

Microorganism, Infectious Disease Table

***Updates in red**

Winnipeg Regional Health Authority
Acute, Long Term Care and Community Infection Control Manual

Microorganism, Infectious Disease	Clinical Presentation	Precautions	Infective Material	Route of Transmission	Incubation Period	Period of Communicability	Duration of Precautions	Comments
Actinomycosis (<i>Actinomyces spp.</i>)	Cervicofacial, thoracic or abdominal infection	Routine Practices			Variable			No person-to-person transmission. Normal flora; infection usually secondary to trauma.
Adenovirus Respiratory strains	Respiratory tract infection (pneumonia)	Acute: Droplet/Contact LTC: Droplet/Contact Community: Routine Practices	Respiratory secretions	Large droplets Direct/indirect contact	1-10 days	Shortly before and until symptoms end	Duration of symptoms	Different strains responsible for respiratory and gastrointestinal disease. P/R/C should not share room with high-risk roommates. Minimize exposure of immunocompromised P/R/Cs, P/R/Cs with chronic cardiac or lung disease, and neonates. Symptoms may be prolonged in immunocompromised individuals.
	Conjunctivitis	Contact	Eye discharge	Direct/indirect contact	5-12 days	Late in incubation period, until 14 days after onset	Duration of symptoms, up to 14 days	Careful attention to aseptic technique and reprocessing of ophthalmology equipment to prevent epidemic keratoconjunctivitis.
Adenovirus Enteric strain	Diarrhea	Adult: Routine Practices* Pediatric: Contact** Community: Routine Practices	Feces	Direct/indirect contact (fecal/oral)	3-10 days	Until symptoms end	Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained, or for adults with poor hygiene who contaminate their environment. **Pediatric precautions apply to children who are incontinent or unable to comply with hygiene. See Enteritis Specific Disease Protocol Community: consider Contact Precautions if client: <ul style="list-style-type: none"> • is incontinent • has stools that cannot be contained • has poor hygiene and may contaminate his/her environment.

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Amebiasis (<i>Entamoeba histolytica</i>)	Dysentery and liver abscess	Adult: Routine Practices* Pediatric: Contact** Community: Routine Practices	Feces	Direct/indirect contact (fecal/oral)	2-4 weeks	Duration of cyst excretion	Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric precautions apply to children who are incontinent or unable to comply with hygiene. Contact site/program Infection Control Professional (ICP) or designate. See Enteritis Specific Disease Protocol Community: consider Contact Precautions if client: <ul style="list-style-type: none"> is incontinent has stools that cannot be contained has poor hygiene and may contaminate his/her environment.
Anaplasmosis (Human Granulocytic Anaplasmosis) (<i>Anaplasma phagocytophilum</i>)	Fever, headache, myalgia, anemia, leukopenia, and thrombocytopenia	Routine Practices		Tick-borne, blood transfusion transmission can occur but is rare	5-21 days			Contact site/program ICP or designate.
Anthrax (<i>Bacillus anthracis</i>)	Cutaneous	Routine Practices			Usually: 2-6 days. Ranges from a few hours to 3 weeks			No person-to-person transmission. Acquired from contact with infected animals and animal products. Inhalation anthrax may occur as a result of occupational exposure to anthrax spores or as a result of bioterrorism. Decontamination and post exposure prophylaxis required for exposure to aerosols in laboratory exposures or biological terrorism. Contact site/program ICP or designate.
	Pulmonary	Routine Practices			4 to 11 days			

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Antimicrobial Resistant Gram-Negative Bacilli (AMR-GNB)		<p>Acute: Containment</p> <p>Long Term Care: To be determined based on a risk/benefit assessment. Consult program ICP</p> <p>Community: Clinic Setting: Contact Precautions may be implemented based on a point of care risk assessment (PCRA) [e.g., wound clinics, vascular clinics] Home Setting:</p>					Duration of hospitalization	Management on a case by case basis in discussion with IP&C, Public Health or delegate, and laboratory. See AMR-GNB specific protocol .
Antimicrobial Resistant Organisms (AROs)	See MRSA , Candida auris , CPE , VRE , VISA , VRSA and AMR-GNB							
Arthropod borne virus* (arboviruses)	Encephalitis, fever, rash, arthralgia, meningitis	Routine Practices	Blood, tissues	Vector-borne (spread by mosquitoes and ticks)	3-21 days (varies with different arboviruses)			No person-to-person transmission, except rarely by blood transfusion or organ transplantation. *Over one hundred different viruses, most limited to specific geographic areas. In North America: West Nile is most common; others include California, St. Louis, Western equine, Eastern equine, Powassan, Colorado tick, Snowshoe hare, Jamestown Canyon.
Ascariasis (<i>Ascaris lumbricoides</i>) (roundworm)	Usually asymptomatic	Routine Practices						No person-to-person transmission. Ova must hatch in soil to become infective.
Aspergillosis (<i>Aspergillus spp.</i>)	Skin, lung, wound or central nervous system infection	Routine Practices						No person-to-person transmission. Spores in dust; infections in immunocompromised P/R/Cs may be associated with construction.

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Astrovirus	Diarrhea	Adult: Routine Practices* Pediatric: Contact** Community: Routine Practices	Feces	Direct/indirect contact (fecal/oral)	3-4 days	Duration of symptoms	Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained, or for adults with poor hygiene who contaminate their environment. **Pediatric precautions apply to children who are incontinent or unable to comply with hygiene. See Enteritis Specific Disease Protocol.
Avian influenza	See Influenza							
Babesiosis (<i>Babesia spp.</i>)		Routine Practices	Blood	Tick-borne	1-6 weeks 1-9 weeks transfusion			No person-to-person transmission, except rarely by blood transmission from asymptomatic parasitemic donors. Contact site/program ICP or designate. Reportable Disease by diagnosing healthcare provider (and phone call to MB Health also required). Contact site/program ICP or designate.
Bacillus cereus	Food poisoning, nausea, vomiting, diarrhea, abdominal cramps	Adult: Routine Practices* Pediatric: Contact** Community: Routine Practices		Foodborne				*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. ** Use Contact Precautions for children who are incontinent or unable to comply with hand hygiene. Community: consider Contact Precautions if client: <ul style="list-style-type: none"> • is incontinent • has stools that cannot be contained • has poor hygiene and may contaminate his/her environment.
Bedbugs (<i>Cimex lectularius</i>)	Allergic reactions and itchy welts	Routine Practices Contact Precautions when more than one bed bug is found on clothing or personal effects						Not known to transmit disease. If necessary, consult professional pest control for infestation. See Bed Bug Specific Disease Protocol (acute) , Bed Bug protocol and operational guideline (LTC) , and Bed Bug protocol (community) .
Blastomycosis (<i>Blastomyces dermatitidis</i>)	Pneumonia, skin lesions	Routine Practices		Inhalation of airborne spores. Traumatic inoculation of skin	21 to 106 days			No person-to-person transmission. Acquired from spores in soil. Contact site/program ICP or designate.

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Bocavirus ^[5, 6] Respiratory tract infection	Cough, rhinorrhea, fever	Droplet/Contact	Respiratory tract secretions and possibly stool				For duration of symptoms Shedding of virus may occur after resolution of symptoms, particularly in immune-compromised hosts	May cohort if infected with same virus. Patient should not share room with high-risk roommates.
Botulism <i>(Clostridium botulinum)</i> Refer to Food Poisoning	Flaccid paralysis; cranial nerve palsies	Routine Practices	Food containing neurotoxin	Foodborne	6-8 days			No person-to-person transmission. Reportable Disease by diagnosing healthcare provider (phone call to MB Health also required). Contact site/program ICP or designate.
Brucellosis <i>(Brucella sp.)</i> Undulant, Malta or Mediterranean fever	Systemic bacterial disease of acute or insidious onset	Routine Practices			Weeks to months			No person-to-person transmission (rarely via banked spermatozoa and sexual contact). Acquired from contact with infected animals or from contaminated food, mostly dairy products. Brucella is hazardous to laboratory workers. Notify laboratory if diagnosis is suspected. Prophylaxis is required following laboratory exposure. Contact site/program ICP or designate.
	Draining lesions	Minor: Routine Practices Major: Contact*	Drainage from open lesions	Possibly direct contact	Weeks to months		Duration of drainage	*Major: Contact Precautions required only if wound drainage cannot be contained by dressings.
Burkholderia cepacia ^[2, 6]	Exacerbation of chronic lung disease in P/R/Cs with Cystic Fibrosis (CF)	Contact*					Until organism cleared as directed by ICP	<i>B. cepacia</i> can result in respiratory tract colonization or infection in P/R/Cs with Cystic Fibrosis. *If other CF patients are on the unit. All interactions with other CF patients should be avoided.
Caliciviruses	See Noroviruses							

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<i>Campylobacter spp.</i>	Gastroenteritis	Adult: Routine Practices* Pediatric: Contact**	Contaminated food, feces	Direct/indirect contact (fecal/oral)	1-10 days	Duration of excretion	Duration of symptoms	Person-to-person transmission is uncommon. *Consider Contact Precautions for adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric precautions apply to children who are incontinent or unable to comply with hygiene. Treatment with effective antimicrobial shortens period of infectivity.
<i>Candida auris</i>⁺	Infection or colonization (i.e., asymptomatic) of any body site	Containment Long Term Care: Routine Practices* Community: Routine Practices*	Infected or colonized secretions, excretions	Direct and indirect contact	Variable	Variable	As directed by ICP	Notify Infection Prevention & Control. See Candida auris Specific Disease Protocol + Implement additional precautions until antimicrobial sensitivities are determined. If non-MDR, Routine Practices are then appropriate. *When asymptomatic, precautions not required in Long Term Care, prehospital and home care.
Candidiasis (<i>Candida spp.</i>)	Many	Routine Practices						Normal flora.

