can damage the screen or film.
- spray cleaner onto non-abrasive cloth (e.g. soft, cotton, lint-free, eye-glass cloth). Never apply the cleaner directly to the computer. Ensure cloth is damp only.
- wipe screen with cloth in one direction from the top of screen to the bottom.
- use a manufacturer approved disinfectant to wipe computer, mouse, and keyboard.
- tablets should be inverted while wiping keypads to avoid getting liquid into device.

If the device becomes grossly soiled with blood or a body substance, turn the device off, put in a plastic bag and contact Information Systems or manufacturer for advice on cleaning.

Appendix E: Bedbug Protocols for Care Providers Who Make Home Visits

(Vancouver Coastal Bed Bug Policy, 2008)

A. Recommendations to reduce the risk of infestation while making home care visits:

Limit supplies brought into client's home to essential items needed for one visit only.

Carry all items into a client's home, in a Ziploc bag that is sealed, and opened only to retrieve essential care items, such as dressing supplies, B/P cuff, stethoscope. Put backpack or nursing bag in a Ziploc bag.

Alternatively, use a light-coloured bag or pack to carry essential supplies only. Ideally, if you can avoid putting the bag down, you will be less likely to get a hitchhiking bedbug. If you must set the bag down, put it on a white surface such as a plastic bag or fabric drape. The drape/bag will then be considered infested and needs to be stored in a Ziploc bag between uses.

Place all essential materials needed to provide care, (such as dressing trays), onto a white plastic bag, or surface:

If returning bags of supplies or used equipment to the unit, they must be sealed in a Ziploc bag, e.g., BP cuff. Alternatively, they could be stored in such a way that bedbugs will not escape the storage container. You could put equipment into a Rubbermaid-style container and put double-sided carpet tape around the edge of the container. Any hitchhiking bedbugs would be stopped as they try to cross the tape.

Avoid sitting on upholstered chairs or client's bed while providing care or doing interviews. Stand or find a hard surface on which to sit.

Use personal protective equipment as outlined in routine precautions when providing direct care. Wear a white plastic apron or gown to provide care.

Use a plastic Tupperware container with a lid, in the trunk of your car, for transport of supplies, charts, etc. from the client's home back to the office.

If you suspect you've been infested during a visit, shower and change into clean clothes, (save old clothes in Ziploc bag, for placing in a hot drier for 5–10 min), either before you leave work, or ASAP upon arrival at home.

If you need to leave an evening chart, or care plan in the client's home, place it in a sealed Ziploc bag.

B. For all care providers, including home support, assist the client in dealing with bedbug infestation.

Once a room infestation has been identified and treatment ordered, it is essential that the directions provided by the pest control company be followed. If there are no instructions provided, ask for them.

Encourage/assist the client to de-clutter as much as possible. This will improve effectiveness of decontamination. If client is unwilling or unable to assist with this, contact the case manager and your supervisor for further direction.

Pack and enclose all infested items to be discarded in plastic before disposal. This will stop the bedbugs from falling off on the way to the garbage, and prevent spreading the infestation to the rest of the dwelling. Mark the bag to deter others from taking home the infested items. Place infested items directly into a garbage bin.

If there is a vacuum, vacuum the room thoroughly, especially along carpet edges. To prevent spread from one room to another, use a vacuum designated for bedbug-infested rooms. The bag must be changed and the vacuum cleaned after use. Dispose of used bags in a sealed, marked plastic bag that is disposed into a garbage bin.

Move furniture away from the walls. Dismantle the bed. If mattress is to be disposed of, ensure that it is wrapped in a heavy plastic, sealed bag before it is taken out of the room. Remove pictures from walls, and remove electrical outlet covers.

Discard the plastic bag used to transport infested clothes and bed linens to laundry, or use dissolvable laundry bags. Sort laundry on a clean surface.

All bed linen and clothing must be washed in hot water, detergent, and placed in a hot dryer for at least 5 minutes, or until dry. Alternatively, if the only purpose of doing laundry is to rid the items of bedbugs, place dry clothes and linens in a hot dryer for a minimum of 5–10 minutes. Keep cleaned linens and clothing in pest proof bags until the premises is treated.

