Public Health England

Protecting and improving the nation's health

NHS

Rash illness in pregnancy

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Session outline

- Overview of viral rash illnesses including:

- maternal, fetal and newborn risks

- interventions:

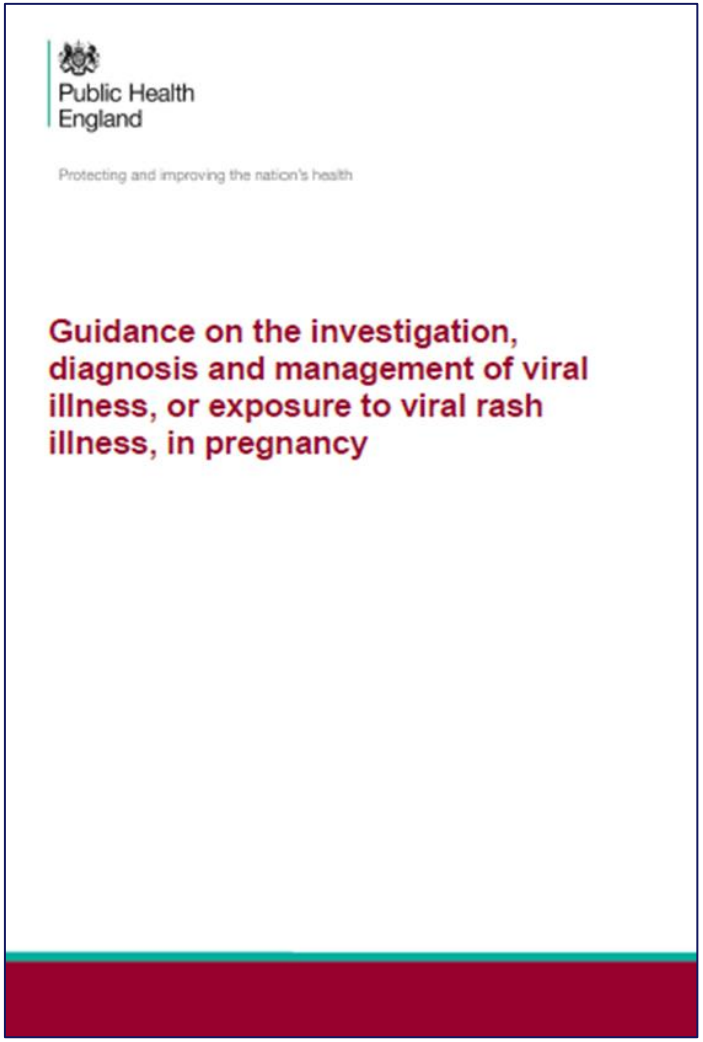
1) at time of rash

2) at exposure

3) prior to exposure

- Chickenpox
- Measles
- Rubella

https://www.gov.uk/government/publications/viral-rash-in-pregnancy



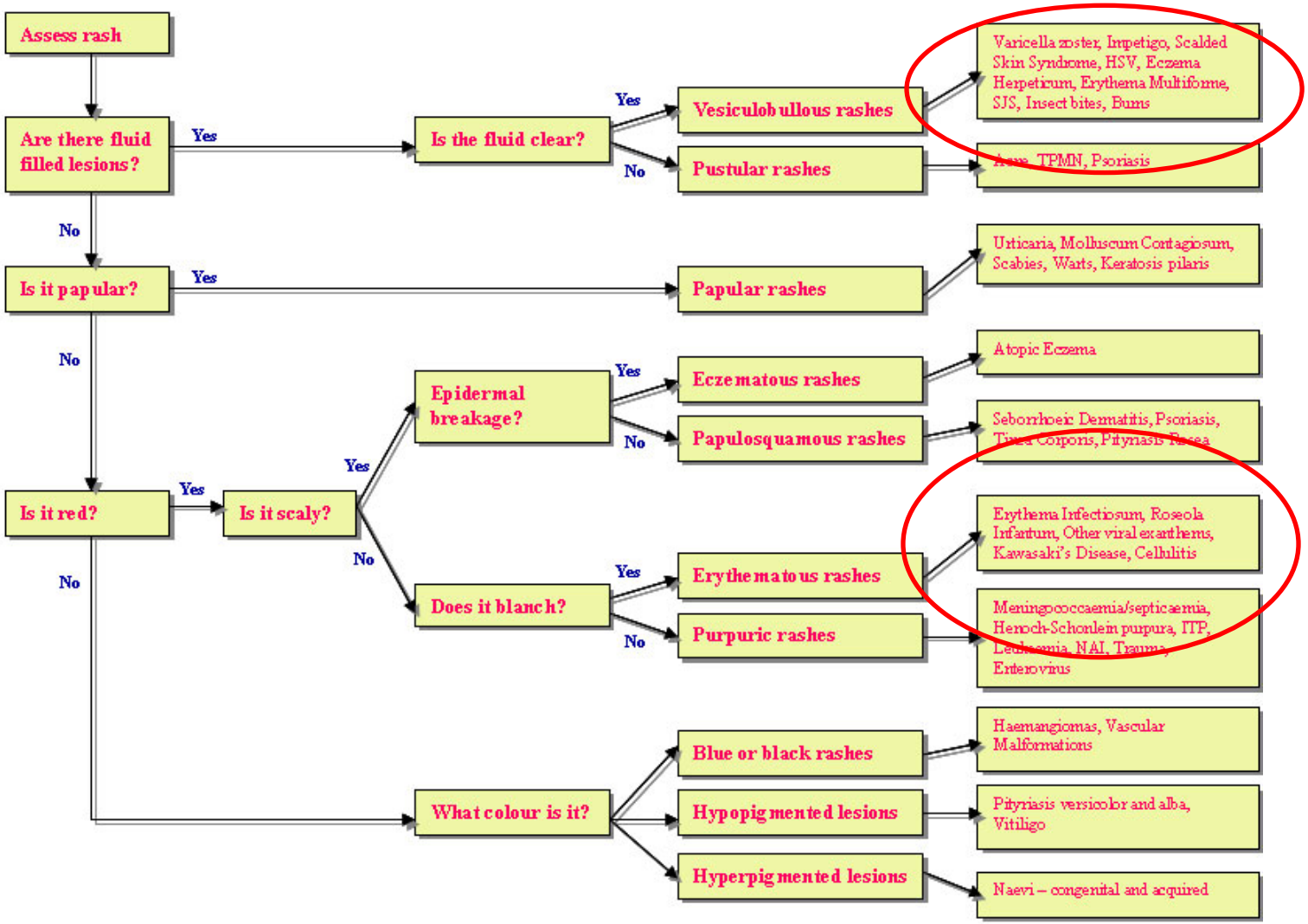