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Carbapenemase-Producing Enterobacteriaceae (CPE)	Infection or colonization (i.e., asymptomatic) of any body site	<p>Acute: Containment</p> <p>Long Term Care: To be determined based on a risk/benefit assessment. Consult program ICP</p> <p>Community: Clinic Setting: Based on PCRA. Contact Precautions where invasive procedures are performed (e.g., CIVP, wound clinics) Home Setting: N/A</p>	Infected or colonized secretions and excretions	Direct and indirect contact	Variable	Variable	Continuous	<p>Notify site/program ICP or designate of suspect or confirmed cases; leave a message after hours</p> <p>Consult site/program ICP or designate to determine which healthcare facilities are known to have endemic CPE.</p> <p>Consult site/program ICP or designate BEFORE transport or cohorting if single rooms are limited. If ICP has not been previously notified, contact:</p> <ul style="list-style-type: none"> • Dr. Evelyn Lo @ pager: 204-932-6538 for St. Boniface Hospital concerns. • Dr. John Embil @ HSC paging: 204-787-2071 for all other hospitals' concerns. • Attending Pediatric ID Physician @ 204-787-2071 for pediatric concerns.
Cat Scratch Disease (<i>Bartonella henselae</i>)	Fever, lymphadenopathy	Routine Practices			16-22 days			<p>No person-to-person transmission.</p> <p>Acquired from animals (cats and others).</p>
Chancroid (<i>Haemophilus ducreyi</i>)	Genital ulcers	Routine Practices		Sexual transmission	3-14 days	Until healed and as long as infectious agent persists in the original lesion		Contact site/program ICP or designate.
Chickenpox	See Varicella							
Chlamydia Infections: <i>C. trachomatis</i>	Urethritis, cervicitis, pelvic inflammatory disease; neonatal conjunctivitis, infant pneumonia; trachoma	Routine Practices	Conjunctival and genital secretions	Sexual transmission Mother to child at birth Trachoma: direct/indirect contact	7-14 days	As long as organism present in secretions		Contact site/program ICP or designate.

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<i>Chlamydia pneumoniae</i>	Pneumonia	Routine Practices	Respiratory secretions	Unknown	Unknown	Unknown		Rare outbreaks of pneumonia in institutionalized populations.
<i>Chlamydia psittaci</i> (<i>psittacosis</i> , <i>ornithosis</i>)	Pneumonia and undifferentiated fever	Routine Practices	Infected birds		7-14 days			No person-to-person transmission. Acquired by inhalation of desiccated droppings, secretions and dust of infected birds.
Cholera (<i>Vibrio cholerae</i> 01, 0139)	Diarrhea	Adult: Routine Practices* Pediatric: Contact**	Feces	Direct/indirect contact (fecal/oral)	Few hours to 5 days	Duration of shedding	Duration of symptoms	Reportable Disease by diagnosing healthcare provider (and phone call to MB Health also required). Contact site/program ICP or designate. *Consider Contact Precautions for adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric precautions apply to children who are incontinent or unable to comply with hygiene. See Enteritis Specific Disease Protocol .
<i>Clostridioides difficile</i> (formerly called <i>Clostridium difficile</i>)	Diarrhea, pseudo-membranous colitis	Acute: Contact Long Term Care: Contact Community: Routine Practices*	Feces	Direct/indirect contact (fecal/oral)	Variable	Duration of shedding	Until asymptomatic for at least 48 hours	Bacterial spores persist in the environment. Relapses are common. Ensure scheduled environmental cleaning and disinfection. Dedicated P/R/C care equipment. During outbreaks, special attention should be paid to cleaning. See Enteritis Specific Disease Protocol . *Community: consider Contact Precautions if client: <ul style="list-style-type: none"> • is incontinent • has stools that cannot be contained • has poor hygiene and may contaminate their environment.
<i>Clostridium perfringens</i>	Food poisoning	Routine Practices	Feces	Direct/indirect contact (fecal/oral)	6-24 hours			No person-to-person transmission.
	Gas gangrene, abscesses, myonecrosis	Routine Practices			Variable			No person-to-person transmission.
Coccidioido-mycosis (<i>Coccidioides immitis</i>)	Pneumonia, draining lesions	Routine Practices			1-4 weeks			No person-to-person transmission. Acquired from spores in soil, dust in endemic areas.

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Colorado tick fever	Biphasic fever, chills, headache, body aches, feeling tired	Routine Practices		Tick-borne	3-6 days			No person-to-person transmission. See Arbovirus entry.
Congenital rubella	See Rubella . Reportable disease by diagnosing healthcare provider. Contact site/program ICP or designate.							
Coronavirus (other than MERS CoV or SARS CoV) MERS- CoV: See Middle Eastern Respiratory Syndrome entry SARS CoV: See Severe acute respiratory syndrome entry	Common cold	Acute: Droplet/Contact Long Term Care: Droplet/Contact Community: Routine Practices	Respiratory secretions	Direct/indirect contact. Possible large droplet	2-4 days	Until symptoms resolve	*Duration of symptoms	May cohort if infected with same virus. Patient should not share room with high-risk roommates. *Discontinue precautions based on resolution of respiratory symptoms (non-ventilated patients) and/or clinical improvement (ventilated patients) for 48 hours and not based on duration of treatment or negative laboratory results. Chronic respiratory symptoms and post viral cough do not require maintenance of precautions.
COVID-19	Cough, headache, fever/chills, muscle aches, sore throat/hoarse voice, shortness of breath/ breathing difficulties, loss of taste or smell, vomiting or diarrhea for more than 24 hours, poor feeding if an infant, runny nose, fatigue, nausea or loss of appetite, conjunctivitis, skin rash of unknown cause	Enhanced Droplet/Contact (i.e., Droplet/Contact + Airborne for AGMPs)	Respiratory secretions	Direct/indirect contact	1-14 days (average 5-6 days)	48 hours prior to symptom onset	7 days from symptom onset with 24 hours with of no symptoms (asymptomatic) ¹⁰ <u>Immuno-compromised:</u> At least 10 days from symptoms onset with 24 hours of no symptoms (asymptomatic) ¹⁰	See COVID-19 Specific Disease Protocol (Winnipeg) – Acute and Community Health-care Settings , COVID-19 Infection Prevention and Control Guidance for Personal Care Homes , and COVID-19 Provincial Guidance and Screening Tool for Management of Home Visits . Notify site/program ICP or designate.

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Coxsachievirus	See Enteroviral infections							
Creutzfeldt-Jakob Disease (CJD)	Chronic encephalopathy	Routine Practices*	Contaminated neurosurgical instruments; Tissue grafts from infected donors		Variable			No person-to-person transmission. Reportable disease by diagnosing healthcare provider. Contact site/program ICP or designate. *Special Precautions for instruments contaminated with CSF or CNS tissues, neurosurgical procedures, autopsy and handling deceased body required. Note: Transmission has been documented following human pituitary hormone therapy, human dura mater grafts, corneal grafts and linked to neurosurgical instruments. See: CJD Protocol .
Crimean-Congo Fever	See Viral Hemorrhagic Fevers							
Cryptococcosis (<i>Cryptococcus neoformans</i>)	Pneumonia, meningitis, adenopathy	Routine Practices			Unknown			No person-to-person transmission.
Cryptosporidiosis (<i>Cryptosporidium parvum</i>)	Diarrhea	Adult: Routine Practices* Pediatric: Contact**	Feces	Direct/indirect contact (fecal/oral)	1-12 days	From onset of symptoms until several weeks after resolution	Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric Precautions apply to children who are incontinent or unable to comply with hygiene. Reportable Disease by diagnosing healthcare provider. Contact site ICP. See Enteritis Specific Disease Protocol .
Cystic Fibrosis (CF)		Contact				CF is not contagious		See Cystic Fibrosis protocol .
Cysticercosis (<i>Taenia solium</i> larvae)	<i>T. solium</i> larval cysts in various organs	Routine Practices	Ova in feces	Direct contact (fecal/oral)	Months to years	While eggs present in feces		Transmissible only from humans with <i>T. solium</i> adult tapeworm in gastrointestinal tract (autoinfection occurs).