When providing personal care to a client in bed:

1. Wear a disposable gown to protect clothing
2. Set supplies required for care, on a white surface
3. Use routine infection control practices

Adapted from Vancouver Coastal health Authority Bedbug Policy 2008

Appendix F: List of Mandatory Reportable Diseases

July 2009

Schedule A: Reportable by all sources, including Laboratories

Acquired Immune Deficiency Syndrome
Anthrax
Botulism
Brucellosis
Chancroid
Cholera
Congenital Infections:
- Toxoplasmosis
- Rubella
- Cytomegalovirus
- Herpes Simplex
- Varicella-Zoster
- Hepatitis B Virus
- Listeriosis and any other congenital infection

Creutzfeldt-Jacob Disease
Cryptococcal infection
Cryptosporidiosis
Cyclospora infection
Diffuse Lamellar Keratitis
Diphtheria:
- Cases
- Carriers

Encephalitis:
- Post-infectious
- Subacute sclerosing panencephalitis
- Vaccine-related
- Viral

Foodborne illness:
- All causes

Gastroenteritis epidemic:
- Bacterial
- Parasitic
- Viral

Genital Chlamydia Infection
Giardiasis
Gonorrhea – all sites
Group A Streptococcal Disease, Invasive
H5 and H7 strains of the Influenza virus
Haemophilus influenzae Disease,
- All Invasive, by Type

Hantavirus Pulmonary Syndrome
Hemolytic Uremic Syndrome (HUS)
Hemorrhagic Viral Fevers
Hepatitis Viral:
- Hepatitis A
- Hepatitis B
- Hepatitis C
- Hepatitis E
- Other Viral Hepatitis

Human Immunodeficiency Virus Infection
Leprosy
Lyme Disease
Measles
Meningitis: All causes
- (i) Bacterial:
- Haemophilus
- Pneumococcal
- Other
- (ii) Viral

Meningococcal Disease, All Invasive including
- "Primary Meningococcal Pneumonia" and
- "Primary Meningococcal Conjunctivitis"

Mumps
Neonatal Group B Streptococcal Infection
Paralytic Shellfish Poisoning (PSP)
Pertussis (Whooping Cough)
Plague
Poliomyelitis
Rabies
Reye Syndrome
Rubella
Severe Acute Respiratory Syndrome (SARS)
Smallpox
Streptococcus pneumoniae Infection, Invasive
Syphilis
Tetanus
Transfusion Transmitted Infection
Tuberculosis
Tularemia
Typhoid Fever and Paratyphoid Fever
Waterborne Illness
- All causes

West Nile Virus Infection
Yellow Fever

Schedule B: Reportable by Laboratories only

All specific bacterial and viral stool pathogens:
- (i) Bacterial:
- Campylobacter
- Salmonella
- Shigella
- Yersinia
- (ii) Viral

Amoebiasis
Borrelia burgdorferi infection
Cerebrospinal Fluid Micro-organisms
Chlamydial Diseases, including Psittacosis
Creutzfeldt-Jacob Disease
Cryptococcal Infection
Herpes Genitalis
Human Immunodeficiency Virus Infection
Influenza virus, including the H5 and H7 strains
Legionellosis
Leptospirosis
Listeriosis
Malaria
Q Fever
Rickettsial Diseases
Severe Acute Respiratory Syndrome (SARS)
Smallpox
Tularemia
West Nile Virus Infection

As per Health Act Communicable Disease Regulation B.C. Reg. 4/83 O.C. 6/83 includes amendments up to B.C. Reg. 70/2008, April 10, 2008 http://www.qp.gov.bc.ca/statreg/reg/H/Health/4_83.htm

Appendix G: Janitorial Schedule for Ambulatory Care Clinics (example)

RECEPTION AREAS, GENERAL OFFICE AREAS, MEETING ROOMS AND HALLWAYS
Daily
• Spot clean desks, walls and doors with neutral cleaner
• Dust mop, sweep and/or vacuum and damp mop all hard-surface floor areas with neutral cleaner
• HEPA-filter vacuum all carpeted areas and walk-off mats
• Empty waste receptacles and dispose of items marked for garbage removal; liners should be changed at least weekly, or more often if odorous; transport waste to designated location; transport recyclables to designated location
• Clean and disinfect reception and waiting area countertops and chairs using a low-level disinfectant solution
• Spot clean windows, mirrors and other reflective surfaces
• Damp wipe light switches, telephones, doorknobs and handles with a low-level disinfectant solution
Weekly
• Damp wipe all fixtures and office furniture using a low-level disinfectant, including: desks, countertops and computers (not screen or keyboard)
Monthly
• Clean desk policy: on the last cleaning day of each month tops of all desks, credenzas, file cabinets, etc., to be damp wiped using a low-level disinfectant solution. Staff responsible for clearing horizontal surfaces.
• HEPA-filter vacuum fabric furniture, damp wipe plastic and leather furniture with low-level disinfectant.
• HEPA-filter vacuum around all furniture and baseboards
• Dry dust all blinds and damp wipe window ledges
• Dry dust all light fixtures, ceiling vents, and areas above 2 metres (6 feet) such as corners and horizontal surfaces
MEDICAL EXAMINATION, LABORATORY AND TREATMENT ROOMS
Daily for every day open (i.e. if open Sat/Sun, done 7 consecutive days)
• Damp wipe all counters, sinks, dispensers, cabinet doors and fixtures using a low-level disinfectant solution
• Damp wipe all examination beds and tables using a low-level disinfectant solution, including top, undersides and supports), recliners and bedside tables