Key Updates in 2019 PHE Guidelines

- Epidemiology of rash illness in pregnancy and their sequelae
- Updated guidance on post exposure prophylaxis (PEP) for measles and chickenpox including

- use of varicella zoster immunoglobulin (VZIG) for women exposed before 20 weeks and use of antivirals for those exposed from 20 weeks

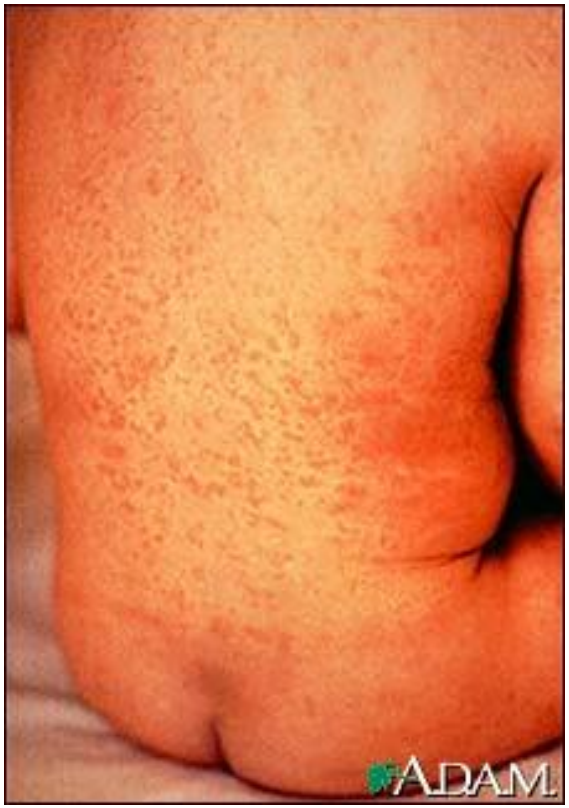
- Update on management of a neonate born to a mother with rubella infection in pregnancy
- Management of inadvertent shingles immunisation in pregnancy