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Cytomegalovirus (CMV)	Usually asymptomatic; congenital infection, retinitis, mononucleosis, pneumonia, disseminated infection in immunocompromised host	Routine Practices	Saliva, genital secretions, urine, breast milk, transplanted organs or stem cells, blood products	Direct* Sexual transmission Vertical mother to child in utero, at birth or through breast milk Transfusion or Transplantation	Unknown	Virus is excreted in urine, saliva, genital secretions, breast milk for many months; may persist or be episodic for life		No Additional Precautions for HCWs. Requires close direct personal contact for transmission. *Disease often reactivation, rather than new infection.
Dengue (arbovirus)	Fever, arthralgia, rash	Routine Practices		Mosquito-borne	3-14 days			No person-to-person transmission.
Dermatophytosis	See Tinea spp. entry							
Diphtheria (Corynebacterium diphtheria)	Cutaneous** (characteristic ulcerative lesion)	Contact**	Lesion drainage	Direct/indirect contact	2-7 days	If untreated, 2 weeks to several months	Until 2 cultures* from skin lesions are negative	*Cultures should be taken at least 24 hours apart and at least 24 hours after cessation of antimicrobial therapy. Close contacts should be given antimicrobial prophylaxis as per Canadian Immunization Guide (current edition). Reportable Disease by diagnosing healthcare provider (phone call to MB Health also required). Contact site/program ICP or designate. **Non-toxigenic diphtheria require Routine Practices only
	Pharyngeal (adherent grayish membrane)	Droplet	Nasopharyngeal secretions	Large droplets	2-7 days	If untreated, 2 weeks to several months	Until 2 cultures* from both nose AND throat are negative	
Ebola	See Viral hemorrhagic fever							
Echinococcosis (Hydatidosis) (Echinococcus granulosus, E. multilocularis)	Cysts in various organs – liver most common	Routine Practices			Months to years			No person-to-person transmission. Acquired from contact with infected animals.
Echovirus	See Enterovirus							

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Enterobiasis (Oxyuriasis, pinworm) (<i>Enterobius vermicularis</i>)	Perianal itching	Routine Practices	Ova in stool, perianal region	Direct/indirect contact*	Life cycle requires 2-6 weeks	As long as gravid females discharge eggs on perianal skin. Eggs remain infective indoors about 2 weeks		Direct transfer of infective eggs by hand from anus to mouth of the same or another person; indirectly through clothing, bedding or other contaminated articles. *Close household contacts may need treatment.
Enterococcus species (Vancomycin resistant only)	See Vancomycin-resistant enterococci entry							
Enteroviral infections Echovirus, Coxsackievirus A, Coxsackievirus B, Enterovirus Poliovirus - See poliomyelitis	Acute febrile symptoms, aseptic meningitis, encephalitis, pharyngitis, herpangina, rash, pleurodynia, hand, foot and mouth disease	Adult: Routine Practices* Pediatric: Contact** Community: Routine Practices	Feces, respiratory secretions	Direct/indirect contact (fecal/oral)	3-5 days		Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric Precautions apply to children who are incontinent or unable to comply with hygiene.
	Conjunctivitis	Contact	Eye discharge	Direct/indirect contact	1-3 days		Duration of symptoms	
Epstein Barr virus	Infectious mononucleosis	Routine Practices	Saliva, transplanted organs or stem cells	Direct oropharyngeal route via saliva; transplantation	4-6 weeks	Prolonged: pharyngeal excretion may be intermittent or persistent for years		
Erythema infectiosum	See Parvovirus B19 entry							
Escherichia coli (entero- pathogenic strains)	Diarrhea, food poisoning, hemolytic uremic syndrome (HUS), thrombotic thrombocytopenic purpura	Adult: Routine Practices* Pediatric: Contact** Community: Routine Practices	Feces	Direct/indirect contact (fecal/oral) Foodborne	1-8 days	Duration of shedding	Duration of symptoms If Hemolytic Uremic Syndrome (HUS): until 2 stools negative for <i>E. coli</i> O157:H7 or 10 days from onset of diarrhea	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric Precautions apply to children who are incontinent or unable to comply with hygiene. Contact site/program ICP or designate.

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Fifth disease	See Parvovirus entry							
German measles	See Rubella entry							
Giardia (<i>Giardia lamblia</i>)	Diarrhea	Adult: Routine Practices* Pediatric: Contact**	Feces	Direct/indirect contact (fecal/oral)	3-25 days	Entire period of infection; often months	Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric Precautions apply to children who are incontinent or unable to comply with hygiene.
Granuloma inguinale (Donovanosis) (<i>Calymmatobacterium granulomatis</i>)	Painless genital ulcers inguinal ulcers, nodules	Routine Practices		Sexual transmission	Unknown; probably between 1-16 weeks	Unknown; probably for the duration of open lesions on the skin or mucous membranes		
Haemophilus influenzae (<i>invasive infections</i>)	Pneumonia, epiglottitis, meningitis, bacteremia, septic arthritis, cellulitis, osteomyelitis in a child	Adult: Routine Practices Pediatric: Droplet	Respiratory secretions	Large droplets, direct contact	Variable	Most infectious in the week before onset of symptoms and during symptoms until treated	Until 24 hours of appropriate antimicrobial therapy has been received	Close contacts with children less than 48 months old and who are not immune, may require chemoprophylaxis. Household contacts of such children should receive prophylaxis. Contact site/program ICP or designate. <i>Haemophilus influenzae</i> invasive disease is a Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate
Hand, foot and mouth disease	See Enteroviral infections entry							
Hansen's Disease	See Leprosy entry							
Hantavirus (Hantavirus pulmonary syndrome)	Fever, pneumonia	Routine Practices	Rodent excreta	Presumed aerosol transmission from rodent excreta	A few days to 6 weeks	Not well defined, person-to-person is rare (documented for S. American strains)		Infection acquired from rodents. Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate.
Helicobacter pylori	Gastritis, duodenal ulcer disease	Routine Practices		Probable ingestion of organisms; presumed fecal-oral/oral-oral	5-10 days	Unknown		

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Hepatitis A, E	Hepatitis, anicteric acute febrile symptoms	Adult: Routine Practices* Pediatric: Contact**	Feces	Direct/indirect contact (fecal/oral)	A: 15-50 days (average 28 days) E: 26-42 days	A: 2 weeks before to 1 week after onset of jaundice. Shedding is prolonged in the newborn. E: Not known; at least 2 weeks before onset of symptoms.	1 week after onset of jaundice; duration of hospitalization if newborn	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric Precautions apply to children who are incontinent or unable to comply with hygiene. Post-exposure prophylaxis indicated for non-immune household contacts with significant exposure to hepatitis A, if within 2 weeks of exposure. Outbreaks of HAV in HCWs have been associated with eating and drinking in P/R/C care areas. Contact site/program ICP or designate.
Hepatitis B, C, D	Hepatitis, often asymptomatic: cirrhosis, hepatic cancer	Routine Practices	Blood, genital secretions, and certain other body fluids	Mucosal or percutaneous exposure to infective body fluids Sexual transmission Vertical mother to child	B: 45-180 days (average 60-90 days) C: 2 weeks to 6 months D: 2-8 weeks	B: all persons who are HBsAg positive are infectious; C: indefinite D: indefinite		Follow the WRHA Post Exposure Prophylaxis Care Map/Blood & Body Fluid Exposure Management Policy . Report an exposure to infective material e.g., needle stick or blood spill/splash immediately to Occupational and Environmental Safety and Health . Contact site/program ICP or designate. Sexual and perianal transmission can occur, but is uncommon for Hepatitis C.
Herpes simplex virus	Encephalitis	Adult: Routine Practices Pediatric: Contact*					*Pediatric: Until 24 hours after acyclovir treatment AND no skin lesions	*Reference: Dr. Joanne Embree, Pediatric Infectious Disease Physician. Expert opinion. (2018, July20).
	Neonatal	Contact	Skin or mucosal lesions; possibly all body secretions and excretions	Direct contact	Birth to 6 weeks of age		Duration of symptoms	Contact Precautions are also indicated for infants delivered vaginally (or by C-section if membranes have been ruptured more than 4-6 hours) to women with active genital HSV infections, until neonatal HSV infection has been ruled out.

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	Mucocutaneous: disseminated or primary and extensive (gingivostomatitis, eczema herpeticum)	Contact	Skin or mucosal lesions Sexual transmission Mother to child at birth	Direct contact	2 days to 2 weeks	While lesions present	Until lesions are dry and crusted	
	Recurrent	Routine Practices						
Herpes zoster	See Varicella entry							
Histoplasmosis (<i>Histoplasma capsulatum</i>)	Pneumonia, lymphadenopathy, fever	Routine Practices	Spores in soil	Inhalation of spores	3-17 days			No person-to-person transmission. Acquired from spores in soil.
Hookworm (<i>Necator americanus</i> , <i>Ancylostoma duodenale</i>)	Usually asymptomatic	Routine Practices	Soil containing hatched larvae	Percutaneous Fecal-oral	Few weeks to many months			No person-to-person transmission. Larvae must hatch in soil to become infectious.
Human herpesvirus 6 (HHV-6)	See Roseola entry							
Human immunodeficiency virus (HIV)	Asymptomatic; multiple clinical presentations	Routine Practices	Blood, genital secretions, breast milk and certain other body fluids	Mucosal or percutaneous exposure to infective body fluids Sexual transmission Vertical mother to child	Weeks to years	From onset of infection	Continuous	Immediately contact MOH or delegate if HCW has percutaneous, non-intact skin or mucous membrane exposure. AIDS is a Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate.

