Guidance Document

Infection Prevention and Control in Day Nurseries
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**Purpose**

The purpose of this document is to provide supporting information for Infection Prevention and Control (IPAC) programs in Day Nurseries (DN). A review of the literature was completed to identify best practices for this setting. This document addresses major components of an IPAC program and is not intended to address every possible circumstance.

The document has been provided for convenience and information purposes only. It is not intended to provide legal advice and should not be relied upon as such. Please consult with a lawyer if legal advice.

**Background**

The Ontario Public Health Standards, Infectious Diseases Prevention and Control Standards (2009) includes requirements to inspect settings associated with risk of infectious diseases of public health importance and to receive reports of, and respond to, complaints regarding infection prevention and control practices in settings for which no regulatory bodies exist. The Infection Prevention and Control in Licensed Day Nurseries Protocol also requires annual day nursery inspections to assess compliance with statutory requirements, recommend relevant infection prevention and control measures and provide an annual in-service for day nursery staff. The legislative authority is outlined in the Health Protection and Promotion Act (HPPA), R.S.O. 1990, c.H.7 and the Day Nursery Act R.S.O. 1990. Day nurseries are defined as “institutions” under Section 21(1d) of Part IV: Communicable Diseases of the HPPA.

Certain features of the day nursery environment and lack of staff education may mitigate the risk of transmission of childhood infections. Areas of concern include staff training in sanitation and hygiene for equipment and surfaces, food preparation areas, diapering locations and sink and toilet availability. Several studies have shown the impact of institutional infection control measures in reducing the rate of diarrhoeal, respiratory and other infectious and communicable illnesses in day nursery settings (Ejemot et al. 2008; Kotch et al. 2007; Ponka et al. 2004).

**Burden of Illness**

The association between day nursery attendance and increased risk of common infectious diseases has been well documented (Lu et al. 2004; Johansen et al. 1988). Specifically, day nursery attendance significantly increases the risk of diarrhoeal illness and upper respiratory tract infections among preschool children. In the majority of cases, these are benign and self-limiting conditions, but there is a risk for outbreaks of more serious infections such as pertussis, hepatitis A, *E. coli* O157:H7 and invasive group A Streptococcus. Younger children (particularly those less than 18 months) have shown to be at higher risk for contracting both diarrhoeal and upper respiratory infections (Lu et al. 2004; Johansen et al. 1988). This may be due to an
immature immune system, a lack of toilet training which puts them at greater risk of transmission of intestinal disease, and hand-to-mouth behaviour (particularly with shared toys) which leads to greater transmission of disease pathogens (Johansen et al. 1988). In addition, there are associated economic and health care costs related to excess disease from day nursery attendance. These include physician and emergency department visits and hospitalizations, as well as opportunity costs such as lost work days by parents and caregivers (Bell et al. 1989; Carabin et al. 2000).
SECTION 1: DAY NURSERY INSPECTIONS

Administrative Health Policies and Procedures

Policies are key components of IPAC in the facility. The DN must have policies for: (i) management/reporting of communicable diseases and exclusion of ill children and staff; (ii) infection prevention and control (IPAC) measures and (iii) outbreak management. Policies and Procedure must speak to routine practices, which include hand hygiene, diapering and toileting, cleaning and disinfection and any other IPAC policies necessary in a particular centre. Policies and procedures should document clear expectations to staff related to IPAC measures and management of communicable diseases and be accessible at all times by all staff. Day nursery staff and parents should understand what is expected of them before an incident occurs. Policies must be reviewed and updated annually to incorporate best practices and encourage compliance.

Information sources to be consulted during policy development should include:
- surveillance data;
- scientific literature;
- professional practice guidelines and standards; and
- legal requirements and regulatory standards (PIDAC 2008)

Policies and procedures must be relevant to the setting and accessible to all staff. When establishing policies and procedures it should state how they will be implemented and who is responsible for implementing them.

Policies and procedures must:
- be practical to implement;
- be reviewed and audited regularly to maintain accuracy, validity and compliance;
- follow a standardized template;
- be linked to an educational program so that users understand and follow the policy;
- be written to serve as a resource for providers responsible for their implementation (PIDAC 2008)

(i) Management and Reporting of Communicable Diseases and exclusion of ill children and staff:
- Management of communicable diseases must have a plan in place that includes:
  - management of critical data and information (such as immunization records)
  - surveillance for signs and symptoms of infections, and
  - reference to exclusion policy

Exclusion of ill Children and Staff:
- Severe irritability, lethargy, runny nose, cough, difficulty breathing, vomiting, diarrhoea, change in skin colour, rash and/or fever
- When to exclude:
  - Illness that prevents child from participating in activities;
• Greater need for care that the staff can’t provide without compromising supervision ratios/requirements;
• Illness poses a serious health risk if it spreads to others, circumstances under which separation of the affected child or staff is necessary;

• Designate an area in the centre where the ill child can wait until a parent is able to pick them up

**Surveillance**

What is Surveillance? Keeping track of illnesses amongst the children is a provincial requirement. The Day Nurseries Act states the following must be done daily for each child:

• Observe the child for illness upon arrival,
• Note symptoms of illness in the child’s records,
• Keep attendance records regarding arrival, departure and absences,
• Keep track attendance and dates regarding outings, special events, etc.

Baseline incidence of illness allows the day nursery staff to notice when there is an increase or change of illness in the day nursery. An attendance sheet or illness tracking form can be used to record the history of illness amongst the children and staff allowing comparisons to be made from day to day and season to season. It provides a basis, to take action to control or reduce the spread of illnesses (e.g. increase environmental cleaning). This is called the baseline of the number or type of illnesses. The key to identifying an outbreak is the maintenance of good surveillance information.