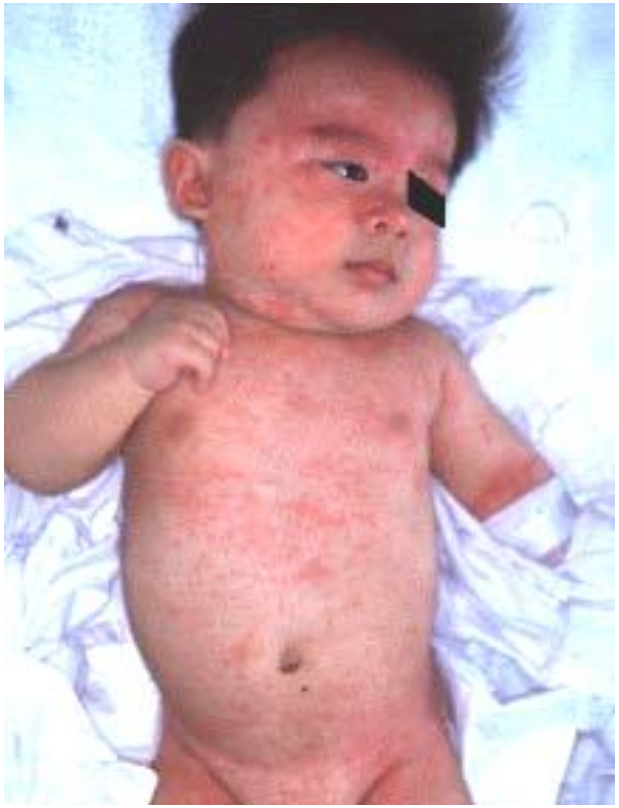
Paediatric skin rashes

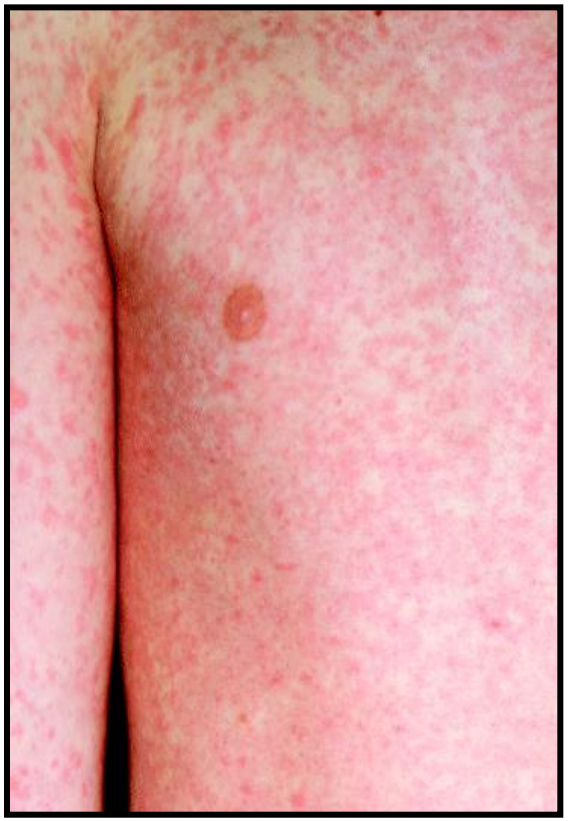


Summary of Paediatric Skin Rashes: adapted by Bonsall MA, from the Paediatric Handbook, Royal Children's Hospital, Melbourne
http://www.patient.co.uk/doctor/Common-Childhood-Rashes.htm

What's causing these fever and rash cases?







Many systemic viral infections may cause rash

- Measles
- Rubella
- Enteroviruses
- Parvovirus B19
- HHV-6
- HSV
- Varicella zoster virus
- CMV/EBV
- HIV
- Pox viruses including variola, monkey pox, small pox
- Viral haemorrhagic fevers
  - Lassa, Marburg, Ebola
- Arthropod-borne viruses
- Flaviviruses e.g. dengue, Koutango, Usutu, West Nile, Omsk, Kyasanur Forest, Al-Khurma, Zika
- Alphaviruses e.g. Ross River virus, Barmah Forest, Chikungunya, Mayaro, O'nyong-nyong, Sindbis,
- Bunyaviruses e.g. Crimean-Congo haemorrhagic fever, Bunyamwera, Bwamba,

Risks in pregnancy

	Chicken pox	Measles	Rubella
% seronegative in young adult females	1.2%-14% (varies by country of origin)	< 5%	7% all women screened antenatally
Infectivity	High	Very high	High
Fetal risk	Congenital infection	Fetal loss / premature delivery	Congenital infection
Neonatal risk	Severe haemorrhagic chicken pox	SSPE	none
Maternal risk	Pneumonitis	Pneumonitis	Arthritis
Intervention (at time of rash)	Anti-virals		Counselling re: continuing with pregnany
Intervention (if contact)	Varicella Zoster Ig (VZIG) / antivirals	Human normal Ig (HNIG)	
Intervention (before pregnancy)	? Vaccine	MMR	MMR

Chicken pox (varicella)

Febrile illness with a vesicular rash

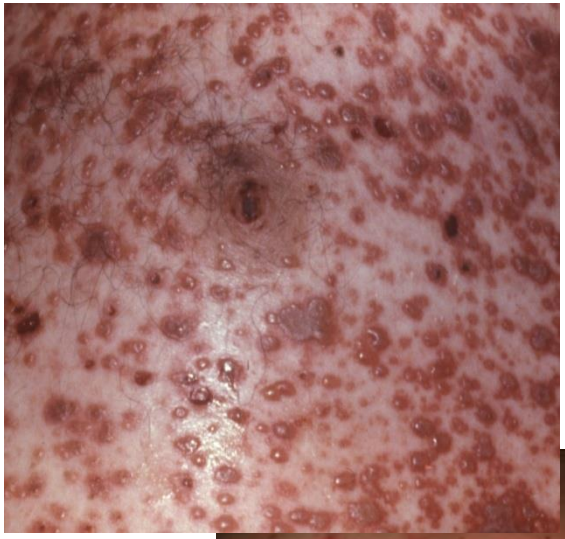
90% of children in UK acquire chickenpox before adolescence

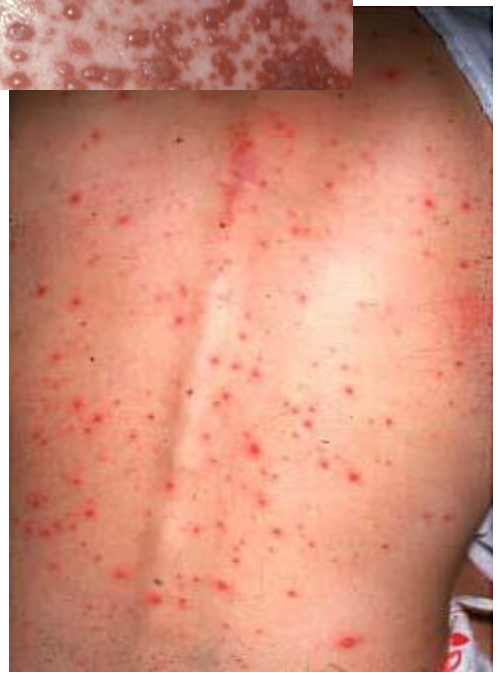
Lesions - papule, vesicle, pustule, crust

