Infectious diseases at a glance

Dr Peter Riley outlines key features, diagnostic pathways and possible complications for a variety of infectious diseases

	Incubation period and infectivity	Key features	Features of rash	Confirming diagnosis (use clinical features, plus the following if required)	Complications	Keep from school/ work?	Implications in pregnancy * See PHE guidance on viral rash in pregnancy	Notifiable?
Slapped cheek syndrome, fifth disease (parvovirus B19 infection)	Probably 14 to 21 days (infectious for 10 days before days of onset of rash)	Common in young school-aged children. By adolescence 50% will have been infected. Most infections are not symptomatic	Fever may occur before onset of rash, 'slapped cheek' distribution more common in children. Rash may come and go	Can be confirmed by demonstrating IgM antibodies or IgG seroconversion in blood	Symmetrical small-joint arthritis in adults may be prolonged. Aplastic crisis in those with haemoglobinopathies such as sickle-cell disease or the immunocompromised	No need once rash has started	May cause miscarriage in first 20 weeks. Foetal hydrops can be treated. If pregnant woman is exposed, assess immunity by testing for parvovirus B19 IgG antibodies*	No
Chickenpox (varicella zoster virus)	10 to 21 days. Infectious from 48 hours before onset of rash and until last vesicle has crusted	One to two days of fever and malaise (may be absent in children) followed by development of rash	Initially macular, developing into papules and then vesicles, which then crust over. Cropping occurs so spots are not all at the same stage. Distributed mostly on face and trunk	Many labs now offer varicella zoster virus DNA testing of a vesicle swab	Secondary bacterial infection of skin may occur, especially group A streptococcus. Severe infection in immunocompromised. Pneumonitis in adults, especially pregnant women. Advisable to treat all adults. After exposure in susceptible contacts, infection can be attenuated or prevented with varicella zoster immunoglobulin (VZIG) or aciclovir	Until last vesicle has crusted over	May lead to congenital varicella syndrome in first 20 weeks or severe infection in the mother after 20 weeks. Risk of neonatal varicella zoster if peripartum infection. Can be prevented or attenuated with VZIG or aciclovir. If pregnant woman is exposed, contact local lab to test for VZV IgG antibodies*	No
Shingles (varicella zoster virus)	Reactivation of latent infection. Can cause chickenpox, but not shingles. Infectious from onset of rash until last vesicle has crusted	Localised pain before development of vesicular rash	Rash similar to chickenpox but confined to a single dermatome	Many labs now offer varicella-zoster virus DNA testing of a vesicle swab	Secondary bacterial infection. Severe disease in immunocompromised. Postherpetic neuralgia – risk of development may be reduced by early treatment	Only exclude if rash has not crusted and cannot be covered	None if pregnant woman has shingles. If exposed to shingles, assess immunity as may be at risk of developing chickenpox	No
Hand, foot and mouth (Coxsackie virus and other enteroviruses)	Three to seven days. Probably infectious from time of onset of symptoms. Infectivity low once clinically recovered, although virus may be shed in stool for many days	Short prodrome with fever, malaise and sore mouth	Oral lesions are macular but ulcerate quickly. Cutaneous maculovesicular lesions on hands, feet and buttocks. Usually resolve within seven days	Enteroviral RNA may be detected on skin swabs, throat swabs or faeces or rectal swab	Complications are rare but enteroviruses may rarely cause myocarditis or encephalitis	Not normally	Very rarely may cause miscarriage due to viraemia and high fever in mother	No
