Title: Chickenpox in Maternity Care

Classification:	Guideline		
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Authors Division:	Women's and Children's Health		
Departments/Group this Document applies to:	Maternity		
Approval Group: Women's Health Guidelines group		**Date of Approval:**	Oct 2022
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Guideline to be followed by (target staff):
Maternity staff – Midwives and Medical
Paediatric staff – Neonates Nursing and Medical

To be read in conjunction with the following documents:
Trust Infection Control Manual
Fetal Anomalies Guideline

Are there any eCARE implications? Yes

CQC Fundamental standards:
Regulation 9 – person centered care
Regulation 10 – dignity and respect
Regulation 11 – Need for consent
Regulation 12 – Safe care and treatment
Regulation 13 – Safeguarding service users from abuse and improper treatment
Regulation 14 – Meeting nutritional and hydration needs
Regulation 15 – Premises and equipment
Regulation 16 – Receiving and acting on complaints
Regulation 17 – Good governance
Regulation 18 – Staffing
Regulation 19 – Fit and proper

Disclaimer

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute

for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.
The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

Index

Guideline Statement

This guideline is for staff to refer to in the event of a maternity service user coming into contact with Chicken Pox during their pregnancy.

Executive Summary

This guideline has been developed using advice from:

- Royal College of Obstetricians & Gynaecologists (RCOG) Green-top Guideline No 13 – Chickenpox in Pregnancy (January 2015)
- Public Health England (PHE) Guidance on viral rash in pregnancy (January 2011)
- Public Health England (PHE) Chickenpox and shingles vaccines: advice for pregnant women (February 2015)
- Public Health England (PHE) The Green book, Varicella Chapter 34 (April 2013)
- National Institute of Clinical Excellence (NICE) Clinical Knowledge Summaries Chickenpox (September 2014)
- Potential Clinical Risk

1.0 Roles and Responsibilities:

Midwives, in all clinical areas who are responsible for providing care to a maternity service user and their families and for giving telephone advice.

Doctors in all clinical areas who may be providing care for a maternity service user and their families, and when contacted by colleagues in other areas of practice for advice.

2.0 Implementation and dissemination of document

This document will be disseminated to all staff via team meetings and can be accessed via the intranet. There are no known implications for practice in implementing this guideline.

3.0 Processes and procedures

3.1 Introduction

- Varicella Zoster Virus (VZV) is a DNA virus of the herpes family that is highly contagious and is transmitted by respiratory droplets and by direct personal contact with vesicle fluid or indirectly via fomites (skin cells, hair, clothing and bedding).
- The primary infection is characterised by fever, malaise and a pruritic rash that develops into crops of maculopapules which become vesicular and crust over before healing.
- The incubation period is between 1 to 3 weeks and the disease is infectious 48 hours before the rash appears and continues to be infectious until the vesicles crust over, this is usually within 5-6 days.
- It is a common childhood disease and as a result over 90% of the antenatal population in the UK and Ireland are seropositive for VZV immunoglobulin IgG antibody. Primary VZV infection in pregnancy is uncommon: it is estimated to complicate 3 in every 1000 pregnancies. Maternity service users from tropical and subtropical areas are more likely to be seronegative to VZVIgG and therefore more susceptible to the development of chickenpox in pregnancy.

- Infection in adulthood, particularly in pregnancy can be more severe and mortality has occurred. Pneumonia can occur in 10% cases and ventilatory support may be required. Other severe morbidities include hepatitis and encephalitis.

3.2 Varicella prevention

3.2.1 Postpartum

- Current UK practice does not recommend universal serological antenatal screening for VZV.
- If no or uncertain past history of chickenpox, serum VZV antibodies could be checked
- Varicella vaccination should be considered for maternity service users who are seronegative for VZV IgG pre-pregnancy or in the postpartum period.
- If vaccinated, maternity service users should be advised to:
  - avoid pregnancy for 4 weeks after completing the 2 dose vaccine schedule
  - avoid contact with other susceptible pregnant maternity service users should a post-vaccination rash occur.
  - Maternity service users should be reassured that breastfeeding is safe following Varicella vaccination

3.2.2 Initial antenatal visit

- The midwife should take history of any previous chicken pox or shingles infections
- Maternity service users who have not had chickenpox or are known to be seronegative chicken pox must be advised to avoid contact with chickenpox or shingles during pregnancy.
- Pregnant maternity service users must be advised to inform healthcare workers of a potential exposure without delay.