Lesions appear in crops, mostly on head, neck and truck, very itchy

In adults, particularly pregnant women, primary infection can be serious (life-threatening)

Severe infection in immunosuppressed children /neonates





Zoster - shingles

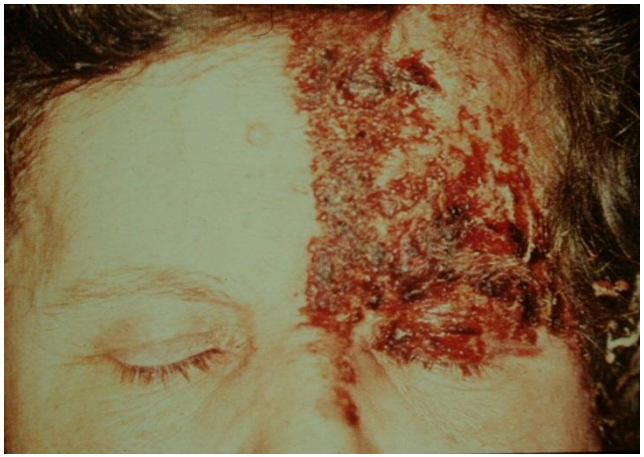
Reactivation of latent infection of dorsal root ganglion

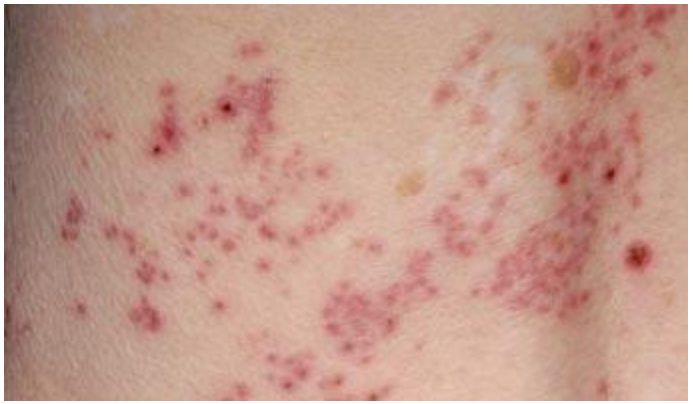
May begin with pain/paraesthesia within the dermatome affected.

Vesicles appear on affected dermatome over 3-5 day period. Density of vesicles typically higher than in chickenpox.

Lasts about 10-15 days, although skin may take more than a month to return to normal.

Most significant clinical manifestation:
- acute neuritis
- post herpetic neuralgia
- rarely meningo-encephalitis





Intrauterine varicella infection

First 20 weeks:

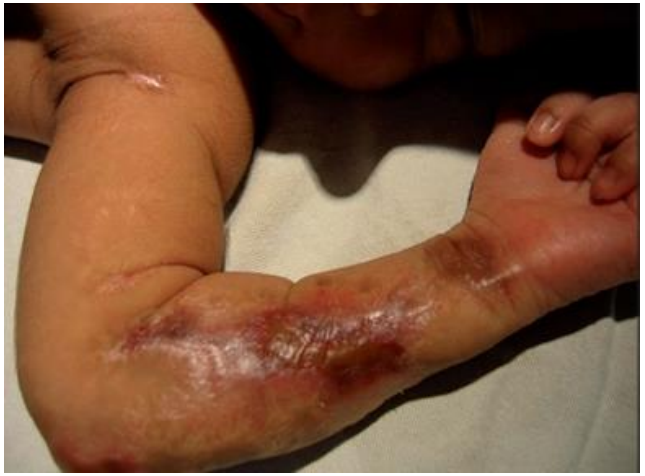
- Congenital (fetal) varicella syndrome
  - limb hypoplasia
  - microcephaly
  - cataracts
  - IUGR
  - skin scarring
- Mortality is high

20 weeks on:

- Herpes zoster in otherwise healthy child

1 week before to 1 week after birth

- Severe haemorrhagic chicken pox



Ramachandran et al 2010 Ind J Dermatology

Prevention of severe maternal VZ infection

Following confirmed exposure to VZV:

History	Testing	Action within 10 days of exposure
A history of chickenpox OR shingles OR two recorded doses of varicella vaccine.	Do not test.	Assume immune. No Post exposure prophylaxis (PEP) required
Uncertain or no history of chickenpox OR shingles OR unknown varicella vaccine history	Test antenatal booking bloods (if available) for VZV IgG. If no antenatal blood or has had contact with chicken pox/shingles since then test recent blood for VZV IgG	If VZV IgG positive – reassure, patient is immune, No PEP required. If VZV IgG negative or equivocal on a qualitative assay, retest with a confirmatory quantitative assay. If quantitative assay is >=100 mIU/ml – reassure, PEP is not indicated. If the result from quantitative testing will not be available within ten days of exposure, or the individual is VZV IgG negative then PEP should be given. Choice of PEP depends on timing of exposure **

Updated guidance on PEP for pregnant women

Since July 2018, restrictions on use of VZIG implemented following a shortage and a review by PHE convened expert working group.