• Human bite follow-up procedures: refer to Toronto Public Health factsheet; the policy must provide staff with clear instructions on how to report these incidents and to whom
• Reporting requirements for reportable diseases: refer to list on the Reportable Diseases fact sheet, it contains information on who to contact (TPH 311 or Health Connections 416 338 7600)

(ii) **Outbreak Management:**

Communication plan that includes when to:

• Isolate ill children until they can be taken home;
• Send ill staff home;
• Notify parents or emergency contacts to pick-up ill children as soon as possible;
• Prepare a line list by recording name(s), date(s) of birth, gender(s), individual symptoms, the date and time children and staff became ill and their room number or type (e.g., infant room or toddler room).
• Refer to Section 2 and "Your Outbreak Plan" Information Sheet.
• Contact TPH to report the outbreak by calling the Communicable Diseases Surveillance Unit (CDSU) at 416-392-7411.
• Obtain permission from parents to submit specimen samples to the Public Health Laboratory.
• Contact ill staff and the parents of ill children who were at home during the time before the outbreak was declared, to inform them of the outbreak and to determine if they are experiencing the same signs and symptoms. If so, add their information to the line list.

**Routine Practices**

Routine Practices are based on the premise that everyone is potentially infectious, even when asymptomatic, and that the same safe standards of practice should be used routinely with everyone to prevent exposure to blood, body fluids, secretions, excretions, mucous membranes, non-intact skin or soiled items and to prevent the spread of microorganisms.

**Day Nursery operators and staff must assess the risk** of exposure to blood, body fluids and non-intact skin and identify the strategies that will decrease exposure risk and prevent the transmission of microorganisms. This risk assessment is part of the implementation of Routine Practices. Reducing or removing the risk should be incorporated into the culture of the facility. Refer to "Routine Practices" Information Sheet.

Routine Practices are healthcare based practices that, when applied consistently, will reduce or eliminate the risk of transmission of microorganisms. Although DN's are not considered healthcare settings, "child care workers are at risk of exposure to communicable diseases because of their contact with individuals or materials from individuals with infections, both diagnosed and undiagnosed." ([http://www.phac-aspc.gc.ca/publicat/cig-gci/p03-02-eng.php](http://www.phac-aspc.gc.ca/publicat/cig-gci/p03-02-eng.php))

Routine Practices are comprised of Best Practices recommendations based on the most up to date scientific literature available. For more details please refer to the PIDAC website ([http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/routine-practices-and-additional-precautions.html](http://www.oahpp.ca/resources/pidac-knowledge/best-practice-manuals/routine-practices-and-additional-precautions.html)).

**Components of the Inspection**

- Administrative Controls Policies and Procedures (discussed in previous section)
- Risk Assessment
- Respiratory Etiquette
- Hand Hygiene
- Gloves (*Barrier Equipment*)
- Environmental Controls (*Placement, Cleaning, Engineering Controls*)

**Risk Assessment**

When performing activities and providing care, staff should be assessing the risk of:

a. contamination of skin or clothing by microorganisms in the environment;
b. exposure to blood, body fluids, secretions, excretions, body tissues;
c. exposure to non-intact skin;
d. exposure to mucous membranes;
e. exposure to contaminated equipment or surfaces; and
f. recognition of symptoms of infection (e.g., syndromic surveillance).

**Respiratory Etiquette**

Staff should reinforce with children and visitors, the personal practices that help prevent the spread of microorganisms that cause respiratory infections. These personal practices include:

a. not coming to the DN when acutely ill with a respiratory infection;
b. avoidance measures that minimize contact with droplets when coughing or sneezing, such as:
   - turning the head away from others;
   - maintaining a two-metre separation from others;
   - covering the nose and mouth with tissue;
c. immediate disposal of tissues into waste after use; and
d. immediate hand hygiene after disposal of tissues or if tissue not used.

Refer to the TPH "Cover Your Cough" poster.

**Hand Hygiene**

Several studies have looked at the impact of institutional infection control measures on the rate of diarrhoeal, respiratory and other infectious and communicable illnesses in Day Nursery settings (Huskins 2000). A review by Ejemot et al. (2008) looked at studies which compared interventions to promote hand washing in institutions in high-income countries and in communities in low- or middle-income countries. These studies showed that, within high-income countries, interventions promoting hand washing resulted in a significant reduction in diarrhoeal episodes in children.

Hand hygiene is a general term referring to any action of hand cleaning and is part of a hand hygiene program. Hand hygiene relates to the removal of visible soil and removal or destruction of transient microorganisms from the hands while maintaining good skin integrity. Intact skin is the body’s first line of defence against bacteria; therefore careful attention to skin care is an essential part of the hand hygiene program. The presence of dermatitis, cracks, cuts or abrasions can trap bacteria and compromise hand hygiene. Dermatitis also increases shedding of skin squama (a scale or scale-like mass) and, therefore, shedding of bacteria. A common barrier to compliance with hand hygiene is the adverse effects of products on the skin.

Occupational hand dermatitis is mostly caused by hand washing and work where skin is occluded by wearing gloves. Alcohol-based hand rubs (ABHRs) have been shown to be less irritating to skin than soap and water despite perceptions to the contrary. If an individual feels a burning sensation following the application of ABHR, it is generally due to pre-irritated skin. Allergic contact dermatitis associated with ABHRs is uncommon. Staff education relating to the benefits of ABHR will help to alleviate anxiety and promote its use (PIDAC 2010).
Every person has microorganisms on their skin. These microorganisms fall into two groups – transient and resident bacteria. *Transient* (or contaminating) *bacteria* colonize the upper layers of the skin and are acquired during direct contact with children, staff, contaminated equipment or the environment. Transient bacteria may also be easily passed on to others or fomites in the environment and are a frequent cause of infections (WHO, 2009). *Resident bacteria* are found in deeper layers of skin and are more resistant to removal. These bacteria do not generally cause infections and can be beneficial to maintaining healthy skin. Effective hand hygiene kills or removes transient bacteria on the skin and maintains good hand health. There are two methods of killing/removing microorganisms on hands:

a. **Hand sanitizing with (ABHR) containing 70% to 90% alcohol is the preferred method when hands are not visibly soiled.** Using easily-accessible ABHR in most settings takes less time than traditional hand washing and has been shown to be more effective than washing with soap (even antimicrobial soap) and water when hands are not visibly soiled.

b. **Hand washing with soap and running water must be performed when hands are visibly soiled.** The effectiveness of alcohol is inhibited by the presence of organic material. The mechanical action of washing, rinsing and drying is the most important contributor to the removal of transient bacteria. If hands are visibly soiled and running water is not available, use a moistened towelette to remove the visible soil, followed by ABHR. Children can use ABHR as long as there is as there is parental consent.