3.2.3 Known or suspected contact in pregnancy- see Appendix 1

- A careful history must be taken to confirm the significance of the contact and the susceptibility of the maternity service user.
- Significant contact is defined as contact in the same room for 15 minutes or more, face-to- face contact, continuous home contact or contact in the setting of a large open ward. The UK Advisory Group on Chickenpox considers any close contact during the period of infectiousness to be significant.

<u>Maternity service users with uncertain or no previous history of chicken pox (or come from tropical or subtropical countries):</u>

- Should have a blood test for confirmation of VZV immunity (serum VZV IgG should be tested).
- If booking antenatal bloods have been taken earlier, the serum stored in the laboratory may be used. Please refer to the Trust 'Guidelines for the Use of: Human Varicella Zoster Immunoglobulin (VZIG), Hepatitis B Immunoglobulin (HBIG), Tetanus Immunoglobulin (TIG)' document.
- If the maternity service user has been subject to significant exposure and has not been immune to VZV in pregnancy, or postnatally (if the birth occurs within 10 days of exposure); they maternity service user should be given VZIG as soon as possible.

- VZIG is effective when given up to 10 days after contact
- In the case of continuous exposures, this is defined as 10 days from the appearance of the rash in the index case
- Contact the local Consultant Microbiologist to authorise and issue the VZIG.
- If VZIG is given, the pregnant maternity service user should be managed as potentially infectious from 8 - 28 days after VZIG (8 – 21 days if VZIG is not given).
- Adverse effects of VZIG include pain and erythema at the injection site.

Maternity service users who have had previous exposure to chickenpox or shingles (regardless of whether or not they have received VZIG):

- Should be asked to notify their doctor or midwife early if a rash develops.
- A pregnant maternity service user who develops a chickenpox rash should be isolated from other pregnant people when they attend a GP surgery or hospital for assessment.
- A second dose of VZIG may be required if a further exposure is reported and 3 weeks have elapsed since the last dose of VZIG.

3.3 Clinical infection in the pregnant maternity service user

3.3.1 Management of chickenpox in pregnant maternity service user

- Health care professionals should be aware of the increased morbidity associated with varicella infection in adults, including pneumonia, hepatitis and encephalitis.
- Pregnant maternity service users who develop a rash of chickenpox should immediately contact their GP.
- Maternity service users should avoid contact with susceptible individuals e.g. other pregnant people and neonates until lesions have crusted over. Therefore, maternity service users should be advised not to attend the Antenatal Clinic/ADAU until then.
- Symptomatic treatment and hygiene are advised to prevent secondary bacterial infection of the lesions.
- Oral Aciclovir (800mg five times a day for 7 days) should be prescribed if pregnant maternity service users present within 24 hours of the onset of the rash and is more than 20+0 weeks gestation (UK Advisory Group on Chickenpox).
- Oral Aciclovir reduces the duration of fever and symptomology of varicella infection in immunocompromised adults if commenced within 24 hours of developing the rash.
- Aciclovir should be used cautiously before 20+0 weeks of gestation
- Intravenous aciclovir should be given to all pregnant women with severe chickenpox.
- Maternity service users should be advised that Aciclovir is not licensed for use in pregnancy
- The risks and benefits of Aciclovir in pregnancy should be discussed with the maternity service user to gain informed consent
- VZIG has no therapeutic benefit once chickenpox has developed and therefore should not be used.

3.3.2 Indication for hospital referral

- The pregnant maternity service user with chickenpox should be asked to contact their doctor immediately if:
- they develop respiratory symptoms
- their condition deteriorates
- Maternity service users who develop symptoms or signs of severe chickenpox should be referred immediately to hospital.
- A hospital assessment should be considered in a maternity service user who is at high risk of severe or complicated chickenpox even in the absence of concerning symptoms or signs e.g., smokers, have chronic obstructive lung disease, are immunosuppressed (including those who have taken systemic corticosteroids in the preceding 3 months), have a more extensive or haemorrhagic rash or who are in the latter half of pregnancy. The assessment needs to take place in an area they will not come into contact with other pregnant maternity service users i.e. avoiding ADAU but could consider isolation on labour ward.
- Appropriate treatment should be decided in consultation with a multidisciplinary team: Consultant Obstetrician, with input from fetal medicine specialist, virologist and neonatologist.
- Maternity service users hospitalised with varicella should be nursed in isolation from babies, susceptible pregnant people or non-immune staff.