From June 2019, the following recommendations are in place:

1. VZIG is recommended for susceptible women exposed in first 20 weeks of pregnancy (up to and including 20+0) within 10 days of exposure
2. Either VZIG or Oral aciclovir (800mg four times a day from days 7 to 14 after exposure) is recommended for susceptible women exposed from 20 weeks (from 20 +1 to delivery)

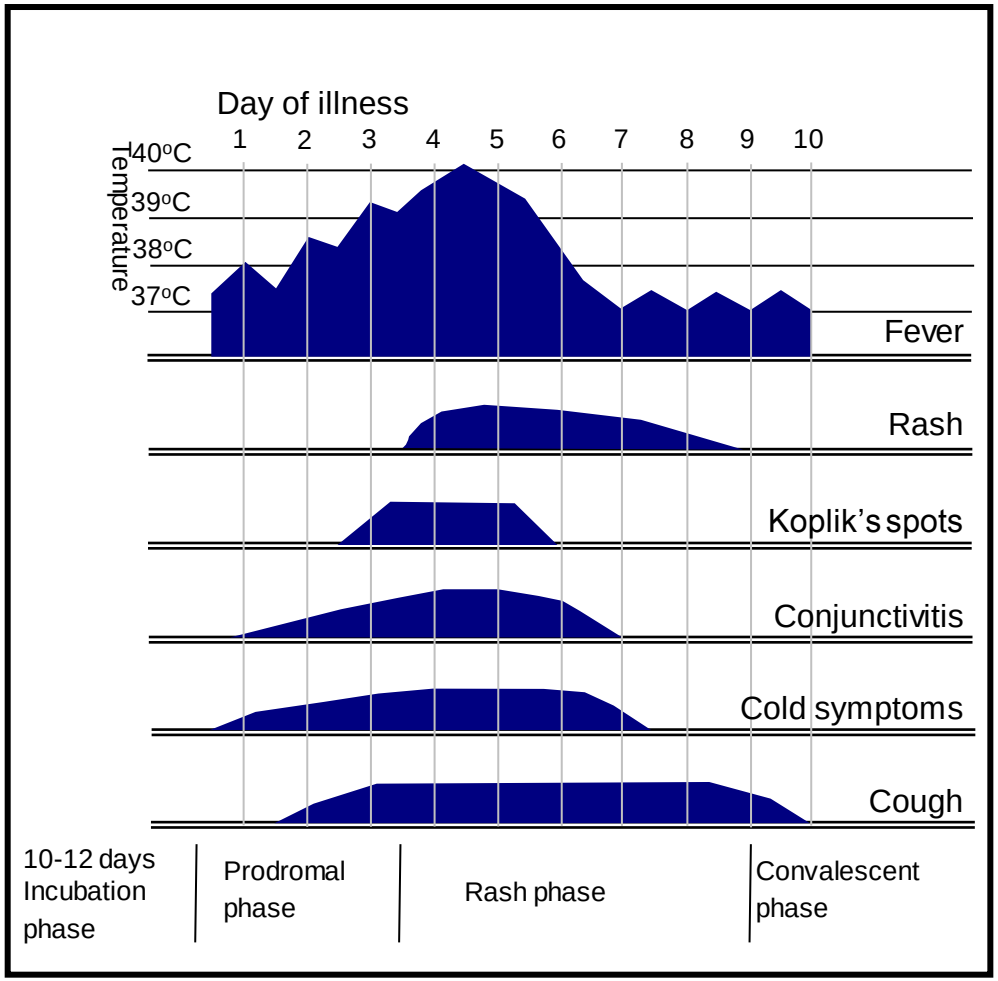
- The decision on choice of PEP for women exposed from 20 weeks of pregnancy should take into account patient and health professional preference as well as the ability to offer and provide PEP in a timely manner.

Detailed guidance available at
https://www.gov.uk/government/publications/varicella-zoster-immunoglobulin

Measles

Incubation period - 8-10 days
Prodromal illness:
- fever
- cough/coryza
- conjunctivitis

Rash – maculopapular rash d14
Complications:
- otitis media
- bronchitis
- pneumonia
- encephalitis
- subacute sclerosing panencephalitis (SSPE)