DN must have written a written policy for Hand Hygiene. The policy should include:

* • indications for hand hygiene
* • how to perform hand hygiene
* • selection of products used for hand hygiene
* • management of product dispensing containers
* • hand care program
* • hygiene and hand hygiene compliance and feedback

**Indications for Hand Hygiene in Day Nurseries**

A **hand hygiene indication** points to the reason hand hygiene is necessary at a given moment. There may be several hand hygiene indications in a single care sequence or activity. Examples of hand hygiene indications are:

* • upon arrival to the Day Nursery
* • before initial contact with children or handling items in the room; this should be done upon entry to any room;
* • before putting on gloves when changing diapers or assisting with toileting;
* • before preparing, handling or serving food or giving medication;
* • after care involving contact with blood, body fluids, secretions and excretions of children or staff, even if gloves were worn;
* • immediately after removing gloves and before moving on to another activity;
• before and after handling pets; and
• whenever in doubt.

Hand Hygiene posters (Hand Washing and Hand Sanitizing) must be posted as a constant reminder to children and staff to clean their hands.

**Hand Care**
A hand care program for staff should be a key component of improving effective and safe hand hygiene practices to protect staff and visitors from infections. An effective hand care program includes the following:
• hand care assessment
• use of hand hygiene products and gloves
• staff education on the benefits of using ABHRs and appropriate hand hygiene technique
• providing staff with appropriate hand moisturizing skin care products (and encouraging regular frequent use) to minimize the occurrence of irritant contact dermatitis associated with
• providing an ABHR product that contains an emollient (moisturizer), which can significantly decrease "irritant contact dermatitis" under frequent-use conditions

**Selection of products used for hand hygiene**
Careful selection of products will influence hand hygiene practice (e.g., ABHR, soaps, lotions, and paper towels) and have a positive impact on hand hygiene compliance. The following should be taken into consideration:
• efficacy of the product (product works well)
• "user-friendly" (staff input)
• low irritancy potential
• ABHR’s that contain emollients
• interactions between ABHR’s and gloves
• antimicrobial soaps are harsher on hands than plain soaps and frequent use may result in skin breakdown

**Non-alcohol-based Waterless Antiseptic Agents**
Non-alcohol-based waterless antiseptic agents are not recommended for hand hygiene in health care settings and should not be used (PIDAC 2010). At the present time, there is no evidence to support the efficacy of non-alcoholic, waterless antiseptic agents in the health care environment. Non-alcoholic products have a quaternary ammonium compound (QAC) as the active ingredient, which has not been shown to be as effective against most microorganisms as ABHR's or soap and water. QACs are prone to contamination by some types of microorganisms. QACs are also associated with an increase in skin irritancy.

**Gloves**
Gloves must be worn when it is anticipated that the hands will be in contact with mucous membranes, broken skin, tissue, blood, body fluids, secretions, excretions, or contaminated
equipment and environmental surfaces. Indiscriminate or improper glove use has been linked to transmission of pathogens. Gloves are task-specific and single-use only. Re-use of gloves has been associated with transmission of methicillin-resistant *Staphylococcus aureus* (MRSA) and Gram-negative bacilli (Poutanen et al. 2005).

**Selection of Gloves**

It is important to assess and select the best glove for a given task. Selection of gloves should be based on a risk analysis which includes:

a. the type of setting (e.g., environmental cleaning, diaper change);
b. the task that is to be performed;
c. the likelihood of exposure to body substances;
d. the anticipated length of use; and
e. the amount of stress on the glove.

The barrier integrity of gloves varies on the basis of:

a. type and quality of glove material;
b. intensity of use;
c. length of time used;
d. manufacturer;
e. whether gloves were tested before or after use; and
f. method used to detect glove leaks.

**Gloves and Hand Hygiene**

Because gloves are not completely free of leaks and hands may become contaminated when removing gloves, hands must be cleaned before putting on gloves and after glove removal. Gloves must be removed immediately and discarded into a waste receptacle after the activity for which they were used.

To reduce hand irritation related to gloves:

a. wear gloves for as short a time as possible;
b. hands must be clean and dry before donning gloves; and
c. gloves must be intact and clean and dry inside

**Diapering and Toileting**

A separate hand wash basin must be provided in the diaper changing area. This basin must be designated as such, and used solely by staff and children for the purpose of washing hands after diapering and toileting. The changing area must always be separate from the food preparation area. The diaper changing area or any other area used for diapering must never be used for food service or storage. The use of gloves is recommended for diaper changes and when assisting children with toileting. Many healthy newborns and infants are colonized by the enteric pathogen *Clostridium difficile*. These children are not affected by the potent exotoxins released by this anaerobe, however these organism can affect older children and adults who are susceptible to severe diarrhea and colitis. The organism is acquired in infancy from environmental contamination in the
nursery or home environment. In addition, a World Health Organization study has shown the use of gloves did not fully protect health care workers' hands from contamination, and glove contamination was almost as high as un-gloved hand contamination following patient contact. In contrast, the use of gloves during procedures such as nappy/diaper change and respiratory care almost halved the average increase of bacteria CFU/min (colony forming unit/minute) on HCWs' hands.

**The Diaper Changing area must be equipped as follows:**

- Hand wash basins must be equipped with soap in a dispenser and running water. These sinks must be washed and disinfected at least daily (or as necessary) and must not be used for food preparation, rinsing soiled clothing or rinsing potty chairs.
- Diapering surfaces must be constructed of a smooth, non-porous, non-absorbent material which is easy to clean (e.g. Formica, hard plastic, stainless steel or a washable pad covered by smooth vinyl). These surfaces must be free of cracks.
- Diapering surfaces must be disinfected after each use (even if a paper liner is used).
- Diapering procedure must be posted in the diapering area (See TPH Information sheets "Diaper Routine and Toilet Routine").
- Staff are instructed in a manner that follows good IPAC principles.
- Garbage pails must have a leak proof plastic liner and should be foot activated.