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Human meta-pneumovirus	Respiratory tract infection	Droplet/Contact*	Respiratory secretions	Large droplets Direct/indirect contact	3-5 days		*Duration of symptoms	<p>May cohort if infected with same virus.</p> <p>P/R/C should not share room with high-risk roommates.</p> <p>*Discontinue precautions based on resolution of respiratory symptoms (non-ventilated P/R/Cs) or clinical improvement (ventilated P/R/Cs) and not based on duration of treatment or negative laboratory results. Chronic respiratory symptoms or post viral cough do not require maintenance of precautions.</p>
Human T-cell leukemia virus, human T-lymphotropic virus (HTLV-I, HTLV-II)	Usually asymptomatic, tropical spastic paraparesis, lymphoma	Routine Practices	Breast milk, blood and certain other body fluids	Vertical mother to child; mucosal or percutaneous exposure to infective body fluids	Weeks to years	Indefinite		
Infectious mononucleosis	See Epstein-Bar entry							
Influenza Seasonal	Respiratory tract infection	<p>Acute: Droplet/Contact</p> <p>Long Term Care: Droplet/Contact</p> <p>Community: Routine Practices⁺</p>	Respiratory secretions	Large droplets, Direct/indirect contact	1-4 days	<p>Adults: 1 day before symptom onset to 3-5 days from clinical onset</p> <p>Children: up to 7-10 days after symptom onset</p>	*Duration of symptoms	<p>If private room is unavailable, consider cohorting P/R/Cs during outbreaks.</p> <p>P/R/Cs should not share room with high-risk roommates.</p> <p>*Discontinue precautions based on resolution of respiratory symptoms (non-ventilated P/R/Cs) and/or clinical improvement (ventilated) for 48 hours, and not based on duration of treatment or negative laboratory results.</p> <p>Chronic respiratory symptoms or post viral cough do not require maintenance of precautions.</p> <p>Consider anti-viral prophylaxis for exposed roommates.</p> <p>Contact site/program ICP or designate.</p> <p>See: Influenza (Seasonal) Protocol.</p> <p>⁺Community: consider droplet and contact precautions if P/R/C has poor cough etiquette or uncontained secretions.</p>
Influenza: Pandemic Novel influenza Viruses	Respiratory tract infection	*Pandemic Influenza Precautions	As seasonal influenza	As for seasonal influenza	Unknown; possibly 1-7 days	Unknown, possibly up to 7 days	*Duration of symptoms	<p>See: Pandemic Influenza Protocol.</p> <p>*Discontinue precautions based on resolution of respiratory symptoms (non-ventilated P/R/Cs) or clinical improvement (ventilated) for 48 hours, and not based on duration of treatment or negative laboratory results.</p> <p>Chronic respiratory symptoms or post viral cough do not require maintenance of precautions.</p> <p>Contact site/program ICP or designate.</p>

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Influenza: Avian Influenza A H7N9	Respiratory tract infection, conjunctivitis	Enhanced Droplet Contact (i.e., Droplet/Contact + Airborne for AGMPs)	Excreta of sick birds, possibly human respiratory tract secretions					See Human Health Issues Related to Domestic Avian Influenza in Canada for current information on Avian influenza. Contact site/program ICP or designate.
Lassa fever	See Viral hemorrhagic fever entry							
Legionellosis (<i>Legionella spp.</i>)	Pneumonia, Legionnaires' disease, Pontiac fever	Routine Practices	Contaminated water sources/systems	Inhalation	2-10 days			No person-to-person transmission. Acquired from contaminated water sources (inhalation not ingestion).
Leprosy (Hansen's disease) (<i>Mycobacterium leprae</i>)	Chronic disease of skin, nerves, nasopharyngeal mucosa	Routine Practices	Nasal secretions, skin lesions	Direct contact	9 months to 20 years			Transmitted between persons only with very prolonged extensive close personal contact. Household contacts should be assessed and may be given prophylaxis. Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate.
Leptospirosis (<i>Leptospira spp.</i>)	Fever, jaundice, aseptic meningitis	Routine Practices			2-30 days			Direct person-to-person transmission is rare. Acquired from contact with animals and animal excretion.
Lice (pediculosis) Head, Body Pubic (crab) (<i>Pediculus capitis, Pediculus corporis, Pediculus humanus, Pthirus pubis</i>)	Scalp or body itch, itchy rash	Routine Practices plus gloves for direct patient contact only	Louse	Head and body lice: Direct/indirect contact Pubic lice: Usually sexual contact	7-12 days	Until effective treatment to kill lice and ova	Until 24 hours after application of appropriate pediculicide; applied as directed	Apply pediculicides as directed on label, including combing nits. If live lice found after therapy, repeat. Wash all personal items. For pediatrics, consider treatment of close contact household members. Head lice: Wash headgear, combs, pillowcases, towels with hot water and dry with hot air for 15 minutes, or seal in a watertight plastic bag for two weeks or dry clean or freeze for several days. Body lice: as above, for all exposed clothing and bedding. See: Lice (Pediculosis) Protocol .

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Listeriosis (<i>Listeria monocytogenes</i>)	Fever, meningitis Congenital or neonatal infection	Routine Practices	Listeria grows well at low temperatures and is able to multiply in contaminated refrigerated foods Pregnant women and immune compromised people should avoid cheese made with unpasteurized milk; cold cuts & uncooked meat products, including hot dogs	Foodborne Vertical mother to child in utero or at birth	Mean 21 days; 3-70 days following a single exposure to an implicated food product			Nosocomial outbreaks reported in newborn nurseries due to contaminated equipment or materials. Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate.
Lyme disease (<i>Borrelia burgdorferi</i>)	Fever, arthritis, rash, meningitis	Routine Practices		Tick-borne	To initial rash: 3-30 days			No person-to-person transmission. Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate.
Lymphocytic choriomeningitis virus	Aseptic meningitis	Routine Practices	Urine of rodents		6-21 days			No person-to-person transmission. Acquired from contact with rodents.
Lymphogranuloma venereum (<i>C. trachomatis serovars L1, L2, L3</i>)	Genital ulcers, inguinal adenopathy	Routine Practices		Sexually transmitted	Range of 3-30 days for a primary lesion	Weeks to years in presence of active lesions		

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Malaria <i>(Plasmodium spp.)</i>	Fever	Routine Practices	Blood	Mosquito-borne, rarely transplacental from mother to fetus, blood transfusion	*Variable; <i>P. falciparum:</i> 9-14 days <i>P. vivax and P. ovale:</i> 12 to 28 days <i>P. malariae:</i> 18-40 days <i>P. knowlesi:</i> 10-13 days			Not normally person-to-person transmitted. Can be transmitted via blood transfusion. *Can be prolonged in people who have taken prophylactic antimalarial medications.
Marburg virus	See Viral hemorrhagic fever entry							
Measles <i>(Rubeola)</i>	Fever, cough, coryza, conjunctivitis, maculopapular skin rash	Airborne	Respiratory secretions	Airborne	7-18 days to onset of fever; rarely as long as 21 days	4 days before onset of rash (1-2 days before onset of initial symptoms) until 4 days after onset of rash (longer in immune compromised P/R/Cs)	4 days after start of rash; duration of symptoms in immune compromised P/R/Cs	It is recommended that only immune HCWs, caretakers and visitors enter the room. N95 required for unknown immune or non-immune persons who must enter P/R/C room. Precautions should be taken with neonates born to mothers with measles infection susceptible contacts. Immunoprophylaxis is indicated for susceptible contact.
	Susceptible contact	Airborne	Respiratory secretions	Airborne		Potentially communicable during last 2 days of incubation period	From 5 days after first exposure through 21 days after last exposure regardless of post-exposure prophylaxis	Reportable Disease by diagnosing healthcare provider (phone call to MB Health also required). Contact site/program ICP or designate. See Measles/Rubeola Protocol.
Melioidosis <i>(Pseudomonas pseudomallei)</i>	Pneumonia, fever	Routine Practices	Contaminated soil		Variable			Organism in soil in South-East Asia. Person-to-person has not been proven.

