

In this Issue

Rashes in Childhood due to Infectious Diseases
Page 1–2

Changes to the Primary Childhood Immunisation Programme
Page 3

Infectious Diseases Summary Table
Page 3

Unvaccinated Spanish Child Diagnosed with Diphtheria
Page 4

Immunisation Uptake Table
Page 4

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Data were provided by Waterford Regional Hospital Laboratory, Senior Medical Officers, Communicable Disease Control Nurses, General Practitioners, Hospital Clinicians, Environmental Health Officers, and the STI Clinic.

Rashes in Childhood due to Infectious Diseases

By Dr Jacinta Mulroe, SpR in Public Health Medicine



Measles begins with a prodromal phase of fever, conjunctivitis, coryza, cough and Koplik spots on the buccal mucosa. The rash appears around day 3-4 and is erythematous and maculopapular, it is non-itchy. It begins on the face and behind ears and spreads to trunk and limbs.

Rubella/German measles is usually a mild illness. Slight fever, sore throat and malaise may occur prior to onset of rash. The rash begins on the face as discrete pink macules and spreads to the trunk and limbs.



Scarlet Fever begins with a fever usually accompanied by sore throat and headache. A fine papular red rash that feels like sandpaper develops, lasting 2-5 days. The child will also have a strawberry-looking tongue. As rash fades, peeling/desquamation affects fingers/toes/groin.

Roseola infantum is caused by Herpes Virus 6 or 7, it usually begins with a high fever for 3 days which settles as rash starts. The rash begins on the trunk with small pink macules and papules and spreads to the arms and neck. There is very little on the face or legs.



Hand foot and mouth disease is caused by an enterovirus infection usually coxsackievirus. Ulcerative lesions occur in the oral cavity and can be painful. Small macules/papules appear on hands/feet with a central grey vesicle usually on dorsal surfaces rather than palms and soles.

Scabies is an extremely itchy rash caused by a microscopic mite. Burrows may be seen initially between the fingers. A generalised rash may form later with erythema, papular and urticarial lesions.



Molluscum contagiosum presents as small round papules in warm, moist areas e.g. armpit/groin.

Quick Reference Guide: Rashes in Childhood due to Infection

	Spread	Exclusion Recommendations	Lab testing and timing	Pregnancy
Measles (notifiable)	Highly infectious. Airborne and droplet.	5 days from onset of rash. Public Health may recommend exclusion of unvaccinated siblings or other unvaccinated children attending the same school/crèche.	Oral fluid is the most convenient sample and should be taken as soon as possible post rash onset. It can be tested for measles virus RNA by PCR for up to 5 days post rash onset and for IgM up to 2 months post rash onset. Please specify date of onset of rash on NVRL form. IgM is also detectable in blood samples.	Specialist referral is recommended. Risk of miscarriage, premature labour/delivery and maternal death. Human Normal Immunoglobulin (HNIG) may be needed post-exposure if pregnant woman is non-immune, ideally within 72 hours, but can be given up to 6 days post exposure.
Rubella/German measles (notifiable)	Moderately infectious. Direct contact with respiratory secretions or droplet spread.	7 days from onset of rash and while unwell.	Oral fluid is the most convenient sample and should be taken as soon as possible post rash onset. IgM can be detected up to 2 months post rash onset. Please specify date on onset of rash on NVRL form. IgM is also detectable in blood samples.	Specialist referral is recommended. Risk of congenital rubella syndrome is highest if exposed to rubella in first trimester, defects are rare if exposed after 20 weeks gestation. HNIG is not recommended for the protection of pregnant women exposed to rubella.
Scarlet fever	Direct contact with mucous/saliva, or droplet spread.	Child may return to school/crèche after 24 hours antibiotic treatment.	The diagnosis is usually made clinically. Throat swab is often taken.	There is no evidence to suggest that getting scarlet fever during pregnancy puts the baby at risk.
Roseola infantum	Airborne or droplet spread.	None.	The diagnosis is usually made clinically.	
Ringworm (tinea)	Direct skin-skin contact. Indirect contact via showers/hair brush/clothing.	No exclusion needed once treatment commences.	The diagnosis is usually made clinically, but microscopy and culture of skin scrapings can be carried out.	
Slapped cheek disease/Fifth disease/Erythema infectiosum	Respiratory secretions.	No exclusion required as usually not infectious once rash appears.	Usually not necessary. Blood testing for parvovirus B19, IgG and IgM can be done in certain situations.	Specialist referral is recommended. Increased risk of miscarriage if infected before 20 weeks gestation. Small risk of foetal hydrops.
Chicken pox (notifiable for hospitalised cases only)	Airborne or droplets spread or direct contact with fluid from open sores.	Exclude until scabs are dry, usually 5-7 days from onset of rash.	Clinical diagnosis usually. VZV can be demonstrated in vesicular fluid if necessary. Serology tests can be used to demonstrate immunity.	Referral to specialist required if non-immune: may require HNIG. Increased risks to mother e.g. varicella pneumonia. Risk of congenital varicella syndrome for the foetus especially at <20 weeks gestation. Risk of premature delivery and neonatal chicken pox at later stages.
Hand foot and mouth disease	Direct contact with secretions. Also faecal-oral route (some people can shed the virus in faeces for several weeks).	While the child is unwell they should be excluded from school/crèche. If evidence of transmission within school/crèche, exclusion of students until lesions have healed may be considered.	Clinical diagnosis usually. Viral throat swab, vesicle swab or stool sample may be taken.	Babies born to mothers who have symptoms of enteroviral illness around the time of delivery are more likely to be infected. Neonates usually only have mild infection.
Impetigo	Direct skin-skin contact or indirectly via towels/clothing.	Until lesions are crusted and healed or 24 hours after starting antibiotic treatment.	Clinical diagnosis usually. Cases that are poorly responsive to treatment may be swabbed for culture and sensitivity.	
Molluscum contagiosum	Direct skin-skin contact especially when wet (e.g. swimming).	No exclusion recommended. Avoid direct contact with lesions and cover lesions during communal activities. Do not share towels.	Clinical diagnosis usually.	There are no known risks to the unborn child. However disease may spread peri- or post-partum.
Scabies	Skin-skin contact, generally 5-10 minutes or more.	Child can return to school/crèche after first treatment. Close contacts require treatment even if asymptomatic.	Clinical diagnosis usually.	There are no known adverse effects in pregnancy or to the unborn child.