**Expressed Breast Milk**

Breast milk is a body fluid and may potentially contain pathogens acquired both intrinsically (from the mother) and extrinsically (contaminated during collection and handling). Improper handling of breast milk has been shown to result in contamination with pathogens associated with infections such as *Staphylococcus aureus*, including MRSA, Group B streptococcus, *Klebsiella pneumoniae* and *Pseudomonas* species (PIDAC April 2012).

Safe handling, thawing, storage and administration are required in order to minimize the risk of infection to children and staff. Routine Practices apply when handling breast milk, as with other body fluids. Hands should be cleaned before handling expressed breast milk (EBM). Staff should wear gloves when handling EBM, if there is a risk of getting milk on the hands (PIDAC April 2012). Hands must be cleaned after contact with EBM. If another child consumes EBM intended for someone else, call TPH immediately.

**Handling EBM**

- Keep refrigerated until at a temperature of 4 degrees celsius or colder
- Ensure bottles and containers are labelled (date, name of infant/child and name of mother)
- Gloves must be worn if EBM is dispensed into a cup or from one container to another
- Children drinking EBM form a cup must be supervised
- Discard any left over EBM not consumed by the child
Environmental Cleaning and Disinfecting

Increased rates of childhood infections are influenced by DN staffing and the physical environment. These include insufficient staff training in IPAC principles (exacerbated by high staff turnover rates), as well as deficiencies in equipment, surfaces, food preparation areas, diapering locations, and sink and toilet availability. In fact, one study by Laborde et al. (1993) found that faucet handles were among the most contaminated sites in Day Nurseries.

Rotavirus for example, causes severe diarrhoeal disease in infants and young children. Rotavirus has been shown to live for extended periods of time on fomites. Widespread contamination of environmental surfaces with enteric viruses has been found in DN's, especially in rooms with diaper-aged children.

DN's must have a written policy for environmental cleaning and disinfecting. There must be a cleaning schedule that identifies daily, weekly and monthly cleaning and disinfecting and must ensure all areas are included. The policy must indicate:

- who is responsible for the cleaning and disinfecting,
- what products are to be used on various surfaces,
- how/when the product is to be used, staff must be able to provide a description of the products used, what the contact times are, how is it dispensed and whether it can be used during an outbreak (refer to TPH "Choosing and Using a Disinfectant" information sheet),
- procedures for cleaning and disinfection during an outbreak.
- cleaning and disinfection standards and frequency.

TPH recommends using a ready to use/pre-mixed disinfectant rather than mixing chemicals on site. Ready to use products come with a Drug Identification Number (DIN #), a material Safety Data Sheet, have a predetermined shelf-life, a recommended contact time and an efficacy statement. **Note**: Products containing phenols should not be used in DN's because they can cause Hyperbilirubinemia (jaundice) if not rinsed properly.

**Disinfectant Wipes**

Ideally, equipment should be disinfected using a cloth with applied disinfectant, allowing adequate contact time with the disinfectant. Disinfectant wipes may be used for items that cannot be soaked, but it is difficult to attain adequate disinfectant contact time using disinfectant wipes. Disinfectant wipes should be used by the primary care giver for point of care cleaning and disinfecting of patient equipment. They should not be used as a routine cleaning disinfectant tool.

When using disinfectant wipes:

- the active ingredient must be an appropriate hospital-grade disinfectant
- wipes must be kept wet and discarded if they become dry
- wipes must have an MSDS and be used according to the MSDS (e.g., wear gloves when handling, if recommended)
- disinfectant wipes are used for:
items in the centre that will not tolerate soaking
if using these wipes for disinfection of large pieces of equipment, multiple wipes are require

A process must be in place regarding cleaning that includes:
• choosing finishes, furnishings and equipment that are cleanable
• ensuring compatibility of the cleaning and disinfecting agents with the items and surfaces to be cleaned
• identifying when items can no longer be cleaned due to damage.
The ease of cleaning is an important consideration in the choice of materials used in your centre (PIDAC 2012).

Surfaces
• Tables and countertops used for food preparation and food service must be cleaned and disinfected before use and before and after eating.
• Floor cleaning must be performed daily.
• Carpets must be vacuumed as necessary, cleaned promptly if spill occurs and shampooed/steam cleaned every 3-6 months. If the carpet does not appear to be adequately cleaned, re-cleaning may be necessary or replacement should be considered.

Sleep equipment
• Must be labelled and assigned/designated to a single child.
• Must be cleaned and disinfected before being assigned to another child.
• Crib mattresses must be made of a cleanable material.
• Crib mattresses must be cleaned and sanitized when soiled or wet.
• Sleeping mats must be stored so contact with the sleeping surface of another mat does not occur.
• Bedding (sheets and blankets) must be assigned to each child and laundered when soiled or wet.

Other
• For cleaning blood or body fluids refer to TPH "Blood and Body Fluids" information sheet.
• Toothbrushes and pacifiers must be individually labelled and stored separately (not touching each other) and must not be shared among children.
• Label individual toothpaste tubes and store separately. If many children are using toothpaste from the same tube, the tooth paste must be dispensed onto paper towel and then applied to the brush.
• Carpeted floors have been shown to be significantly more heavily contaminated for prolonged periods with clinical strains of C. difficile than are non-carpeted floors and room carpeting should be considered a potential reservoir of this organism in outbreaks (PIDAC 2012).
• Although sheets and clothing have been shown to harbour microorganisms that readily proliferate in the moist, warm environment if handled appropriately transmission of infections is rare. Policies
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and procedures should address the collection, transport, handling, washing and drying of dirty items, including protection of staff and hand hygiene (PIDAC 2012). Laundry done on-site must be done in a space separate from the kitchen.

High-touch Surfaces
High-touch surfaces (generally horizontal surface) are those that have frequent contact with hands. Examples include door knobs, toys, cribs/cots, light switches and computer keyboards. High-touch surfaces require more frequent cleaning and disinfection than minimal contact surfaces. Cleaning and disinfecting is usually done at least daily and more frequently if the risk of environmental contamination is higher (e.g., toys infant room during outbreak).