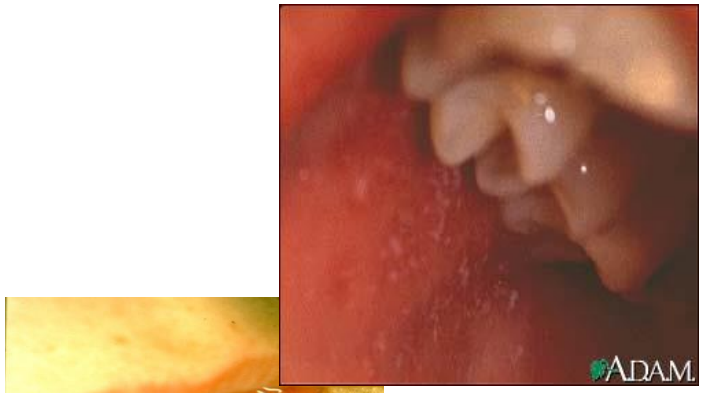


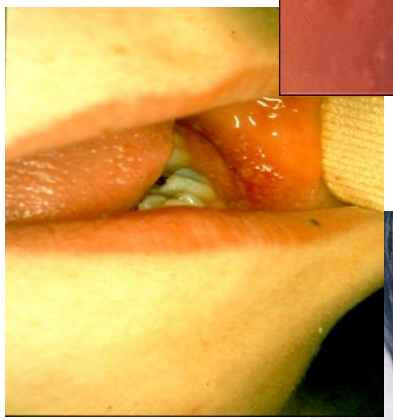
Clinical signs

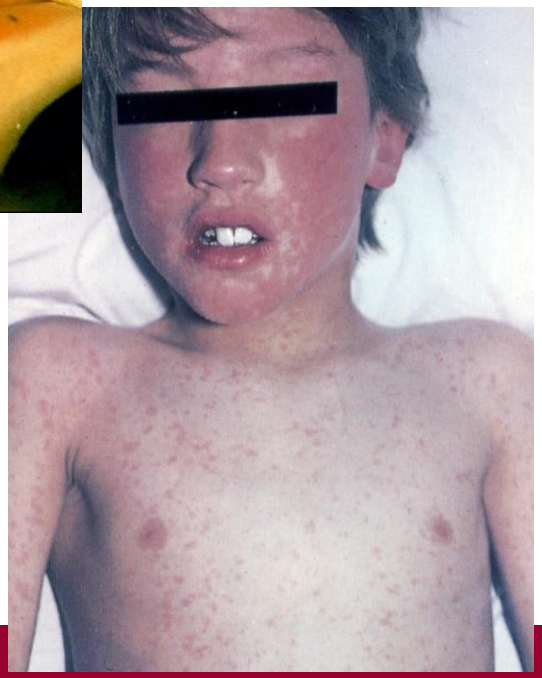
4Cs - cough, coryza, conjunctivitis, very cranky

High fever, miserable child

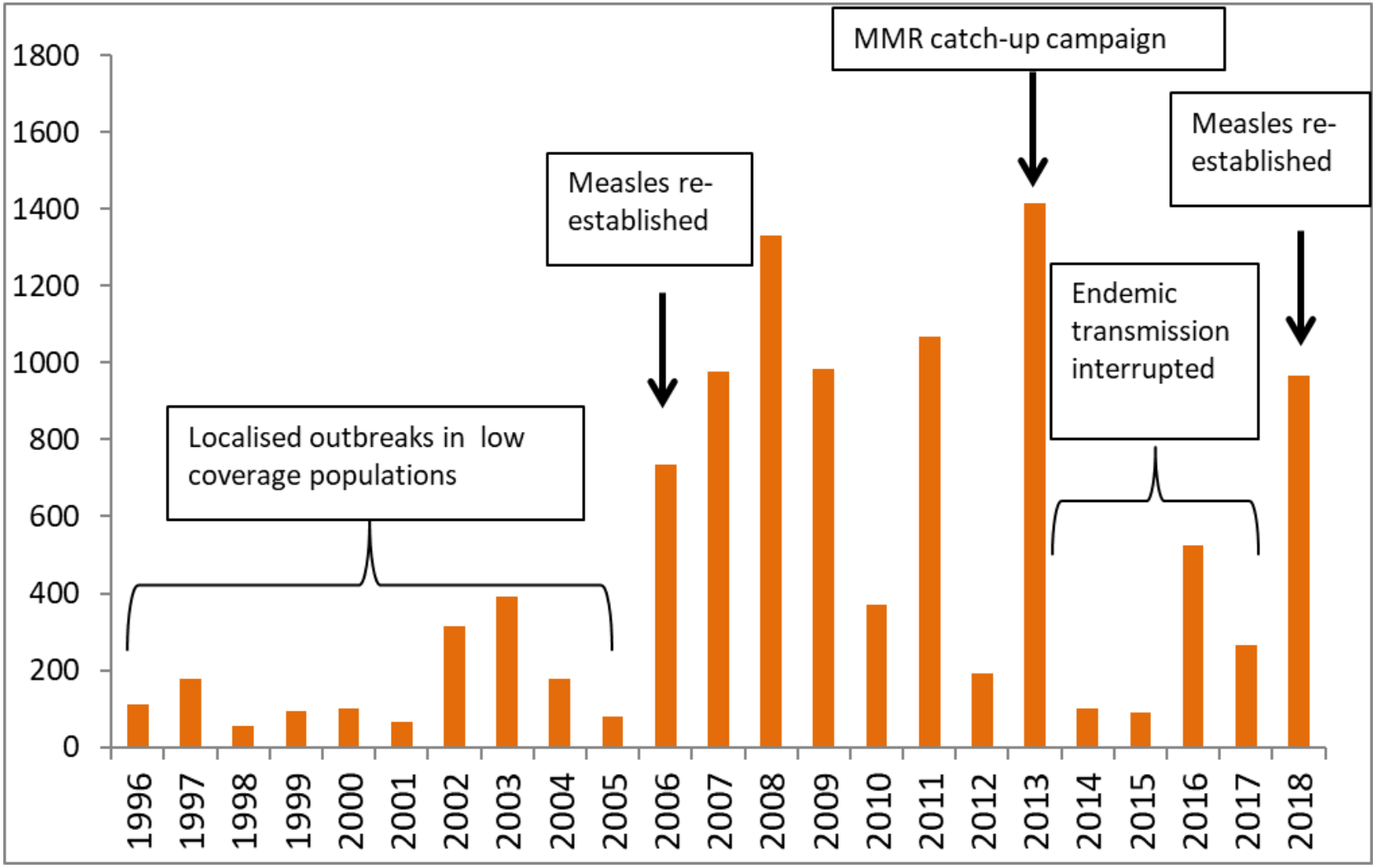
Rash
- forehead and neck
- then trunk
- discrete and then
- may become
- confluent







Measles cases in England



Suspected measles

Likelihood of measles determined by

- Patient epidemiologically linked to a confirmed measles case
- Patient had recently travelled abroad (esp if to an endemic country)
- Patient has not received measles containing vaccine
- Patient likely to be non-immune based on year of birth, clinical and immunisation history

If pregnant contacts identified, may need rapid confirmation of diagnosis so that post-exposure prophylaxis can be initiated with Human Norman Immunoglobulin (HNIG) within 6 days of exposure.