Measles	Seven to 18 days (average 10 to 12 days). Infectious four days before the rash until four days after the rash	Three to seven days of fever, conjunctivitis, coryza and cough followed by rash. Koplik's spots on buccal mucosa can be seen later in the prodrome and may be present for one or two days with the rash. More severe in infants and adults. Diarrhoea may also be seen	A blotchy erythematous maculopapular rash that starts on the face and spreads to the trunk and limbs over three to four days. Desquamation may occur as the rash resolves	IgM or IgG seroconversion or detection of viral RNA in blood. Oral fluid can also be tested and is often arranged following notification to local public health team	Encephalitis, pneumonitis and otitis media. Rarely, subacute sclerosing panencephalitis. Secondary bacterial infection. Severe disease in infants and immunocompromised – may be prevented or attenuated with human normal immunoglobulin (HNIG) in susceptible contacts at risk of severe disease	Until four days from onset of rash	May cause miscarriage or premature labour. If pregnant woman is exposed, test for measles IgG antibodies to assess need for prophylaxis with HNIG	Yes
Whooping cough (pertussis)	Commonly seven to 10 days (but can be four to 21 days or longer). Infectious from onset of symptoms until completion of an effective antibiotic or 21 days if not treated	An initial catarrhal stage with an irritating cough that develops over one to two weeks into a paroxysmal cough that may last one to two months. Typical whooping may not be seen in adults. Severe disease may be seen in infants, who may have apnoea/cyanosis	None	Bacterial DNA may be detected in pernasal swabs, nasopharyngeal aspirates or throat swabs in first 21 days of illness. This is more sensitive than culture. Later in illness detection of antibodies in blood or saliva	Apnoea, pneumonia, syncope	Until completion of 48 hours of antibiotic or 21 days if not treated	Not to the pregnant woman – but risk of transmission to baby if mother develops infection late in pregnancy. Immunisation in pregnancy provides protection to infant through passively acquired antibodies	Yes
Mumps	14 to 25 days, usually around 17 days. Infectious from seven days before onset of symptoms and for five days after	A few days of fever and malaise followed by bilateral and more rarely unilateral parotid swelling. Asymptomatic infection may occur in children	None	IgM or IgG seroconversion or detection of viral RNA in blood or CSF. Oral fluid can also be tested and is often arranged following notification to local public health team	Orchitis, meningitis, encephalitis and pancreatitis. Infertility after orchitis is rare	Until five days after onset of swelling	Very rarely may cause miscarriage due to viraemia and high fever in mother if occurs early in pregnancy	Yes
Scarlet fever (group A ß-haemolytic streptococcus)	Two to four days. Infectious until clinically recovered or after 24 hours of appropriate antibiotics	Sore throat with fever, malaise and tender cervical lymphadenopathy	Fine punctate erythematous rash with a sandpaper-like feel on neck, chest, elbows and groin and inner thighs. Flushing of cheeks with circumoral pallor and strawberry tongue. Desquamation can occur as rash resolves	Culture of ß-haemolytic group A streptococcus (*S. pyogenes*) from throat swab. Retrospective diagnosis with ASOT or anti-DNase B serology	Ear infection, quinsy and post-infectious complications such as rheumatic fever	Until 24 hours after starting appropriate antibiotics	None – unless occurs peripartum when there may be a risk of neonatal infection	Yes
Rubella	14 to 21 days. Infectious for seven days before onset of rash and until four days after	Low-grade fever for a few days, malaise, coryza and mild conjunctivitis followed by rash. Postauricular and suboccipital lymphadenopathy may precede the rash. Prodromal features may be absent in children	Erythematous maculopapular rash, mostly behind the ears and on the face and neck. Can be transitory	Difficult to diagnose clinically with any certainty. IgM or IgG seroconversion or detection of viral RNA in blood. Oral fluid can also be tested and is often arranged following notification to local public health team	Thrombocytopaenia. Arthritis – more common in female adults. Rarely encephalitis	Until four days from onset of rash	Yes. High risk of congenital rubella syndrome if infection in first 20 weeks	Yes
Roseola infantum – human herpes virus 6 (HHV-6)	Five to 10 days	Probably many asymptomatic infections. Most commonly seen in children under two years. High fever for three to five days	As fever resolves, maculopapular rash appears on the trunk and then spreads to the rest of the body and fades rapidly	Detection of viral DNA in whole blood	Febrile convulsions. Rarely encephalitis	No	None identified	No

Pulse March 2019