Low-touch Surfaces
Low-touch surfaces are those that have minimal contact with hands. Examples include floors, walls and window sills. Low-touch surfaces require cleaning on a regular (but not necessarily daily) basis, when soiling or spills occur. Many low-touch surfaces may be cleaned on a monthly basis rather than a daily basis (or as necessary).

Toys
Toys and play based learning are an integral part of childcare. Toys, from an IPAC perspective, are an excellent vehicle for the spread of disease causing micro-organisms.

Hand Hygiene
• Before and after playing with toys, children should be encouraged or assisted to clean their hands with alcohol-based hand rub (ABHR) or soap and water.
• Playrooms should have access to both ABHR and a hand wash station.
• Play areas should have an ABHR station.
• Hand hygiene with ABHR must be supervised.

Toy Materials/Design
• Toys that are easily cleanable can be shared. Otherwise, they must be dedicated to a single child.
• Toys should be nonporous and able to withstand rigorous mechanical cleaning and repeated exposure to disinfectants.
• To facilitate cleaning smooth/non-textured toy surfaces are preferred
• Water-retaining bath toys should not be used

Toy Storage
• In the infant room, dirty toys should be removed from the area and placed in a dirty toys bin for cleaning and disinfecting
• Toy storage boxes/cupboards should be emptied and cleaned according to the toy cleaning schedule or when visibly soiled, bins should be monitored for pest activity and sensory materials.
Frequency and Responsibility for Toy Cleaning and Disinfection
There should be written procedures regarding the frequency and method for cleaning the toys.

- Toys that are mouthed or that are otherwise contaminated by body secretions must be cleaned with water and detergent and then disinfected before handling by another child.
- Frequently touched toys in infant (0-12mos) and toddler (13-35mos) rooms must be cleaned and disinfected daily (or as necessary).
- Toys in rooms for preschoolers or non-diapered (36-59mos) children must be cleaned and disinfected at least weekly (or as necessary).
- Toys in the school aged (5-12 yrs) room must be cleaned and disinfected monthly (or as necessary).
- The schedule must be in writing indicating how cleaning and disinfecting should take place, where, when and what is being used.
- Staff who clean and disinfect toys should receive training and be assigned to the task.
- Playhouses/climbers should have their high touch surfaces cleaned on a daily basis. A thorough cleaning of the entire playhouse/climber should be done according to a regular schedule based on frequency of use and when visibly soiled.
- Shared electronic games, video equipment and computers should be cleaned between users. Computer keyboards should be either the submrgible type, have a cover or be made of a material that can be cleaned and disinfected.

Procedure for Toy Cleaning and Disinfection

- Toys must be inspected for damage, cracked or broken parts, as these may compromise cleaning. Any toy that is found to be damaged, cracked or broken should be discarded.
- Toys must be cleaned according to the manufacturer’s instructions (e.g., in hot, soapy water) prior to disinfection.
- Ensure that the disinfectant being used is safe and suitable for the intended purpose and that the manufacturer’s directions for dilution and contact times are followed.
- Disinfection options include:
  - Use of a commercial dishwasher/cart washer (must reach 82° C)
  - Hospital-grade approved, low-level disinfectant (follow manufacturer’s recommendations regarding dilution and contact times)
  - 1/100 dilution of sodium hypochlorite (bleach) (Follow TPH information sheet "Bleach Solutions for Disinfecting")
  - Allow toys to air-dry prior to storing.

Pets

Children and adults in DN settings may have contact with the following animals, if these animals meet the criteria specified: dogs, cats, rabbits, birds, rodents, (e.g., mice, hamsters, rats, gerbils, guinea pigs) and fish. Reptiles and amphibians are prohibited.

Some birds such as parrots, parakeets, and budgerigars are known carriers of Chlamydia psittaci. C. psittaci is found in the droppings of birds and can cause as infection called
Psittacosis. This infection is rare. Consult TPH staff if considering selecting any type of bird for your centre.

Dogs and cats must be trained, in good health, be fully immunized and on a flea, tick and intestinal parasite control program. Dogs and cats must have a current (time specified) certificate from a veterinarian stating the animal has received its full course of applicable vaccine and medication.

All animals must have an appropriate temperament to be around children and show no signs of disease.
- Bringing animals and children together has risk and benefits. Contact with animals can teach children compassion and responsibility; however there are serious health and safety risks associated with keeping of animals.
- Potential risks of animals in DN include allergies, phobias, animal-caused injuries, and zoonoses (an infectious disease that can be transmitted from animals to humans and/or vice versa). Please contact TPH (338-7600) for animal bites/scratches follow up.
- DN can provide a safe environment for children and animals by establishing guidelines and policies for animal and infection prevention and control.

The DN staff should instruct children on the humane and safe procedure to follow when in close proximity to animals.

- All children and staff who handle pets must practice strict hand hygiene.
- All contact between animals and children must be supervised. Children under the age of five must not handle any pets in the DN.
- Children must not feed the animals or have food or drink in proximity of the pets.
- Animals must be housed within some barrier that protects the children.
- Dogs or cats must wear proper collars with license tag (no choke chains as they harm little fingers).
- Animals are prohibited from entering a food preparation area.
- A staff member must be assigned to clean the pet habitat.

**Pest Control**

Staff and DN operators are responsible for ensuring their centre is pest free. A regular cleaning and monitoring program can prevent infestation.

- Inspect the exterior structure of the building; eliminate pest access into the building by repairing/replacing screens or by plugging holes, cracks and other entry ways.
- Address problems to structural issues inside the facility.
- Ensure clutter and accumulation is reduced inside and outside the facility to eliminate harbourage sites for rodents/vermin.
- Ensure food and sensory play materials (e.g. dried pasta) are in labelled plastic containers with tight fitting lids.
- Staff and DN operators must notify their pest control operator if they notice any pest activity in their facility (may be provided by the landlord e.g. School Board or professional
licensed company).

**Ministry of Labour**

The Ministry of Labour (MOL) has 2 Infection Control Practitioners whose role is to review requirements and provide consultation on IPAC issues in the workplace. Occasional audits of "Health Care Facilities" are conducted.