Changes to the Primary Childhood Immunisation Programme

The primary childhood immunisation schedule has changed for all **babies born on or after July 1st, 2015**. These infants will only need two doses of MenC vaccine, given at 4 and 13 months of age. The reason the schedule has changed is that we now know that two doses give babies as much protection as three doses. The new schedule is shown in the table. A new edition of "Your Child's Immunisation—A Guide for Parents" and new information material for parents have been published (www.immunisation.ie).

New Schedule Children born on or after July 1st 2015	
Age	Immunisations
2 months	6 in 1 and PCV
4 months	6 in 1 and Men C
6 months	6 in 1 and PCV
12 months	MMR and PCV
13 months	MenC and Hib

Babies born before 1st of July 2015 should continue with the old schedule.

Summary of Infectious Diseases Notified Weeks 1– 26, 2015

Disease	Cases ¹	Disease	Cases ¹
Bacterial Meningitis (not otherwise specified)	1	Lyme Disease (Neuroborreliosis)	0
Campylobacter infection	198	Malaria	1
Chickenpox – hospitalised cases	3	Measles	0
Chlamydia trachomatis	361	Meningococcal Disease	4
Clostridium difficile	121	Mumps	192
Cryptosporidiosis	54	Noroviral infection	35
Giardiasis	1	Pertussis	6
Gonorrhoea	38	Rotavirus	522
Haemophilus influenza (invasive)	4	Rubella	1
Hepatitis A (acute)	0	Salmonellosis	14
Hepatitis B acute and chronic	13	Shigellosis	0
Hepatitis C	12	Streptococcus group A (invasive)	4
Herpes Simplex (genital)	66	Streptococcus pneumoniae (invasive)	81
HIV	4	Syphilis	9
Influenza	312	Tuberculosis	8
Legionellosis	0	Verotoxigenic Escherichia coli infection	65
Leptospirosis	0	Viral encephalitis	4
Listeriosis	1	Viral Meningitis	14

¹ Provisional data.

The table above shows cases of infectious diseases notified in the **HSE (SE) area only** under Infectious Disease (Amendment) Regulations 2011 (S.I. No. 452 of 2011). Medical practitioners and clinical directors of diagnostic laboratories are required to transmit a written or electronic notification of a notifiable infectious disease to a Medical Officer of Health. Case definitions for notifiable diseases are available at www.hpsc.ie and notification form booklets are available from regional public health department offices, to which notifications should be returned.

Infectious disease notifications can be phoned to 056 7784142, faxed to 056 7784599 or posted to Public Health Department, HSE South (SE), St. Canice's Hospital, Lacken, Dublin Road, Kilkenny.

Unvaccinated Spanish Child Diagnosed with Diphtheria

Spanish health authorities notified a case of severe respiratory diphtheria in May 2015. The case was a child of six years of age who was unvaccinated due to parental choice. The child had gone to his GP, was prescribed antibiotics but deteriorated and was referred to hospital for additional antibiotic and diphtheria anti-toxin treatment (of which there are limited supplies worldwide). The occurrence of this rare disease and the severity of symptoms in the child highlights the importance of diphtheria vaccination to prevent this life-threatening disease. Due to high vaccination coverage rates in Spain and Europe diphtheria has become a rare disease. Prior to the recent Spanish case the last case of diphtheria was 28 years ago. However, in the 1990s large diphtheria outbreaks were reported in Eastern Europe leading to thousands of cases.

Diphtheria vaccine recommendations

- The diphtheria vaccine is given as part the 6-in-1 vaccine during the primary immunisation programme at 2, 4, and 6 months of age (three doses needed).
- A booster dose is given at 4-5 years of age (part of the 4-in-1 vaccine) and another 2nd booster dose is given in early adolescence (usually first year of secondary school) (part of the 3-in-1 vaccine).
- For adults, additional booster doses may be given every 10 years for life and are recommended for:
 - individuals in contact with a case or carriers of a toxogenic strain,
 - workers who may handle infected material,
 - those working with animals (in combination with tetanus vaccine), and
 - travellers to areas where diphtheria is frequently reported.

Immunisation Uptake for Children at 12 and 24 Months

Local Health Office	% vaccine uptake, Q4 2014					
	BCG ₁	D ₃ [*]		MenC ₃	PCV ₃	MMR ₁
	12 mths	12 mths	24 mths	24 mths	24 mths	24 mths
Carlow - Kilkenny	95	91	95	87	92	94
Tipperary South	97	93	96	89	94	94
Waterford	95	92	96	89	94	94
Wexford	96	94	96	86	91	94
Ireland	88	92	96	88	92	93

*D₃: Three doses of Diphtheria containing vaccine. In this table, uptake of D₃ is indicative of uptake of vaccines contained in the 5 in 1 or 6 in 1 combined vaccine.

