

Agent	Usual Incubation Period (Range)	Symptom Profile	Period of Communicability	Mode of Transmission	Reservoirs	Criteria for confirmation
						Type and amount of specimens; handling requirements for shipping to OSPHL*
Agents typified by fever ≥100°F with cough and systemic symptoms (chills, headache, myalgia, malaise, anorexia)						
2009 H1N1 influenza	1-7 days (Usually 1-4)	cough, coryza, myalgia, often fever, prostration; vomiting, diarrhea in ~25%	1 day prior to symptom onset (maybe), then for 7 days	oral contact or droplets; maybe via aerosol or contaminated surfaces	Humans, although pigs are possible	<p>positive RT-PCR w/ consistent symptom profile</p> <p>preferred: nasopharyngeal swab, nasal aspirate. acceptable: oropharyngeal swab, nasal swab, throat wash, sputum</p> <p>use swab with synthetic tip and aluminum or plastic shaft (no wood, cotton, or calcium alginate).</p> <p>place specimen in sterile viral transport medium and immediately place on ice or refrigerate at 4°C for transport.</p>
Influenza (A, B, C)	1-3 days	fever, cough, coryza, myalgia, prostration vomiting, diarrhea in children	3-7 days	mostly droplet; maybe via aerosol or contaminated surfaces	Humans, but transmission of novel viruses from birds & various mammals is possible	<p>positive rapid test (sensitivity 50-70%), RT-PCR or isolation of virus on culture</p> <p>preferred: nasopharyngeal swab, nasal wash, nasal aspirate. acceptable: oropharyngeal swab, nasal swab, throat wash, sputum</p>
Adenovirus (several serotypes. Adeno 14 circulates in Oregon and has caused several outbreaks.)	2-14 days	Depending on serotype, can present as sore throat, "croup" with runny nose in kids; serotype 14 commonly causes fever, cough, headache, muscle aches; occurs any time of year.	"shortly" before onset & for duration of symptoms	Respiratory droplets, can be fecal/oral.	Humans	<p>PCR testing for adenovirus and specifically for adenovirus serotype 14 are available.</p> <p>preferred: nasopharyngeal plus throat swabs</p> <p>acceptable: sputum and bronchial lavage specimens</p> <p>ship cold (not frozen) in viral transport medium</p>

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<i>Haemophilus influenzae</i>	Unknown	Abrupt onset fever, anorexia, vomiting, cough. Headache, stupor suggest meningitis.	As long as organism is present in discharges from nose or throat. Exposure >7 days before symptom onset in case imparts low risk. Hib cases most infectious during the 3 days prior to sx onset.	Droplet	Humans	Culture of <i>H. flu</i> from a normally sterile site. Hospital/clinic will send sample to OSPHL.
Human metapneumovirus	2-8 days	Runs the gamut from mild URI to severe pneumonia, the latter more common in the elderly	Not well defined	Droplet, Contact	Humans	Viral culture or either RT-PCR or IFA of cell supernatant. Nasal swab and oropharyngeal swab sent together in vial of viral transport medium; ship cold (not frozen).
<i>Streptococcus pneumoniae</i> (<i>Pneumococcus</i>)	1-3 days	Productive cough, fever/chills, shortness of breath. People look sick! Often follows viral infection.	Unknown	Droplet	Humans	Isolation on culture from sputum, though this can be difficult. Characteristic gram positive diplococci on gram stain of sputum is suggestive. Will be obtained in hospital.
Coronavirus Sudden Acute Respiratory Syndrome (SARS)	2-10 days	Fever, cough, rapidly progressing shortness of breath. CXR consistent with pneumonia or acute respiratory distress syndrome. Can also present with milder disease.	Poorly defined; may be up to 21 days.	Droplet, contact	Humans, Civets (not many around!)	Viral culture or PCR. Visualization of characteristic virus on electron microscopy. Detection of viral antigens an immuno-histochemistry. Not something we'll be collecting.