Although DN are not defined under the Health Care and Residential Facilities Regulation, the Ministry of Labour has set precedent by applying this regulation to work settings where infection prevention and control is a key component of that work setting. City of Toronto Day Nurseries have been subject to a Ministry Order written under the Health Care regulation in the past for contraventions related to IPAC.
SECTION 2: MANAGEMENT OF OUTBREAKS

All Day Nurseries must develop and maintain written policies and procedures in preparation for responding to infectious disease outbreaks in your facility, including but not limited to gastroenteritis outbreaks. Toronto Public Health will review these written policies and procedures on an annual basis during your Day Nursery Inspection. Please refer to Administrative Policies in Section 1 for what to include in your Outbreak Policy. Once a suspect outbreak is reported, TPH will assist with the coordination and management of the outbreak.

Public Health Response

Once an outbreak has been declared, you will be working closely with two TPH staff to manage your outbreak. A Public Health Inspector from Healthy Environments will assist you with your day nursery environmental control measures (e.g. review cleaning/disinfection procedures, outbreak consult, on-site inspections).

A Communicable Disease Investigator from Control of Infectious Diseases & Infection Control (CID/IC) will assist in case management (e.g. review line lists, provide exclusion letter, facilitate stool kit submission to the Ontario Public Health Lab and declare the outbreak over).

Identifying an Outbreak

A suspect outbreak exists when there is an increase in the baseline incidence indicating there are a higher than expected number of children and staff who are experiencing similar symptoms of illness. To determine whether a suspect outbreak exists:

- Review your surveillance data, communication books or daily log.
- Identify similar symptoms of illness in children/staff.
- Check recent child/staff absenteeism records.
- Review and eliminate other possible reasons for symptoms (new meds or diet changes)

For example if there are two or more people with the same symptoms, same room, same day; then call TPH to consult. To report a suspect outbreak call the Communicable Diseases Surveillance Unit (CDSU) at 416-392-7411. Have the following information ready when you call:

- Date and time of the first case;
- Date and time of the most recent case;
- Total number of children and staff per room;
- Total number of children and staff ill per room;
- The type of symptoms being experienced (e.g., diarrhea, vomiting, fever);
- The control measures that have been implemented so far.

To help keep this task as easy as possible, TPH can provide you with a form to collect this initial information (Initial Outbreak Notification Form).
TPH staff (CID/IC) will then review the information you provide, with you and determine whether or not an outbreak should be declared. As an example, an enteric outbreak may be declared where a day nursery experiences above the baseline (normal) children and/or staff with one or more of the following gastrointestinal symptoms. (e.g., diarrhea, vomiting, nausea, abdominal cramps, chills and/or fever). When an outbreak is declared you will receive an Outbreak Number that should be written on your documentation (e.g., line list, stool kit submission forms).

**Day Nursery’s Role in Outbreak Control**

All day nurseries are legally responsible for reporting outbreaks to their local public health unit. Once the outbreak has been reported, the day nursery is required to:

- Follow all TPH recommendations and requirements,
- Provide TPH the necessary information pertaining to children and staff,
- Facilitate the collection of stool specimens (after obtaining consent from a parent),
- Immediately report changes associated with the outbreak and provide updated information about the outbreak on a daily basis using the TPH Outbreak Line List.
- Communicate necessary information to the families of children attending the centre. TPH will provide you with a letter for parents once an outbreak has been declared.

**Establishing Case Definition**

A case definition will be established in order to define who is included as a case in an outbreak investigation. A case definition defines a case in time, person and place, (i.e., the date of onset of symptoms of the first case, the symptoms experienced and the age group or room that is affected). An example of a case definition would be: All children and staff of ABC Day Nursery with symptom onset of watery diarrhea and fever starting July 1, 2012.

By creating a case definition, public health professionals are better equipped to study an outbreak and determine possible causes. As investigations proceed, this definition may be expanded or narrowed. This is characteristic of the dynamic nature of outbreak investigations. The case definition should be established in consultation with TPH staff.

**Line List**

The line list is a tool that allows TPH to evaluate the extent of the outbreak. Its purpose is to monitor the number of new cases that occur each day. Only new cases that fit the case definition should be added to the line list (e.g. no person should be on the list who does not have or previously had symptoms outlined in the case definition and persons should not be listed more than once). There should be a separate line list for children and staff.

- Line lists must be updated daily and forwarded to TPH by noon each day or another mutually agreed upon time,
• Provide an updated list even if there are no new cases,
• Advise TPH of any hospitalizations or deaths of line-listed cases (staff and/or children) Note: this is a rare occurrence but one that must be brought to the attention of TPH,
• Encourage older children to report any outbreak-related symptoms to their caregiver.

**Investigating a possible source of an outbreak**
Viral gastroenteritis most often appears as sudden onset of very loose watery diarrhea and/or vomiting. The illness is most often spread via person to person. Usually there is quick resolution of symptoms (within 24-48 hours). Viruses can also be transmitted through food or on items that are soiled with vomit or stool. Until proven otherwise, food is always assumed to be the source of an enteric outbreak. TPH staff often conducts food and day nursery inspections to ensure proper infection control measures are instituted to reduce the risk of transmission.

**Sampling**
Specimen sampling will occur at the discretion of TPH in consultation with the Day Nursery staff. Stool specimens may be required if there is a high proportion of ill children and/ or staff, or the symptoms are severe. CID/IC TPH staff will provide instructions at time of investigation.

If an organism is identified in one specimen and only one specimen was submitted, then permission from the parent to release the results must be obtained prior to releasing the results to the DN operator. If an organism is identified where multiple specimens were submitted, the day nursery may be informed of the results such as the organism (e.g. norovirus) but not case's identity.

Parents of children must be notified if samples are going to be collected from their child and consent must be received prior to submission to Central Public Health Laboratory (CPHL) for testing. In the event that an opportunity to collect a specimen presents itself prior to notifying the parents, the specimen can be collected but MUST NOT be sent to the lab until parental consent has been received. Results from lab specimens will always be released to the parent/guardian.

**Initial and Additional Control Measures**
The Day Nursery operator must communicate to all DN staff/ volunteers/parents what control measures have been implemented as a result of the Outbreak Management consult. As well as co-ordinate and ensure that the agreed upon control measures are enforced.