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Meningococcus (<i>Neisseria meningitidis</i>)	Rash (petechial/purpuric) with fever Meningococemia meningitis, pneumonia	Adults & Children >5 years: Droplet Children <5 years: Droplet/Contact	Respiratory secretions	Large droplet and Direct Contact	2-10 days	7 days before onset of symptoms until 24 hours after effective antimicrobial therapy	Until 24 hours of effective antimicrobial therapy received	Close contacts may require chemoprophylaxis. Refer to Specific Disease Protocol: Meningitis - Meningococcal. Reportable Disease by diagnosing healthcare provider (if invasive disease, a phone call by diagnosing healthcare provider is also required to MB Health). Contact site/program ICP or designate.
Methicillin resistant S. aureus (MRSA)	Infection or colonization (e.g., asymptomatic) of any body site	Acute: Contact Long Term Care: Routine Practices* Community: Routine Practices	Infected or colonized secretions and excretions	Direct and indirect and large droplets (if pneumonia)	Variable	Variable	Variable	See MRSA Specific Disease Protocol . *When asymptomatic, precautions are not required in long term care, prehospital and home care. Community: Consider contact precautions where invasive procedures are performed (e.g., CIVP, wound care clinics).
Middle Eastern Respiratory Syndrome (MERS CoV [3])	Fever with new onset of cough or breathing difficulty	Airborne/ Droplet/Contact	Respiratory secretions	Large droplet, Direct/indirect contact	3-10 days	Not yet determined; suggested to be less than 21 days	10 days following resolutions of fever if respiratory symptoms have also resolved.	Single room; may cohort if infected with the same virus. Reportable Disease by diagnosing healthcare provider (with phone call as well to MB Health). Contact site/program ICP or designate.
Molluscum contagiosum	Umbilical papules	Routine Practices	Contents of papules	Direct contact	2 weeks to 6 months	Unknown		Requires close direct personal contact for transmission including sexual contact or fomites.
Mpox (formerly known as Monkeypox)	Resembles small-pox; lymphadenopathy is a more dominant feature	Airborne/ Droplet/Contact	Lesions and respiratory secretions	Contact with infected animals. Possible airborne transmission from animals to humans			Until all lesions crusted over and fallen off and new skin can be seen	Transmission in hospital settings is unlikely. See Mpox Specific Disease Protocol, and Manitoba Health Mpox .
Mucormycosis (phycomycosis; zygomycosis) (Mucor, Zygomycetes)	Skin, wound, rhinocerebral, pulmonary, gastrointestinal disseminated infection*	Routine Practices	Fungal spores in dust and soil	Inhalation or ingestion of fungal spores	Unknown		Unknown	No person-to-person transmission. Acquired from spores in dust, soil. *Infections in immunocompromised P/R/Cs.

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Mumps	Swelling of salivary glands, orchitis, meningitis	Droplet	Saliva, respiratory secretions	Large droplets, direct contact	Usually 16-18 days; range 12-25 days	Viral excretion highest 7 days before to 5 days after onset or parotitis	Until 5 days after onset of symptoms. Exposed susceptible P/R/Cs : 10 days after first contact until 26 days after last exposure	<p>Droplet Precautions for exposed susceptible P/R/C and health care workers should begin 10 days after first contact and continue through 26 days after last exposure.</p> <p>It is recommended that only immune HCWs, caretakers and visitors enter the room.</p> <p>Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well).</p> <p>Contact site/program ICP or designate.</p> <p>Refer to Mumps Protocol.</p>
Mycobacterium, non-tuberculosis (atypical)	Lymphadenitis; pneumonia; disseminated disease in immune compromised host	Routine Practices			Unknown			<p>No person-to-person transmission.</p> <p>Acquired from soil, water, animals and reservoirs.</p> <p>Infectious substances: widely distributed in the environment, particularly in wet soil, marshlands, streams and rivers.</p>

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<i>Mycobacterium tuberculosis</i> (also <i>Mycobacterium africanum</i> , <i>Mycobacterium bovis</i>)	Confirmed or suspected respiratory (including pleural, laryngeal)	Airborne*	Respiratory secretions	Airborne	Weeks to years	While organisms are viable in sputum	Until deemed no longer infectious. If confirmed TB, until patient has received 2 weeks of effective therapy, and is improving clinically and has 3 consecutive sputum smears negative for acid fast bacilli, with at least one early morning specimen. If multi-drug resistant TB, for the duration of their hospital stay or three consecutive sputum cultures are negative after six weeks of incubation.	Tuberculosis in young children is rarely transmissible, due to usual absence of cavitary disease and weak cough. Assess visiting family members for cough. If AGMP: see strategies to reduce aerosol generation. Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate. Refer to Tuberculosis Specific Disease Protocol .
	Non-pulmonary: meningitis, bone or joint infection peritonitis, pericardial with no drainage	Routine Practices*once respiratory TB is ruled out						Maintain precautions until drainage stops or until 3 consecutive negative acid-fast bacilli smears of drainage. If multi-drug resistant TB, duration of hospital stay, or until 3 consecutive negative cultures

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	Non-pulmonary: skin or soft tissue draining lesions	Routine Practices Airborne*	Aerosolized wound drainage	While viable microorganisms are in drainage				
	PPD skin test positive with no evidence of current pulmonary disease	Routine Practices		Non-communicable				
<i>Mycoplasma pneumoniae</i>	Pneumonia	Droplet	Respiratory secretions	Large droplets	1-4 weeks	Unknown	Duration of symptoms	
<i>Neisseria gonorrhoeae</i>	Urethritis, cervicitis, pelvic inflammatory disease, arthritis, ophthalmia neonatorum, conjunctivitis	Routine Practices	Exudates from lesions	Sexual transmission Mother to child at birth Rarely: direct/indirect contact	2-7 days	May extend for months if untreated		Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate.
<i>Neisseria meningitidis</i>	See Meningococcus (<i>Neisseria meningitidis</i>) entry							
Nocardiosis (<i>Nocardia spp.</i>)	Fever, pulmonary or CNS infection or disseminated disease	Routine Practices			Unknown			No person-to-person transmission. Acquired from inhalation of organisms in the soil and dust.
Noroviruses (Norwalk-like agents, Caliciviruses e.g.: Sapovirus)	Nausea, vomiting, diarrhea	Acute: Contact Long Term Care: Contact Community: Routine Practices*	Feces, emesis	Direct/indirect contact (fecal/oral) and large droplets (vomiting)	Usually 24-48 hours, range of 10-50 hours	When symptoms appear: duration of viral shedding; usually 72 hours after diarrhea resolves	72 hours after resolution of symptoms	Special attention to cleaning. Medical mask and eye protection for body fluid disposal. Usually outbreak associated. See Enteritis Special Disease Protocol . *Community: consider Contact Precautions if client: <ul style="list-style-type: none"> • is incontinent • has stools that cannot be contained • has poor hygiene and may contaminate his/her environment.
Orf Virus (poxvirus)	Skin lesions	Routine Practices			Generally, 3-6 days			No person-to- person transmission. Acquired from infected animals.

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Parainfluenza virus	Respiratory tract infection	Droplet/Contact Community: Routine Practices	Respiratory secretions	Large droplets, Direct/indirect contact	2-6 days	1-3 weeks/duration of symptoms	*Duration of symptoms	May cohort if infected with same virus. P/R/Cs should not share room with high-risk roommates. *Discontinue precautions based on resolution of respiratory symptoms (non-ventilated P/R/Cs) or clinical improvement (ventilated P/R/Cs) for 48 hours and not based on duration of treatment or negative laboratory results. Chronic respiratory symptoms or post viral cough do not require maintenance of precautions.
Parvovirus B-19 Human parvovirus	<i>Erythema infectiosum</i> (fifth disease) Aplastic or erythrocytic crisis, fever, headache, rhinitis	Routine Practices: Fifth disease Droplet: Aplastic crisis or chronic infection in immune compromised patient	Respiratory secretions	Large droplets, direct contact Vertical mother to fetus	4-21 days to onset of rash	Fifth disease: no longer infectious once rash appears Aplastic crisis: up to 1 week after onset of crisis Immune compromised with chronic infection: months to years	Aplastic or erythrocytic crisis: 7 days Chronic infection in immune-compromised patient: duration of hospitalization	
Pediculosis	See lice entry							
Pertussis (<i>Bordetella pertussis B. parapertussis</i>)	Whooping cough, non-specific respiratory tract infection in infants, adolescents and adults	Droplet	Respiratory secretions	Large droplets	Average 7-10 days; range 6-20 days	To 3 weeks after onset of paroxysms if not treated	To 3 weeks after onset of paroxysms if not treated; or until 5 days of appropriate antimicrobial therapy received	Close contacts (household and HCWs) may need chemoprophylaxis and/or immunization. If HCWs immunization not up to date contact OESH /delegate. Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well). Contact site/program ICP or designate.
Pinworms	See Enterobius vermicularis entry							

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Plague (<i>Yersinia pestis</i>)	Bubonic (lymphadenitis)	Routine Practices	*Fleas		1-7 days			*Transmission can occur from infected domestic animals (cats and dogs) through contaminated saliva. Person-to-person transmission is rare. Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well). Contact site/program ICP or designate.
	Pneumonic (cough, fever, hemoptysis)	Droplet	Respiratory secretions	Large droplets	1-7 days	Until 48 hours of appropriate antimicrobial therapy received	Until 48 hours of appropriate antimicrobial therapy received	Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well). Contact site/program ICP or designate. Close contact and exposed HCWs may require prophylaxis; contact OESH .
<i>Pneumocystis jirovecii</i> (carinii)	Pneumonia in immune-compromised host	Routine Practices		Unknown	Unknown			Ensure roommates are not immune compromised.
Poliomyelitis Polioviral fever Infantile paralysis	Fever, aseptic meningitis, flaccid paralysis	Contact	Feces, respiratory secretions	Direct/indirect contact	3-35 days	Virus in the throat for approximately 2 weeks and in feces for 3-6 weeks	Until 6 weeks from onset of symptoms or until feces viral culture negative	Most infectious during the days before and after onset of symptoms. Close contacts who are not immune should receive immunoprophylaxis. Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well). Contact site/program ICP or designate. Community: consider Contact Precautions if client: <ul style="list-style-type: none"> • is incontinent • has stools that cannot be contained • has poor hygiene and may contaminate his/her environment.
Prion disease	See CJD entry							
Psittacosis	See Chlamydia psittaci entry							
Q Fever (<i>Coxiella burnetii</i>)	Pneumonia, fever	Routine Practices *Airborne	Infected animals unpasteurized milk	Direct contact with infected animals; raw milk Airborne from aerosolized contaminated dust or during autopsies	9-30 days May be prolonged when infectious dose is small			Acquired from contact with infected animals or from ingestion of raw milk. Person-to-person transmission is possible, but rarely reported. Contact site/program ICP or designate. *Airborne precautions when performing autopsies on a patient that has died of Q fever.