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<i>Legionella pneumophila</i> Legionellosis Legionnaires Disease Pontiac Fever	5-6 days	fever, non-productive cough, systemic symptoms at onset	Not communicable	aspiration of contaminated water droplets	Water systems (potable, air conditioning, spas)	Positive urine antigen or isolation on culture of respiratory secretions (culture for legionella must be specifically requested). In some cases, direct fluorescent antibody staining or paired serologies may confirm diagnosis. Note: these tests aren't available at OSPHL.
						Urine sample (in fluid-tight container) and swab of respiratory secretions, or pleural fluid.
Agents associated with severe disease in infants & children						
<i>Bordetella pertussis</i> whooping cough pertussis	7-10 days	paroxysmal coughing w/ whoop & vomiting	highly contagious during 1st week of symptoms negligible after 5 days of treatment	Respiratory droplets or direct contact w/ respiratory secretions	Humans	See Pertussis investigative guideline.
						Ditto.
Respiratory syncytial virus (RSV)	Often 2 days (1-8 d)	In infants, croup w barking cough/wheezing/inspiratory stridor; Older kids/adults have URI, cough; "season" is Oct.-May	1-5 days after onset; longer (weeks) in infants	Droplet, Contact	Humans, rarely chimpanzees.	RT-PCR, rapid antigen test, viral isolation

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Agents associated with exposure to animals or animal settings (kennels, aviaries, abattoirs, laboratories, etc)						
<i>Bacillus anthracis</i> inhalational anthrax	1-7 days (1-60 days)	fever, malaise, mild cough, shortness of breath, headache, chills; <u>then</u> abrupt onset of sweats, spiking fever, ARDS & shock; mediastinal widening, pleural effusions on CXR	not communicable	inhaling aerosols from tissues, hair, wool, hides of ill herbivores	herbivores (cattle, goats, sheep, bison, etc) potential bioterrorism agent	Isolation by culture of <i>B. anthracis</i> from sputum or pure culture At least two (+) supportive tests of serum, such as PCR, time-resolved fluorescent antibody testing (TFR), direct fluorescent antibody (DFA) and Gram stains Ship <u>sputum specimen or pure isolates</u> to OSPHL with OSPHL form 60, <i>General Microbiology Request Form</i> , available from OSPHL at 503-693-4100.
<i>Brucella</i> species brucellosis	2-3 weeks (5-60 days)	fever, headache, weakness, sweating, chills, arthralgia, myalgia, pneumonia, anemia, thrombocytopenia, leukopenia	not communicable	contact thru broken skin w/ infected animal tissues, blood, urine, vaginal discharges, aborted fetuses & placentas; drinking raw milk	cattle, goats, sheep, bison raw milk products potential bioterrorism agent	Isolation by culture of <i>Brucella</i> species from blood, bone marrow or other tissues, or from discharges; at least two (+) supportive tests of serum, such as PCR, direct fluorescent antibody (DFA) and Gram stains. Ship <u>pure cultures only</u> to OSPHL with OSPHL form 60, <i>General Microbiology Request Form</i> , available from OSPHL at 503-693-4100. Ship 1-2 ml serum or 5-7 ml clotted blood, paired sera for diagnosis or single convalescent serum to "rule out" to OSPHL with OSPHL form 42, <i>Virology/Immunology Request</i> , also available through OSPHL at number above.
<i>Chlamydia psittaci</i> psittacosis	10 days (4-15 days)	acute onset fever, chills, headache, myalgia, rash, pneumonia w/o	Minimal risk. Theoretically possible during paroxysmal	inhalation of desiccated bird feces, feathers, dust	psittacine birds (parrots, parakeets, love birds), pigeons and some poultry	4-fold rise in psittacosis complement-fixing antibody titre (to $\geq 1:32$) in specimens obtained > 2 wks apart Birds in the household should be tested by PCR (see your vet)

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		cough. CXR with lobar consolidation, patchy infiltrates	coughing		(primarily turkeys & ducks; not much in chickens)	Antigen testing is not available at OSPHL.
<i>Coxiella burnetii</i> Q fever	2- 4 weeks	sudden onset fever, chills, headache, weakness, malaise, severe sweats, cough mild or absent	not communicable	inhalation of <i>Coxiellae</i> -contaminated dust; tick bite direct contact w/ infected animals	cattle, sheep, goats animal products of conception raw milk products	Bacterial agglutination assay (titer <1:20 is negative) Ship 1-2 ml serum or 5-7 ml clotted blood, paired sera for diagnosis or single convalescent serum to "rule out" to OSPHL with OSPHL form 42, <i>Virology/Immunology Request</i> , available from OSPHL at 503-693-4100.
<i>Francisella tularensis</i> tularemia	3-5 days (1 - 21 days)	rapid onset high fever, chills, fatigue, pleuritic chest pain, dyspnea, lymphadenopathy, myalgia, headache, malaise, mild cough; <u>then</u> pneumonia, ARDS	not communicable	inhaling infectious aerosols and contaminated dust generated while handling hides, carcasses, contaminated grain animal bite, insect bite	lagomorphs (rabbits, hares, etc), rodents, hard ticks, biting flies potential bioterrorism agent	Isolation by culture of <i>F. tularensis</i> from sputum At least two (+) supportive tests of serum, such as PCR, Direct Fluorescent antibody (DFA) and Gram stains Ship <u>sputum specimen or pure isolates</u> to OSPHL with OSPHL form 60, <i>General Microbiology Request Form</i> (oregon.gov/DHS/ph/phl/docs/75.pdf). CONSULT OSPHL PRIOR TO SHIPPING—THIS IS A VERY DANGEROUS BUG. Ship 1-2 ml serum or 5-7 ml clotted blood, paired sera for diagnosis or single convalescent serum obtained > 2 wks after symptom onset to "rule out" with OSPHL form 42, <i>Virology/Immunology Request</i> , available from OSPHL at 503-693-4100.