Rubella

Aka German measles

A mild childhood disease

Severe congenital abnormalities in the foetus if contracted early in pregnancy

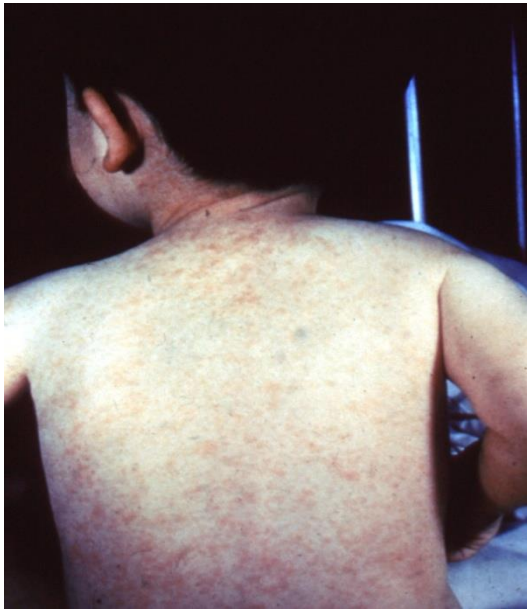
Respiratory transmission- droplet spread or direct contact with respiratory secretions

Clinical

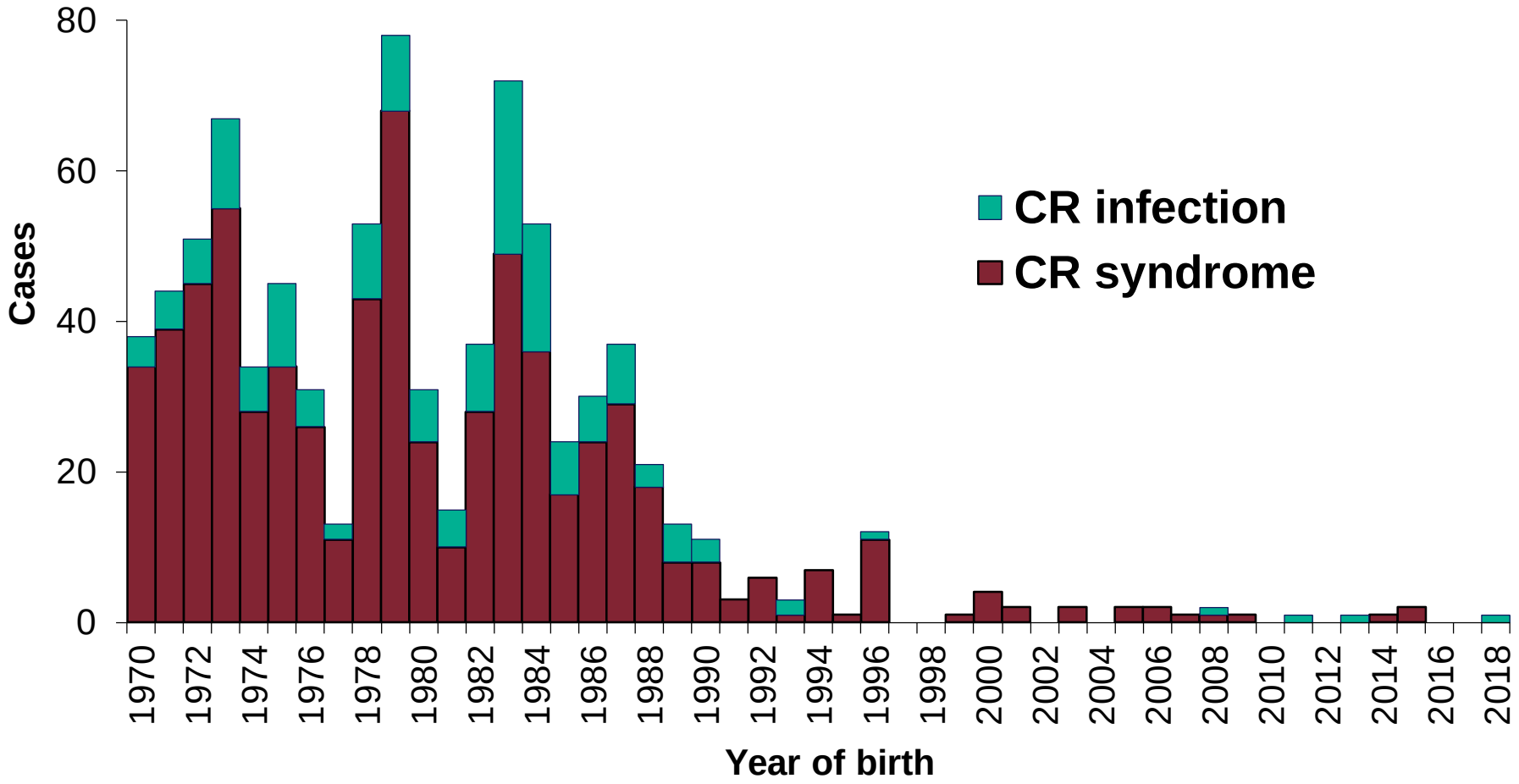
- Mild febrile illness + macular rash + lymphadenopathy
- Infection may be subclinical
- Constitutional symptoms usually mild or absent