Timing of birth

- Timing and mode of birth must be individualised. Birth during the viraemic period while the chickenpox vesicles are active may be extremely hazardous. Maternal risks are haemorrhage and/or coagulopathy due to thrombocytopaenia or hepatitis. There is also a high risk of varicella infection of the newborn with significant morbidity and mortality.
- If the maternal infection occurs in the last 4 weeks of pregnancy, there is a significant risk of varicella infection of the newborn.
- Planned birth should be avoided for at least 7 days after the onset of maternal rash to allow passive transfer of antibodies from maternity service user to child, providing that continuing the pregnancy does not pose any additional risks to the maternity service user or baby.
- When epidural or spinal anaesthesia is undertaken in women with chickenpox, a site free of cutaneous lesions should be chosen for needle placement

3.4 Fetal & Neonatal risk

3.4.1 For maternity service users with confirmed chicken pox infection in pregnancy

- Refer to a fetal medicine specialist at 16-20 weeks gestation or 5 weeks after infection, for discussion and detailed ultrasound examination.
- Complete a paediatric alert (Baby Alert- located in Adhoc on eCare)
- Inform the Neonatologist of the birth of all babies born to maternity service users who have developed chickenpox at any gestation during pregnancy.
- Organise neonatal ophthalmic screening after birth.

3.4.2 Fetal Risk

- Spontaneous miscarriage does not appear to be increased if chickenpox occurs in the first trimester
- If the pregnant maternity service user develops varicella or shows serological conversion in the first 28 weeks of pregnancy, they have a small risk of Fetal Varicella Syndrome (FVS).
- FVS is characterised by one of more of the following:
  - Skin scarring in a dermatomal distribution
  - Eye defects
  - Hypoplasia of the limbs
  - Neurological abnormalities
  - Low birth weight

FVS does not occur at the time of initial fetal infection, it results from a subsequent herpes zoster reactivation in utero and only occurs in a minority of infected fetuses. It is reported to complicate maternal chickenpox occurring as early as 3 weeks and as late as 28 weeks of gestation.

3.4.3. Neonatal Risk

- Varicella infection of the newborn (previously called congenital varicella) refers to VZV infection in early neonatal life resulting from maternal infection near the time of the birth or immediately postpartum or from contact with a person other than the maternity service users with chickenpox or shingles during this time.
- Severe chickenpox is most likely to occur if the infant is born within 7 days of onset of the maternity service users' rash or if the maternity service user develops the rash up to 7 days after the birth.
- If birth occurs within 7 days following the onset of maternal rash, or if the maternity service user develops the chickenpox rash within the 7 days period after birth, the neonate should be given VZIG as soon as possible. The infant should also be monitored for signs of infection until 28 days after the onset of maternal infection.
- VZIG is also recommended for non-immune neonates that are exposed to chickenpox or shingles (other than maternal) in the first 7 days of life.
- Neonatal blood should be sent for VZVIgM antibody and later a follow up sample after 7 months of age should be tested for VZVIgG antibody.

3.5 Breastfeeding

- Maternity service users with chickenpox should breastfeed if they wish to and are well enough to do so.

- Breastfeeding is safe following Varicella vaccination

- If there are active chickenpox lesions close to the nipple, they should express breast milk (EBM) from the affected breast until the lesions have crusted over. The EBM may be fed to the baby who is receiving treatment with VZIG and/or Aciclovir

3.6 Advice for maternity service users with chickenpox

3.6.1 Alleviation of symptoms

- Encourage adequate fluid intake to avoid dehydration
- Dress appropriately to avoid overheating or shivering
- Wear smooth cotton fabrics
- Keep nails short to minimise dangers from scratching