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Rabies	Acute encephalomyelitis	Routine Practices	Saliva	Mucosal or percutaneous exposure to saliva; corneal, tissue & organ transplant	20-60 days. Varies from few days to years			Acquired from contact with infected animals. Person-to-person transmission is theoretically possible, but not well documented. Post-exposure prophylaxis is recommended for percutaneous or mucosal exposure to saliva of rabid animal or P/R/C. Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well). Contact site/program ICP or designate.
Rat Bite fever <i>Actinobacillus</i> (formerly <i>Streptobacillus</i>) <i>moniliformis</i> ; <i>Spirillum minus</i>	Fever, arthralgia	Routine Practices	Saliva of infected rodents; contaminated milk	Rodent bite, ingestion of contaminated milk	<i>A. moniliformis</i> 3-10 days, rarely longer <i>S. minus</i> 1-3 weeks			No person-to-person transmission. <i>A. moniliformis</i> : rats and other animals, contaminated milk. <i>S. minus</i> : rats, mice only.
Relapsing fever (<i>Borrelia recurrentis</i> , other <i>Borrelia</i> species)	Recurrent fevers	Routine Practices		Vector-borne				No person-to-person transmission. Spread by ticks or lice.
Respiratory Syncytial Virus (RSV)	Respiratory tract infection	Droplet/Contact*	Respiratory secretions	Large droplets, Direct/indirect contact	2-8 days	Shortly before and for the duration of the active disease	*Duration of symptoms	May cohort if infected with same virus. P/R/C should not share room with high-risk roommates. *Discontinue precautions based on resolution of respiratory symptoms (non-ventilated P/R/Cs) or clinical improvement (ventilated P/R/Cs) for 48 hours and not based on duration of treatment or negative laboratory results. Chronic respiratory symptoms or post viral cough do not require maintenance of precautions.
Rhinovirus	Respiratory tract infection, common cold	Acute: Droplet/Contact* Long Term Care: Droplet/Contact* Community: Routine Practices	Respiratory secretions	Direct/indirect contact, possibly large droplets	2-3 days	Until symptoms end	*Duration of symptoms	May cohort if infected with same virus. P/R/C should not share room with high-risk roommates. *Discontinue precautions based on resolution of respiratory symptoms (non-ventilated P/R/Cs) or clinical improvement (ventilated P/R/Cs) for 48 hours and not based on duration of treatment or negative laboratory results. Chronic respiratory symptoms or post viral cough do not require maintenance of precautions.
Rickettsialpox <i>Rickettsia akari</i>	Fever, rash	Routine Practices		Mite-borne	9-14 days			No person-to-person transmission. Transmitted by mouse mites.

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Ringworm	See Tinea entry							
Rocky Mountain Spotted Fever <i>Rickettsia rickettsii</i>	Fever, petechial rash, encephalitis	Routine Practices		Tick-borne	3-14 days			Not transmitted from person-to-person except rarely through transfusion.
Roseola infantum (HHV-6)	Rash, fever	Routine Practices	Saliva	Direct Contact	10 days	Unknown		Transmission requires close direct personnel contact.
Rotavirus	Diarrhea	Acute: Contact* Long Term Care: Contact* Community: Routine Practices**	Feces	Direct/indirect contact (fecal-oral)	1-3 days	Duration of viral shedding	Duration of symptoms	<p>*Consider Contact Precautions for incontinent adults if stool cannot be contained, or for adults with poor hygiene who contaminate their environment.</p> <p>See Enteritis Specific Disease Protocol.</p> <p>**Community: consider Contact Precautions if client:</p> <ul style="list-style-type: none"> • is incontinent • has stools that cannot be contained • has poor hygiene and may contaminate their environment.
Roundworm	See Ascariasis entry							
Rubella Acquired	Fever, maculopapular rash	Droplet	Respiratory secretions	Large droplets, direct contact	14-23 days	For about 1 week before and after onset of rash	Until 7 days after onset of rash	<p>It is recommended only immune HCWs, caretakers and visitors enter the room. Pregnant HCWs should not care for P/R/Cs with rubella, regardless of their immune status. Facial protection (mask and eye protection) required for unknown immune or non-immune persons who must enter the room.</p> <p>Droplet Precautions maintained for exposed susceptible P/R/Cs for 7 days after first contact, through to 23 days after last contact.</p> <p>Administer vaccine to exposed susceptible non-pregnant persons within 3 days of exposure.</p> <p>Exclude susceptible HCWs from duty from day 7 after first exposure, to day 23 after last exposure, regardless of post-exposure vaccination.</p> <p>Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well).</p> <p>Contact site/program ICP or designate.</p> <p>See: Rubella Protocol.</p>

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	Congenital rubella syndrome	Droplet/Contact	Respiratory secretions, urine	Direct/indirect contact; large droplets		Prolonged shedding in respiratory tract and urine; can be up to one year	Until 1 year old, unless nasopharyngeal and urine cultures are negative after 3 months of age	Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate.
Rubeola	See Measles entry							
Salmonella (including <i>Salmonella typhi</i>)	Diarrhea, enteric fever, typhoid fever, food poisoning	Adult/Community: Routine Practices* Pediatric: Contact**	Feces	Direct/indirect contact (fecal-oral) Food borne	6-72 hours <i>Salmonella typhi</i> : 3-60 days	Variable	Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric Precautions apply to children who are incontinent or unable to comply with hygiene. Reportable Disease by lab. Contact site/program ICP or designate.
Sapovirus	See Norovirus entry							
Scabies (<i>Sarcoptes scabiei</i>)	Itchy skin rash	Contact	Mite	Direct/indirect contact	Without previous exposure: 2-6 weeks With previous exposure: 1-4 days	Until mites and eggs destroyed by treatment, usually after 1 or occasionally 2 treatment courses, 1 week apart Norwegian Scabies: Until mites and eggs destroyed by treatment	Until 24 hours after initiation of appropriate therapy. For Norwegian Scabies: Until skin lesions have resolved and skin scrapings are negative	Apply scabicide as directed on label. Wash clothes, and bedding in hot water. Seal all unlaunderable items in plastic bag and store for 1 week. Household contacts and exposed staff should be treated. Contact site/program ICP or designate. See: Scabies Protocol . Community settings should refer to the Community Scabies protocol .
Scarlet fever	See Streptococcus, Group A entry							
Schistosomiasis (bilharziasis) (<i>Schistoma spp.</i>)	Diarrhea, fever, itchy rash, hepatosplenomegaly hematuria	Routine Practices						No person-to-person transmission. Contact with larvae in contaminated water.

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Microorganism, Infectious Disease	Clinical Presentation	Precautions	Infective Material	Route of Transmission	Incubation Period	Period of Communicability	Duration of Precautions	Comments
Sever acute respiratory infection (SARI)	Malaise, myalgia, headache, fever, respiratory symptoms (cough, increasing shortness of breath), pneumonia, ARDS	Enhanced Droplet/ Contact (i.e., Droplet/Contact + Airborne for AGMPs)	Respiratory secretions	Droplet, Direct/indirect contact Aerosols during AGMP	Unknown	Not yet determined		Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well). Contact site/program ICP or designate.
Severe Acute Respiratory Syndrome (SARS) Coronavirus See Middle East Respiratory Syndrome (MERS-CoV)	Malaise, myalgia, headache, fever, respiratory symptoms (cough, increasing shortness of breath), pneumonia, ARDS	Enhanced Droplet/ Contact (i.e., Droplet/Contact + Airborne for AGMPs)	Respiratory secretions, stool	Droplet, Direct/indirect contact Aerosols during AGMP	3-10 days	Not yet determined; suggested to be less than 21 days	10 days following resolution of fever if respiratory symptoms have also resolved	<i>Single room; may cohort if infected with same virus.</i> Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well). Contact site/program ICP or designate.
Shigellosis <i>Shigella spp.</i>	Diarrhea	Adult: Routine Practices* Pediatric: Contact**	Feces	Direct/indirect contact (fecal/oral)	1-7 days	As long as organism present in feces. Usually ceases within one week of onset of illness	Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric Precautions apply to children who are incontinent or unable to comply with hygiene. See Enteritis Specific Disease Protocol Treatment with effective antimicrobial shortens period of infectivity.
Shingles	See varicella zoster entry							
Smallpox (Variola virus) Generalized vaccinia, eczema vaccinatum	Fever, vesicular/pustular in appropriate epidemiologic context	Droplet/Contact and Airborne	Skin lesions, oropharyngeal secretions	Airborne, direct and indirect contact	7-10 days	Onset of mucosal lesions, until all skin lesions have crusted	Until all scabs have crusted and separated (3-4 weeks)	Contact site/program ICP or designate. See Vaccinia entry for management of vaccinated persons. Immunization of HCWs was stopped in 1977. Smallpox has been eradicated, but some stocks have been kept by some countries. Thus, introduction is possible. Care preferably should be provided by immune HCWs. Non-vaccinated HCWs should not provide care if immune HCWs are available. *N95 respirator for all regardless of vaccination status. Reportable Disease by diagnosing healthcare provider (with phone call to MB Health as well). Contact site/program ICP or designate.