Complications

- Arthropathy
- Thrombocytopenic purpura



Congenital Rubella Cases UK, 1970-2018



Source: NCRSP & PHE NIS

CRS cases in UK since June 2014

	Mother's place of birth	Rubella Vaccine status	Previous pregnancy	Acquisition	Rash (weeks)	Booking blood Rubella IgG	Diagnosis	IUGR	CRS or CRI
# 1	Tanzania	Not known	None	Tanzania	8	Pos	Prawn allergy	Yes	CRS
# 2	Zimbabwe	Not known	None	Brother (Zimbabwe)	12	Neg*	?	No	CRS
# 3	Tanzania	Not known	None	Tanzania	13	Pos	Not declared	Yes	CRS

Exposure to rubella

- From 1 April 2016, antenatal rubella susceptibility screening ceased in England.
- If a woman has had one of the following she should be reassured that the likelihood of rubella is remote and that specific rubella investigation is not required but she must return if a rash develops:
- at least 2 documented doses of rubella containing vaccine
- at least one rubella antibody test (before or at the time of exposure) in which **IgG antibody was detected**

Advice and information for pregnant women

At booking midwives should:

1. Check and document MMR vaccination status in the maternity records and offer postpartum doses to those with no, incomplete or uncertain vaccination history.

2. Check and document history of chickenpox and shingles, or vaccination against chickenpox and shingles, in the maternity records.

3. Enquire if women have had a rash illness or had contact with a rash illness during the current pregnancy. Those with a recent rash should be investigated according to this guidance.

4. Advise women that they should inform their midwife, GP or obstetrician urgently if they have contact at any time in pregnancy with someone who has a rash.

5. Advise women to inform their midwife, GP or obstetrician urgently if they develop a rash at any time in pregnancy. They should be advised to avoid any antenatal clinic or maternity setting until clinically assessed, to avoid exposing other pregnant women.

Summary

Some ‘childhood’ infections can be catastrophic in pregnancy

- Fetal loss
- Congenital infection
- Life-threatening infection to mothers

Pregnant women need to know what to do if:

a) Develop a rash

b) Are in contact with someone with chicken pox and they have not had chicken pox/shingles themselves

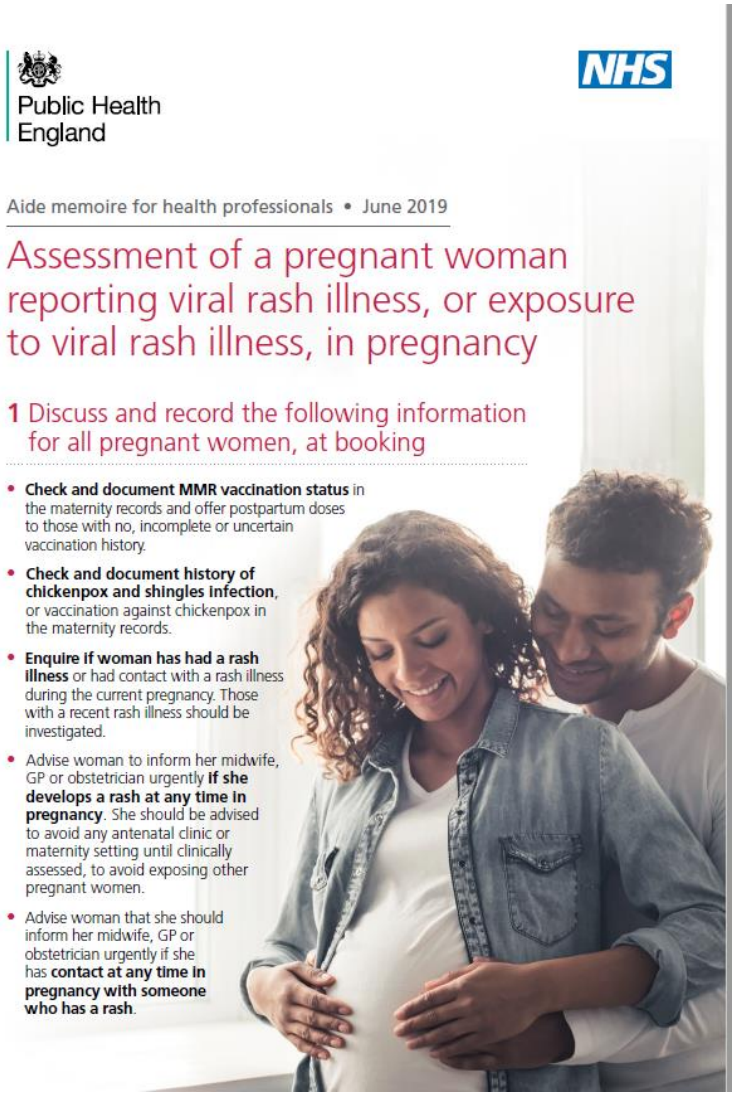
c) Are in contact with someone with a non-chicken pox rash and they have not received 2 doses of MMR

PHE Guidelines 2019

Aide Memoire for health professionals including:-

- managing pregnant women with exposure to viral rash illness
- Managing pregnant women presenting with a viral rash illness

Available at: https://www.gov.uk/government/publications/viral-rash-in-pregnancy



Questions?