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Glandular fever (infectious mononucleosis)	Depends on cause but three to six weeks. Consider Epstein-Barr virus (EBV) but also cytomegalovirus (CMV) and toxoplasmosis	Fever, malaise, sore throat, cervical lymphadenopathy. Splenomegaly seen commonly with EBV. Asymptomatic infections may occur with EBV, CMV and toxoplasmosis	Erythema may be seen especially if aminopenicillin antibiotics are given with EBV infection	Demonstration of specific IgM antibodies in blood and also detection of heterophile antibody for EBV infection	Usually self-limiting. Reactivation of EBV, CMV and toxoplasma may be seen in profoundly immunosuppressed individuals	No	None for EBV. Risk of congenital infection with CMV or toxoplasmosis. Contact local microbiologist for specialist advice	No
Impetigo	Variable but usually four to 10 days. Infectious while lesions present	Non-bullous impetigo can be caused by *Staphylococcus aureus* (including MRSA) or Group A ß-haemolytic streptococcus. Bullous impetigo seen more commonly in neonates	Usually starts as single erythematous macules that vesiculate and rupture and then dry with a golden crust. Spreads locally or to other sites. May occur after trauma and after chickenpox. Common on face but may occur anywhere	Clinical appearance and bacterial culture of lesion	Rarely invasive infection including bloodstream infection. Post-streptococcal glomerulonephritis	Until lesions are healed or after 48 hours of appropriate antibiotics	None	No
Furunculosis including PVL-positive *S. aureus*	Variable. Infectious while lesions present	Caused by *S. aureus* (including MRSA). Clusters of PVL-positive *S. aureus* have been seen in households, gyms and contact sports players	Single or multiple boils. If recurrent consider PVL-positive *S. aureus*	Bacterial culture from lesion. Nose swab if screening for PVL-staph carriage	If PVL-positive *S. aureus,* risk of invasive infection including necrotising pneumonia, necrotising fasciitis and septicaemia	No, if lesions can be covered with a clean dry dressing	None	No, but discuss with local health protection team if MRSA or PVL positive
Dermatophyte infections including ringworm (*Tinea corporis*) and athlete's foot (*T. pedis*)	Four to 14 days	Caused by various dermatophyte fungi	Ringworm – flat, spreading ring-shaped lesions. May be erythematous or vesicular at periphery and can be dry or scaly. Central area may heal as lesion evolves. Athlete's foot – cracking or scaling of skin between toes, sometimes with vesicles	Culture of skin scrapings	Secondary bacterial infection with cellulitis may be seen with athlete's foot	Not usually	None	No
Scabies	Two to six weeks if first infestation. One to four days after re-infestation. Infectious until first treatment	Caused by *Sarcoptes scabei* mites. Intensely itchy, especially at night	Papules, vesicles or linear tracks around finger webs, wrists, elbows, axillary folds, belt line and genitalia (in men). In children, head, neck, palms and soles may be affected	Skin scrapings after mineral oil application may allow microscopic confirmation	Hyperinfestation in immunocompromised individuals. Secondary bacterial infection	Until after first treatment	None	No
Lyme disease	A few days but up to a month	Acquired following bite of an infected tick. Asymptomatic infection may occur. Erythema migrans is commonest acute presentation. Early neuroborreliosis can present with facial nerve palsy	Erythema migrans – an expanding target-like erythematous rash localised around tick bite. Can last for weeks if untreated	Clinical features and serology. Treat all patients with possible erythema migrans and history of tick bite – irrespective of serology results, which may be negative in early infection	Late-stage manifestations in untreated individuals affecting skin, musculoskeletal and nervous systems	No	None	No
Influenza	One to four days but usually within three days. May be infectious for up to 24 hours before symptoms and up to seven days afterwards	Typically fever, headache, myalgia, sore throat and coryza but milder symptoms indistinguishable from other respiratory viral infections may be seen	None	Detection of viral RNA in throat swab	Pneumonia, especially secondary bacterial infection. Rarely encephalitis. Severe disease commoner in elderly, pregnancy, immunocompromised and those with chronic renal, liver, respiratory, cardiac and neurological illness and diabetes. At-risk groups with infection should be treated or offered prophylaxis if exposure to the confirmed case is in their own home or other residential setting	Until clinically better	Higher risk of severe disease in pregnancy. Vaccination should be offered to all pregnant women	No