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Hantavirus hantavirus pulmonary syndrome	2-4 weeks	fever, myalgia, GI pain; <u>then</u> abrupt onset ARDS, sepsis thrombocytopenia leukocytes, hemoconcentration; interstitial lymphocyte infiltrates, alveolar pulmonary edema	rare person-to-person transmission	inhaling aerosolized rodent excreta	rodents	Four-fold rise in hantavirus EIA (reactive or not) test IgM and IgG; draw one sample acutely and, if negative, a specimens no sooner than 15 days from symptom onset & convalescent 2 weeks after acute specimen Not something we'll have to collect and ship.

<i>Leptospira</i> spp. Leptospirosis Weil's disease (icteric)	1-2 weeks	sudden onset fever, headache, chills, myalgia in legs & conjunctival suffusion; <u>then</u> pneumonia, hemoptysis, ARDS	rare person-to-person transmission	Contact with or ingestion	rodents, livestock, dogs, amphibians, reptiles; animal products of conception or urine; contaminated water, soil, mud	Indirect hemo agglutination (titer) Ship 1-2 ml serum or 5-7 ml clotted blood, paired sera for diagnosis or single convalescent serum to "rule out" to OSPHL with OSPHL form 42, <i>Virology/Immunology Request</i> , available from OSPHL at 503-693-4100.
<i>Yersinia pestis</i> pneumonic plague	2-4 days (1-7 days)	acute-onset of fever, chills, headache, malaise & myalgias; <u>then</u> cough w/ bloody sputum, pneumonia, ARDS, circulatory collapse & death	from onset of symptoms, usually w/in 24-48 hrs of exposure, until done w 72 hrs of appropriate antibiotics	person-to-person transmission via respiratory droplets aerosol (bioterrorism)	fleas, wild rodents (rats, squirrels, prairie dogs), pets with fleas potential bioterrorism agent	Isolation by culture from a sputum specimen Four-fold rise in serum antibody titer to <i>Y. pestis</i> F1 antigen in acute & convalescent serum specimens Antibody titer of $\geq 1:128$ to <i>Y. pestis</i> F1 antigen not explained by past infection or vaccination

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Other Pathogens						
<i>Mycobacterium tuberculosis</i>	2-10 wks to positive skin test; 2-6 wks for quantiferon conversion; months to years for symptomatic illness	Classically cough, blood in sputum, fever, night sweats.	As long as viable bacilli are in sputum; typically 2-4 wks on effective therapy will eliminate risk of transmission	Aerosol	Humans, rarely other primates	See TB Guidelines: www.oregon.gov/DHS/ph/tb/index.shtml
<i>Mycoplasma pneumoniae</i>	2-4 weeks	URI possible with cough/congestion Sub-acute "Walking pneumonia" in ~10% w usually non-productive cough/fever.	Unclear. Perhaps 1en or more days after onset.	Droplet	Humans	Isolation on culture is not that easy. PCR may be helpful, and a fourfold rise in complement fixation antibody titers an samples collected 4 wks apart. PCR and culture can be done on oropharyngeal or nasopharyngeal swabs. Not done at OSPHL.
Parainfluenza virus types 1-4	Often ~2 days (0.5-7 d)	URIs, to croup in kids (barking cough or hoarseness); pneumonia with immunocompromise	1 day before to 5 days after sx onset.	Droplet, Contact	Humans	Isolation on culture Throat wash or swab collected within 3 days of sx onset and shipped unfrozen in viral transport media.

Update Log

Oct. 2010. Original posted

Apr. 2012. Contact information for OSPHL and availability of testing at OSPHL updated.