Ill children and staff are to be excluded from the day nursery. Note: As a minimum children and staff can return to the day nursery when they have been symptom-free of vomiting and/or diarrhea for 48 hours (or until other disease specific criteria has been met such as two negative stools taken 24 hours apart ). TPH staff will give updated directions regarding exclusion as required.
Children who become ill while attending the day nursery should be kept separated from other children until a parent or guardian can take them home. Ill staff must report all outbreak related illness to their Supervisor. All ill staff should be advised that they are not to work at another day nursery until they have met the criteria established by TPH.

Additional Control Measures can include:

- Start additional control measures:
  - Review Hand Hygiene practices ensure all rooms have adequate supplies
  - Increase the frequency of cleaning and disinfecting of common areas, high touch surfaces and toys.
  - Adjust concentration of disinfectant that is approved for use against the organism circulating during the outbreak (most likely norovirus).
  - Suspend communal activities such as sensory play or baking activities.
  - Reinforce with staff, children and visitors the importance of keeping hands clean.
- Admissions can continue if the parent/guardian is aware of the outbreak and understands potential risks (as outlined by TPH).
- DN staff should limit the movement of children from room to room as much as possible.
- Reinforce Hand Hygiene (HH)
- Personal Protective Equipment (PPE). DN operators and staff should use gloves where indicated (e.g. diapering, cleaning, spills).
- Toilet and diaper routine should be reviewed, including the proper use of gloves.
- Increase (one or all) frequency, concentration or contact time of disinfectant
- Ensure change table is disinfected after each use (with an appropriate disinfectant) and infant/toddlers hands are washed. Refer to the TPH Information Sheet "Choosing and Using a Disinfectant" or “Bleach Solutions for Disinfecting” for details regarding the strength of disinfecting solution to be used during outbreaks.

**Communication with parents**

TPH will provide a letter to advise all parents of the outbreak and what actions are necessary should their child becomes symptomatic overnight. The DN supervisor(s) must communicate all control measures to parents/guardians.

**Declaring the Outbreak Over**

*The outbreak will be declared over when the day nursery is clear of new cases that meet the case definition for the period of communicability of the causative agent plus the incubation period.*

Where no organism is isolated see table below. The length of time from last case until outbreak is declared over is based on the case definition and/or established organism.
<table>
<thead>
<tr>
<th>Organism</th>
<th>Incubation Period</th>
<th>Period Of communicability</th>
<th>Total # of Days (no new cases)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norovirus Virus</td>
<td>24-48 hours</td>
<td>During acute stage of illness (48 hours) and 48 hours after diarrhea has stopped</td>
<td>4 days (after onset of last case)</td>
</tr>
<tr>
<td>Rotavirus</td>
<td>1-3 days</td>
<td>During acute stage of illness (4-6 days)</td>
<td>9 days</td>
</tr>
<tr>
<td>Adenovirus</td>
<td>3-10 days</td>
<td>Most communicable during first few days of acute illness</td>
<td>Date when last case has resolved (symptom free) + 10 days.</td>
</tr>
<tr>
<td>Enterovirus (Coxsackieviruses, Echoviruses, Enteroviruses)</td>
<td>3-6 days</td>
<td>Several weeks after onset of infection</td>
<td>- at the end of 14 days (no new cases) discuss with PM.</td>
</tr>
<tr>
<td>Reportable Diseases including Salmonellosis, Shigellosis, Campylobacteriosis, Yersiniosis, Typhoid, Paratyphoid, Verotoxin Producing E.coli.</td>
<td></td>
<td>Refer to Public Health protocols specific to the reportable diseases for exclusion criteria for staff/volunteers and clearance criteria for staff/volunteers and children. Criteria for declaring the outbreak over will be established in consultation with the Program Manager and the Associate Medical Officer Health (AMOH).</td>
<td></td>
</tr>
<tr>
<td>No Organism isolated</td>
<td></td>
<td>Consider organisms which may currently be circulating in the Community. CPHL Lab may provide information. Otherwise, if a virus is suspected and nothing specific can be identified, use criteria for Norovirus</td>
<td></td>
</tr>
</tbody>
</table>
Glossary of Terms

Additional Precautions (AP): Precautions (i.e., Contact Precautions, Droplet Precautions, and Airborne Precautions) that is necessary in addition to Routine Practices for certain pathogens or clinical presentations. These precautions are based on the method of transmission (e.g., contact, droplet, airborne).

Alcohol-based Hand Rub (ABHR): A liquid, gel or foam formulation of alcohol (e.g., ethanol, isopropanol) which is used to reduce the number of microorganisms on hands in clinical situations when the hands are not visibly soiled. ABHRs contain emollients to reduce skin irritation and are less time-consuming to use than washing with soap and water.

Cleaning: The physical removal of foreign material (e.g., dust, soil) and organic material (e.g., blood, secretions, excretions, microorganisms). Cleaning physically removes rather than kills microorganisms. Cleaning is accomplished with water, detergents and mechanical action.

CFU/min: Colony forming unit per minute (e.g. CFU is used to determine the number of viable bacterial cells in a sample per measurement). In this case looking at how fast the colonies increase.

Communicable disease: Illness caused by microorganisms that are transmitted from an infected person or animal to another person or animal.

Communicable Disease Investigator: a Public Health Inspector and/or Public Health Nurse who work in the Control of Infectious Diseases & Infection Control Program of TPH.

Contamination: The presence of an infectious agent on hands or on a surface such as clothes, gowns, gloves, bedding, toys, dressings or other inanimate objects.

Day Nursery: means a premises that receives more than five children who are not of common parentage, primarily for the purpose of providing temporary care, or guidance, or both temporary care and guidance, for a continuous period not exceeding twenty-four hours, where the children are,

(a) under eighteen years of age in the case of a day nursery for children with a developmental disability, and

(b) under ten years of age in all other cases, but does not include,

(c) part of a public school, separate school or private school within the meaning of the Education Act or part of a school continued or established under section 13 of the Education Act; (“garderie”)

Detergent: A synthetic cleansing agent that can emulsify oil and suspend soil. A detergent contains surfactants that do not precipitate in hard water and may also contain protease enzymes (see Enzymatic Cleaner) and whitening agents.