Gastroenteritis – viral, bacterial and parasites eg cryptosporidium	Variable but usually up to 72 hours for most viral and bacterial causes	Diarrhoea and vomiting. Bloody diarrhoea should raise possibility of *Escherichia coli* O157	None usually	Stool microscopy and culture	Complications from dehydration. Invasive infection in immunocompromised patients. Protracted diarrhoea with cryptosporidium in children or immunocompromised adults	Until 48 hours after last episode of diarrhoea or vomiting. Sometimes longer if *E. coli* O157 confirmed. Two weeks exclusion for swimming if cryptosporidium identified	Rarely peripartum infection may lead to neonatal infection	Yes if from food poisoning or infectious bloody diarrhoea
Hepatitis A	15 to 50, usually 28-30 days. Infectious in latter half of incubation period until seven days after jaundice develops	Rare in the developed world. Many asymptomatic infections especially children. Adults usually have fever, malaise and abdominal discomfort, sometimes with diarrhoea before developing jaundice. Chronic infection does not occur	None	Clinical and biochemical features of hepatitis. Detection of IgM antibodies in blood	Severity increases with age but fulminant hepatitis is rare. Susceptible individuals with household exposure to a confirmed case should be offered prophylaxis with vaccine and additionally HNIG in older patients. Discuss with local public health team	Until seven days after onset of jaundice.	None	Yes

Pulse March 2019

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Hepatitis B	45 to 180 days but usually 60 to 90 days. Infectious weeks before symptoms develop and remains infectious during acute phase and during the chronic infectious state if this develops	Many asymptomatic infections. Insidious onset with malaise, anorexia and abdominal discomfort before development of jaundice	Itchy rash may be seen in acute infection. Other dermatological features may be seen in later chronic infection	In acute infection – clinical and biochemical features of hepatitis. Detection of hepatitis B surface antigen and DNA in blood. Patients with chronic infection may be asymptomatic but will have positive serology	Fulminant hepatitis, chronic infection leading to cirrhosis and hepatocellular cancer. Chronic infection especially likely if infection acquired vertically	Exclude from work in certain situations	Vertical transmission to the baby may occur. This can be prevented with hepatitis B vaccine and hepatitis B immunoglobulin for the baby	Yes – if acute infection
Hepatitis C	Two weeks to six months – average is 45 days. Infectious in acute phase and also in those who develop chronic infection	Malaise, anorexia, jaundice but 75% of patients with acute infection are asymptomatic. Chronic infection occurs in 75% of patients	Lichen planus and cryoglubulinaemia in chronic infection	In acute infection – clinical and biochemical features of hepatitis. Detection of hepatitis C antibodies and viral RNA. Patients with chronic infection may be asymptomatic but will have positive serology	Chronic infection leading to cirrhosis and hepatocellular cancer	No	Vertical transmission to the baby may occur	Yes – if acute infection
Hepatitis E	15 to 60 days – average 40 days. Infectious a few days before clinical illness and possibly for a few weeks after onset of symptoms	A few days' malaise followed by jaundice. Infections may be asymptomatic. Might be travel associated or acquired in the UK	None	Clinical and biochemical features of hepatitis. Detection of IgM antibodies in blood	Chronic infection may occur in immunocompromised patients. Neurological complications such as Guillain-Barré, facial nerve palsy, encephalitis have been reported	First two weeks of clinical illness and for a week after development of jaundice	Fulminant hepatitis can occur in pregnancy. Some evidence of possible vertical transmission	Yes