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Sporotrichosis <i>Sporothrix Schenkii</i>	Skin lesions, disseminated	Routine Practices			Variable			Rare person-to-person transmission. Acquired from spores in soil, on vegetation.
Staphylococcus aureus (If methicillin-resistant, also see MRSA)	Skin (furuncles, impetigo) wound or burn infection; abscess; scalded skin syndrome, osteomyelitis	Minor: Routine Practices Major: Contact*	Drainage, pus	Direct/indirect contact	Variable	As long as organism is in the exudates or drainage	Until drainage resolved or contained by dressings	*Major: drainage not contained by dressing.
	Endometritis	Routine Practices						
	Food poisoning	Routine Practices		Foodborne				
	Pneumonia	Adult: Routine Practices Pediatric: Droplet	Respiratory secretions	Large droplets, direct contact	Variable		Until 24 hours of appropriate antimicrobial therapy received	
	Toxic shock syndrome	Routine Practices						Contact site/program ICP or designate.
Streptobacillus moniliformis disease	See Rat-bite fever entry							
Streptococcus pneumoniae	Pneumonia, meningitis and other	Adult: Routine Practices Pediatric: For meningitis: Droplet/Contact	Respiratory secretions	Large droplets	Variable			Normal flora.

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Streptococcus, Group A (GAS) <i>(Streptococcus pyogenes)</i>	Skin (e.g., erysipelas, impetigo), wound or burn infection	Minor: Routine Practices Major: Contact*	Drainage, pus	Direct/indirect contact	1-3 days, rarely longer	As long as organism is in drainage	Until 24 hours of appropriate antimicrobial therapy received	*Major = drainage not contained by dressings. Implement Droplet/Contact Precautions when exposure to respiratory droplets is likely.
	Scarlet fever, pharyngitis in children under 5 years	Adult: Routine Practices Pediatric: Droplet/Contact	Respiratory secretions	Large droplets	2-5 days	10-21 days if not treated	Until 24 hours of appropriate antimicrobial therapy received	
	GAS – Endometritis (puerperal fever)	Routine Practices						
	GAS – Toxic shock, invasive disease (including necrotizing fasciitis, myositis, meningitis, pneumonia)	Droplet/ Contact	Respiratory secretions, wound drainage	Large droplets, direct or indirect contact	Unknown, has been as short as 14 hours	7 days before onset of symptoms until 24 hours after appropriate antimicrobial therapy	Until 24 hours of appropriate antimicrobial therapy received	Contact site/program ICP or designate.
Streptococcus Group B <i>(Streptococcus agalactiae)</i>	GBS Newborn sepsis, pneumonia, meningitis	Routine Practices		Mother to child at birth	Early onset 1-7 days of age; late onset 7 days to 3 months of age			Normal flora. Contact site/program ICP or designate.
Strongyloides <i>(Strongyloides stercoralis)</i>	Usually asymptomatic. May cause disseminated disease presenting as gram negative bacteremia meningitis in immune compromised P/R/Cs	Routine Practices	Larvae in feces		Unknown			Rarely transmitted person-to-person. Infective larvae in soil.

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Syphilis (<i>Treponema pallidum</i>)	Genital, skin or mucosal lesions, disseminated disease, neurological or cardiac disease; latent infection	Routine Practices *Gloves for direct contact with skin lesions Neonate: Contact Precautions if lesions present and/or after bath	Genital secretions lesion exudates	Direct contact with infectious exudates or lesions; Sexual transmission, Intrauterine or intrapartum from mother to child	3 days to 3 months; usually 3 weeks	When moist mucocutaneous lesions of primary, secondary and latent syphilis are present	*Neonate: If mother or neonate lesions: Until 24 hours of appropriate antibiotics If no mother or neonate lesions: Until 24 hours of appropriate antibiotics or first bath, whichever comes first	Neonate guidance reference: Red Book 2015 Committee on Infectious Diseases; American Academy of Pediatrics (Reference 5). Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate.
Tapeworm <i>Taenia saginata</i> <i>Taenia solium</i> <i>Diphyllobothrium latum</i>	Usually asymptomatic	Routine Practices	Larvae in food	Foodborne	Variable			No person-to-person transmission. Consumption of larvae in raw or undercooked beef or pork or raw fish; larvae develop into adult tapeworms in gastrointestinal tract. Individuals with <i>T. solium</i> adult tapeworms may transmit cysticercosis to others.
<i>Hymenolepis nana</i>	Usually asymptomatic	Routine Practices	Ova in rodent or human feces	Direct contact (fecal/oral)	2-4 weeks	While ova in feces		
Tetanus <i>Clostridium tetani</i>	Tetanus	Routine Practices		Acquired from spores in soil which germinate in wounds, devitalized tissue	1 day to several months			No person-to-person transmission. Reportable Disease by diagnosing healthcare provider.
Tinea (Dermatophytosis) <i>Trichophyton spp.</i> , <i>Microsporum spp.</i> <i>Malassezia furur</i>	Ringworm (skin, beard, scalp, groin, perineal region); athletes' foot; pityriasis versicolor	Routine Practices	Organism in skin or hair	Direct skin-to skin contact	Variable, 4-14 days	While lesion present		May be acquired from animals, shared combs, brushes, clothing, hats, sheets, shower stalls.
Toxic Shock Syndrome	See Staphylococcus aureus, Group A Streptococcus entry							
Toxocariasis (<i>Toxocara canis, Toxocara cati</i>)	Fever, wheeze, rash, eosinophilia	Routine Practices	Ova in dog/cat feces		Unknown			No person-to-person transmission. Acquired from contact with dogs, cats.

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Toxoplasmosis (<i>Toxoplasma gondii</i>)	Asymptomatic, fever, lymphadenopathy; retinitis, encephalitis in immune-compromised host; congenital infection	Routine Practices	Ingestion contaminated food or water; cat feces	Intrauterine transmission from mother to fetus; transplantation of stem cells or organs	5-23 days			Acquired from contact with infected felines or soil contaminated by felines, consumption of raw meat, contaminated raw vegetable or contaminated water.
Trachoma	See Chlamydia trachomatis entry							
Transmissible spongiform encephalopathy	See Creutzfeldt-Jacob disease entry							
Trench fever (<i>Bartonella quintana</i>)	Relapsing fevers, rash	Routine Practices	Feces of human body lice	Louse-borne	7-30 days			No person-to-person transmission in absence of lice.
Trichinosis (<i>Trichinella spiralis</i>)	Fever, rash, diarrhea	Routine Practices	Infected meat	Food-borne	5-45 days			No person-to-person transmission. Acquired from consumption of infected meat.
Trichomoniasis (<i>Trichomonas vaginalis</i>)	Vaginitis	Routine Practices		Sexually transmitted	4-20 days	Duration of infection		
Trichuriasis (whipworm) (<i>Trichuris trichiura</i>)	Abdominal pain diarrhea	Routine Practices			Unknown			No person-to-person transmission. Ova must hatch in soil to be infective.
Tuberculosis	See Mycobacterium tuberculosis entry							
Tularemia (<i>Francisella tularensis</i>)	Fever, lymphadenopathy pneumonia	Routine Practices		Arthropod bites Direct contact with infected animals Foodborne Inhalation with infected aerosols	1-21 days			No person-to-person transmission. Acquired from contact with infected animals. <i>F. tularensis</i> is hazardous to laboratory workers. Notify laboratory if diagnosis is suspected. Contact site/program ICP or designate.
Typhoid/ paratyphoid fever	See Salmonella entry							

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Typhus fever <i>(Rickettsia typhi)</i> Endemic flea-borne typhus <i>(Rickettsia prowazekii)</i> Epidemic Louse- Borne Fever	Fever, rash	Routine Practices	Rat fleas	Flea borne	From 1-2 weeks, commonly 12 days			No person-to-person transmission.
	Fever, rash	Routine Practices	Human body louse	Louse borne	1-2 weeks			Person-to-person through close personal contact, not transmitted in absence of louse.
Vaccinia	Range of adverse reactions to smallpox vaccine (e.g., eczema vaccination, generalized or progressive)	Airborne/Contact	Skin exudate	Direct/indirect contact	3-5 days	Until all skin lesions resolved and scabs separated	Until all skin lesions resolved and scabs separated	Vaccinia may be spread by touching a vaccination site before it has healed or by touching bandages or clothing that may have been contaminated with live virus from the smallpox vaccination site. Immunization of health care workers was stopped in 1977.
Vancomycin-Intermediate Staphylococcus aureus (VISA)	Infection or colonization of any body site	Acute: Containment Long Term Care: Routine Practices* Community: Routine Practices**	Infected or colonized secretions, excretions	Direct/indirect contact	Variable	Duration of colonization	As directed by ICP	Laboratory reporting to Public Health. Contact site/program ICP or designate. *When asymptomatic, precautions are not required in long term care, prehospital and home care. Community: Consider contact precautions where invasive procedures are performed (e.g., CIVP, wound care clinics).
Vancomycin- resistant enterococci (VRE)	Infection or colonization of any body site	Routine	Infected or colonized secretions, excretions	Direct/indirect contact	Variable	Duration of colonization	As directed by ICP	
Linezolid Resistant Vancomycin-resistant enterococci (LR-VRE)	Infection or colonization of any body site	Acute: Containment Long Term Care: Routine Practices* Community: Routine Practices**	Infected or colonized secretions, excretions	Direct/indirect contact	Variable	Duration of colonization	As directed by ICP	Contact site/program ICP or designate. *When asymptomatic, precautions are not required in long term care, prehospital and home care. **Community: Consider contact precautions where invasive procedures are performed (e.g., CIVP, wound care clinics).