Disinfectant: A product that is used on surfaces or medical equipment/devices which results in disinfection of the equipment/device. Disinfectants are applied only to inanimate objects. Some products combine a cleaner with a disinfectant. Disinfectants rapidly kill or inactivate most infectious agents. Disinfectants are only to be used to disinfect and must not be used as general cleaning agents, unless combined with a cleaning agent as a detergent-disinfectant. Skin antiseptics must never be used as environmental disinfectants (e.g. alcohol-based hand rub,
chlorhexidine).

**Disinfection:** The inactivation of disease-producing microorganisms. Disinfection does not destroy bacterial spores. Medical equipment/devices must be cleaned thoroughly before effective disinfection can take place. See also, Disinfectant. For more information regarding disinfectants go to [http://webprod.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp](http://webprod.hc-sc.gc.ca/dpd-bdpp/index-eng.jsp)

**Drug Identification Number (DIN):** In Canada, disinfectants are regulated as drugs under the Food and Drugs Act and Regulations. Disinfectant manufacturers must obtain a drug identification number (DIN) from Health Canada prior to marketing, which ensures that labelling and supporting data have been provided and that it has been established by the Therapeutic Products Directorate that the product is effective and safe for its intended use.

**Fomites:** Inanimate objects in the environment that may become contaminated with microorganisms and serve as vehicles of transmission.

**Hand Hygiene:** A general term referring to any action of hand cleaning. Hand hygiene relates to the removal of visible soil and removal or killing of transient microorganisms from the hands. Hand hygiene may be accomplished using soap and running water or an alcohol-based hand rub (ABHR). Hand hygiene includes surgical hand antisepsis.

**Hand Washing:** The physical removal of microorganisms from the hands using soap (plain or antimicrobial) under running water

**HE Inspector:** Healthy Environments Public Health Inspector

**High Level Disinfectant (HLD):** The level of disinfection required when processing some semi-critical instruments/items. HLD kills vegetative bacteria, *Mycobacterium*, fungi and enveloped and non-enveloped viruses, but not necessarily bacterial spores.

**Incubation period:** is the time elapsed between exposure to a pathogenic organism, a chemical or radiation, and when symptoms and signs are first appear.

**IPAC:** Infection Prevention and Control

**Infection:** The entry and multiplication of an infectious agent in the tissues of the host. Asymptomatic or sub-clinical infection is an infectious process running a course similar to that of clinical disease but below the threshold of clinical symptoms. Symptomatic or clinical infection is one resulting in clinical signs and symptoms (disease).

**Infection Prevention and Control:** Evidence-based practices and procedures that, when applied consistently in health care settings, can prevent or reduce the risk of infection in clients/patients/residents, health care providers and visitors.

**Infectious Agent:** A microorganism, i.e., a bacterium, fungus, parasite, virus or prion, which is capable of invading body tissues, multiplying and causing infection.

**Intermediate Level Disinfectant (ILD):** The level of disinfection required when processing some semi-critical instruments/items. ILD kills *Mycobacterium*, most viruses and bacteria

**Isolation:** refers to various measures taken to prevent illness from being spread from one person to another
Low-Level Disinfectant: A chemical agent that achieves low-level disinfection when applied to surfaces or items in the environment.

Low-Level Disinfection (LLD): Level of disinfection required when processing non-invasive medical equipment (i.e., non-critical equipment) and some environmental surfaces. Equipment and surfaces must be thoroughly cleaned prior to low-level disinfection.

Material Safety Data Sheet (MSDS): A document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with a chemical product. It also contains information on the use, storage, handling and emergency procedures all related to the hazards of the material. MSDSs are prepared by the supplier or manufacturer of the material.

May: indicates an advisory or optional statement.

Must: indicates best practice, i.e., the minimum standard based on current recommendations in the medical literature

Personal Protective Equipment (PPE): Clothing or equipment worn by staff for protection against hazards.

Provincial Infectious Diseases Advisory Committee (PIDAC): A multidisciplinary scientific advisory body which provides to the Chief Medical Officer of Health evidence-based advice regarding multiple aspects of infectious disease identification, prevention and control. More information is available at: http://www.pidac.ca.

Respiratory Etiquette: Personal practices that help prevent the spread of bacteria and viruses that cause acute respiratory infections (e.g., covering the mouth when coughing, care when disposing of tissues).

Routine Practices: The system of infection prevention and control practices recommended by the Public Health Agency of Canada to be used with all clients/patients/residents during all care to prevent and control transmission of microorganisms in all health care settings. For a full description of Routine Practices, refer to the Ministry of Health and Long-Term Care’s ‘Routine Practices and Additional Precautions for all Health Care Settings’.6 The Ministry’s Routine Practices fact sheet is available at: http://www.health.gov.on.ca/english/providers/program/infectious/pidac/fact_sheet/fs_routine_010107.pdf.

Outbreak: For the purposes of this document, an outbreak is an increase in the number of cases above the number normally occurring in a particular day nursery (i.e. greater than baseline) over a defined period of time.

Precautions: Interventions to reduce the risk of transmission of microorganisms (e.g. child-to-child, child-to-staff, staff-to-child, contact with the environment, contact with contaminated equipment).

Shall: indicates mandatory requirements based on legislated requirements or national standards (i.e., Canadian Standards Association - CSA)

Sharps: Objects capable of causing punctures or cuts (e.g., needles, syringes, blades, clinical glass). Sharps are defined as any material that has the potential to cut or penetrate skin. Examples are razor, broken glass, sharp or jagged metal (e.g., tin cans), needles, syringes.
blades, lancets, clinical glass. Sharps contaminated with blood or bodily fluids are considered bio-hazardous waste.

**Should:** indicates a recommendation or that which is advised but not mandatory

**Surveillance:** Surveillance is the systematic ongoing collection, collation and analysis of data with timely dissemination of information to those who require it in order to take action. The actions usually relate to improvements in the prevention or control of the condition.

**TPH:** Toronto Public Health

**WHO:** World Health Organization
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