• Empty waste receptacles and wash using a low-level disinfectant solution; liners should be changed; transport waste to designated location; transport recyclables to designated location
• Damp wipe all equipment arms and bases using a low-level disinfectant solution, including exam room computer sides/tops, but not screen or keyboard
• Damp mop all floors using a low-level disinfectant solution
• HEPA-filter vacuum all carpeted areas
Weekly
• Wipe down all walls using a neutral cleaner
Monthly
• Dry dust all blinds and damp wipe window ledges
• Dry dust all light fixtures, ceiling vents, and areas above 2 metres (6 feet) such as corners and horizontal surfaces
BATHROOMS
Daily for every day open
• Restock all dispensers (paper product, soap, sanitizer, etc.)
• Damp wipe all dispensers and surrounding wall areas using a low-level disinfectant solution
• Polish mirrors, glass and other reflective surfaces
• Disinfect all toilets, toilet seats and handles inside and out, including urinals
• Disinfect sinks, faucets and door locks/handles, including showers, tubs, and their plumbing and fixtures, if applicable
• Remove liners and empty waste receptacles, including sanitary containers, and wash using a low-level disinfectant solution as required
• Spot clean walls as required
• Dust mop, sweep and/or vacuum and damp mop all floor areas using a low-level disinfectant solution
Monthly
• Damp wipe walls up to 2 metres (6 feet) using a neutral cleaner
• Dry dust all blinds and damp wipe window ledges
• Dry dust all light fixtures, ceiling vents, and areas above 2 metres (6 feet) such as corners and horizontal surfaces
COFFEE AREAS AND LUNCH ROOMS
Daily for every day that staff are working
• Damp wipe counter tops, chairs, and table tops as required with neutral cleaner
• Damp wipe exterior of all appliances and cupboards with neutral cleaner
• Empty waste receptacles and dispose of items marked for garbage removal
• Clean sinks, faucets and handles with a low-level disinfectant

• Dust mop, sweep and/or vacuum and damp mop hard-surfaces floor areas with neutral cleaner
Weekly
• Clean drinking fountains or water dispensers with non-phenolic disinfectant
Monthly
• Detail edge vacuum around all furniture and baseboards
• Damp dust all blinds and damp wipe window ledges
• Damp dust all light fixtures, ceiling vents, and areas above 2 metres (6 feet) such as corners and horizontal surfaces
STAIRWELLS
• Clean handrails, ledges, etc.; clean stairs, risers, landings, etc.; professionally scrub, water extract
ANNUALLY FOR ALL AREAS
• Clean walls and doors to full height, windows, ducts, grills, vents and radiators with appropriate cleaning solution, including any other vertical surfaces and high ceilings
ADDITIONAL SPECIFICATIONS
• Surfaces should be cleaned using a low-level disinfectant. Accelerated hydrogen peroxide and quaternary ammonium compounds are appropriate for use in daily cleaning and disinfection of surfaces. Phenolics are also suitable unless this surface could come in contact with an infant or small child (e.g. toys, weight scale, change table). Disinfectant strength should correspond to instructions on the bottle.
• Blood and body fluid spills should be cleaned using a detergent to remove organic material. The area should then be disinfected with a disinfectant solution (i.e. one part of household bleach (5.25%) added to nine parts of water applied for at least 60 seconds or any other hospital approved disinfectant). Gloves should be worn during cleanup of any blood or body fluid.
• HEPA-filter vacuum cleaners should be used for all vacuuming.
• Double-bucket (one bucket is disinfectant and the other is clean water) should be used for all mopping.
• Cleaning solutions, cloths, mops and tools should be changed frequently. Do NOT double dip cleaning cloth into disinfectant.
• **Frequent-touch areas (e.g. light switches and doorknobs) should receive special attention (at least daily if not more often).**

Adapted from: Vancouver Island Health Authority. Infection Prevention and Control Manual; 2008

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