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Vancomycin-resistant <i>Staphylococcus aureus</i> (VRSA)	Infection or colonization of any body site	Acute: Containment Long Term Care: Routine Practices* Community: Routine Practices**	Infected or colonized secretions, excretions	Direct/indirect contact	Variable	Duration of colonization	As directed by ICP	Laboratory reporting to Public Health. Contact site/program ICP or designate. *When asymptomatic, precautions are not required in long term care, prehospital and home care. **Community: Consider contact precautions where invasive procedures are performed (e.g., CIVP, wound care clinics).
Varicella-zoster virus Chickenpox (Varicella)	Fever with vesicular rash	Airborne/Contact	Skin lesions drainage, respiratory secretions	Airborne, Direct/indirect contact	10-21 days*	1-2 days before rash and until skin lesions have crusted. May be longer if immune-compromised	Until all lesions have crusted and dried	HCWS, roommates and caregivers should be immune to chickenpox. N95 respirator required for unknown or non-immune persons who must enter the room. Susceptible high-risk contacts should receive varicella zoster immunoglobulin as soon as possible, latest within 96 hours of exposure. *Varicella zoster immunoglobulin may extend the incubation period to 28 days. <u>Newborns</u> : Airborne Precautions should be taken with neonates born to mothers with varicella onset less than 5 days before delivery. Prevent exposures of susceptible person and immunosuppressed P/R/C. See: Varicella-Zoster Virus (Chickenpox and Shingles) Protocol .
Herpes zoster (shingles), Localized- (covered) Normal host	Vesicular skin lesions in dermatomal distribution	Routine Practices	Vesicle fluid	Direct and indirect contact	Not applicable	Not applicable	Not applicable	HCWs, roommates and caregivers should be immune to chickenpox. Exercise care when handling dressing, clothing and other materials that may be contaminated with vesicular fluid.
Herpes zoster (shingles) Localized (not covered)* Normal Host	Vesicular skin lesions in dermatomal distributions	Contact	Vesicle fluid	Direct and indirect contact		Until all lesions have crusted and dried	Until all lesions have crusted and dried	*Would only occur in rare circumstances. HCWs, roommates and caregivers should be immune to chickenpox. Exercise care when handling dressing, clothing and other materials that may be contaminated with vesicular fluid.

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Herpes zoster (shingles) Localized Immuno-compromised host	Vesicular skin lesions in dermatomal distribution	Airborne/Contact	Vesicle fluid	Airborne, direct and indirect contact		Until all lesions crusted and dried AND disseminated infection is ruled out	Until all lesions have crusted AND 24 hours after antiviral therapy started; Then per localized zoster in immune competent host ⁹	<p>Localized zoster may disseminate in immunocompromised host if not treated. HCWs, roommates and caregivers should be immune to chickenpox.</p> <p>N95 respirator required for unknown immune or non-immune persons who must enter the room.</p> <p>Susceptible high-risk contact should receive varicella zoster immunoglobulin as soon as possible, latest within 96 hours of exposure.</p> <p>Varicella zoster immunoglobulin may extend the incubation period to 28 days.</p>
Herpes zoster (shingles) Disseminated	Vesicular skin lesions in more than 2 dermatomes	Airborne/Contact	Vesicle fluid	Airborne, direct and indirect contact		Until all lesions crusted and dried	Until all lesions have crusted and dried	
Varicella or herpes zoster Susceptible contact	Susceptible contact: No history of varicella illness or immunization with VZV vaccine or IgG antibodies and exposed to a person with chickenpox or disseminated zoster	Airborne	Respiratory secretions	Airborne	10-21 days	Potentially communicable during last 2 days of incubation period May be prolonged if immune-compromised	8 days after first contact until 21 days after last contact with rash regardless of post-exposure vaccination (28 days if given varicella zoster immune-globulin)	<p>Airborne Precautions should be taken with neonates born to mother with varicella onset less than 5 days before delivery. Prevent exposure of susceptible persons and immunosuppressed P/R/Cs.</p> <p>HCWs, roommates and caregivers should be immune to chickenpox.</p> <p>N95 respiratory required for unknown immune or non-immune persons who must enter the room.</p> <p>Susceptible high-risk contact should receive varicella zoster immunoglobulin as soon as possible, latest within 96 hours of exposure. Varicella zoster immunoglobulin may extend the incubation period to 28 days.</p>
Variola	See Smallpox							
Vibrio parahaemolyticus enteritis	Diarrhea, food poisoning	Routine Practices	Contaminated food, especially seafood	Foodborne	Between 12 and 24 hours; range from 4-30 hours			See Enteritis Specific Disease Protocol .
Vincent's angina (trench mouth)		Routine Practices						

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Viral hemorrhagic fevers Lassa, Marburg, Crimean-Congo viruses, Ebola	Hemorrhagic fever	Enhanced Droplet/Contact plus additional measures for High Consequence Pathogens	Blood and bloody body fluids, respiratory secretions Lassa: also urine Ebola: also skin	Direct/indirect contact Possibly Airborne if pneumonia Ebola, Lassa: Sexual contact	Lassa: 1-3 weeks Ebola: 2-21 days	Unknown, possibly several weeks Lassa virus may be excreted in urine for 3-9 weeks after onset	Until symptoms resolve	Notify local public health authorities immediately. Contact site/program ICP or designate. Reportable Disease: See WRHA Reporting of a Communicable Disease to Manitoba Health by Infection Prevention & Control in Hospitals Operational Directives (with phone call to MB Health as well). For Ebola Suspects or Cases, see High Consequence Pathogen Resources .
West Nile (Neurological Syndrome, Non-neurological syndrome, asymptomatic)	Meningitis, encephalitis, paralysis and tremors	Routine Practices		Vector-borne	2-21 days			No person-to-person transmission except by blood transfusion or tissue/organ donation. Demonstrated in utero and can be transmitted by breastfeeding.
Whipworm	See Trichuriasis entry							
Whooping Cough	See Pertussis entry							
<i>Yersinia enterocolitica</i>; <i>Y. pseudotuberculosis</i>	Diarrhea, mesenteric adenitis	Adult/Community: Routine Practices* Pediatric: Contact**	Feces	Direct/indirect contact (fecal/oral; foodborne)	4-6 days, range one to 14 days	Duration of excretion in stool	Duration of symptoms	*Consider Contact Precautions for incontinent adults if stool cannot be contained or for adults with poor hygiene who contaminate their environment. **Pediatric Precautions apply to children who are incontinent or unable to comply with hygiene.
Yellow Fever ^[7]	Fever, chills, severe headache, back and body aches, nausea, vomiting, fatigue, weakness, hemorrhagic fever	Routine Practices	Blood, tissues	Vector-borne (spread by mosquitoes)	Typically, 3-6 days	Not person-to-person except rarely by blood transfusion or organ transplantation		Also see Arboviruses entry. Reportable Disease by diagnosing healthcare provider. Contact site/program ICP or designate. Endemic in tropical areas of Africa and Central and South America. Occasionally travelers who visit yellow fever endemic countries may bring the disease to countries free from yellow fever.

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Zika Virus	Fever, rash, headache, conjunctivitis and joint pain	Routine Practices	Semen, vaginal fluids, blood cells, tissues and organs of infected individuals	Vector-borne (spread by mosquitoes), trans-placental from mother to fetus, blood/blood production transfusion, donated tissue	3-14 days	3-21 days after onset of symptoms		<p>Transmitted primarily through the bite of infected mosquitos.</p> <p>Mother to child transmission, transmission by transfusion of infected blood and sexual transmission has occurred. Pregnant women are advised to avoid travel to areas with current Zika virus outbreaks or areas of risk of outbreaks.</p> <p>Infants born to infected mothers can have Congenital Zika Syndrome.</p> <p>Donors with a history of travel outside of Canada, the continental United States and Europe will be required to wait 21 days following their return before donating blood or blood products.</p>
Zoster	See Varicella (herpes zoster) entry							
Zygomycosis (Phycomycosis)	See Mucormycosis entry							

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