3.6.2 Additional advice

- Advise that the most infectious period is 1-2 days before the rash appears but infectivity continues until all the lesions have crusted over (commonly 5-7 days after the onset of illness)
- During this time, advise the person with chickenpox to avoid contact with people who:
  - Are immunocompromised (e.g. receiving cancer treatment or high doses of oral steroids, or those with conditions that reduce immunity)
  - Are pregnant
  - Infants aged 4 weeks or less
- Inform the person to seek urgent medical advice if their condition deteriorates or they develop complications e.g. bacterial superinfection manifesting as sudden high grade pyrexia, erythema and tenderness surrounding the original chickenpox lesions, or if signs of dehydration develop.
- Offer written patient information such as that from the Royal College of Obstetricians and Gynaecologists

3.7 Precautions for healthcare workers

- The immune status of healthcare workers in maternity units is determined as part of pre-employment checks by Occupational Health.
- Non-immune individuals should be offered varicella vaccination.
- If non-immune healthcare workers have significant exposure to infection, they should:
  - be warned they may develop chickenpox and should be reallocated to minimise patient contact from 8 – 21 days post-contact;
  - be advised to report to the Occupational Health department before patient contact if they are feeling unwell or develop a fever or rash.

4.0 Statement of evidence/references

The rationale for main recommendations are made under guidance from the Royal College of Obstetricians and Gynaecologists (2015). The purpose is to provide staff and maternity service users with current recommendations for care during pregnancy.

References

RCOG (2015) Green-top Guideline No.13: Chickenpox in Pregnancy January 2015

Public Health England (2015) Chickenpox and shingles vaccines: advice for pregnant women February 2015

Public Health England (2011) Guidance on viral rash in pregnancy January 2011

Public Health England (2015) Vaccination in pregnancy January 2015

NICE (2014) Clinical Knowledge Summaries: Chickenpox September 2014

5.0 Governance

5.1 Document review history

Version number	Review date	Reviewed by	Changes made
5	03/08/2020	Charlotte Auker	Document reviewed and updated
6	12/08/2022	Sophia Yazdanjoo and Swati Velankar	Document reviewed and updated

5.2 Consultation History

Stakeholders Name/Board	Area of Expertise	Date Sent	Date Received	Comments	Endorsed Yes/No
Anja Johansen-Bibby	Obstetric Consultant	21/8/22	23/8/22	Various	Yes
Sanyal Patel	Obstetric Consultant	22/8/22	22/8/22	Suggested reference	Yes
Janice Styles	Consultant Midwife	23/8/22	23/8/22	Routine discussion at booking	Yes
Marian Forster	Neonatal Nurse	23/8/22	23/8/22	No comments	N/A

5.3 Audit and monitoring

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committee/Board
If uncertain or no past exposure was blood test for VZVIgG performed?	Audit	Midwives and doctors as designated by audit leads	Annual	a) Guideline group b) Labour Ward Forum Maternity Clinical Improvement Group
VZIG administered?				
Vaccination reported to UK Vaccine in Pregnancy Surveillance Programme?				
If <28/40, referral to fetal medicine specialist at 16-20/40?				
Amniocentesis to detect varicella DNA performed?				
Postpartum varicella immunisation given?				

5.4 Equality Impact Assessment

As part of its development, this Guideline and its impact on equality has been reviewed. The purpose of the assessment is to minimise and if possible remove any disproportionate impact on the grounds of race, gender, disability, age, sexual orientation, religion or belief, pregnancy and maternity, gender reassignment or marriage and civil partnership. No detriment was identified. Equality Impact assessments will show any future actions required to overcome any identified barriers or discriminatory practice.

Equality Impact Assessment			
Division	Women and Children's	Department	Maternity
Person completing the EqIA	Sophia Yazdanjoo	Contact No.	
Others involved:	Swati Velankar	Date of assessment:	Aug 2022
Existing policy/service	Yes	New policy/service	No

Will patients, carers, the public or staff be affected by the policy/service?	Yes
If staff, how many/which groups will be affected?	Maternity staff – Midwives and Medical Paediatric staff – Neonates Nursing and Medical

Protected characteristic	Any impact?	Comments
Age	NO	Positive impact as the policy aims to recognise diversity, promote inclusion and fair treatment for patients and staff
Disability	NO	
Gender reassignment	NO	
Marriage and civil partnership	NO	
Pregnancy and maternity	YES	
Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	

What consultation method(s) have you carried out?
Email consultant for maternity guideline review group
How are the changes/amendments to the policies/services communicated?
Maternity guideline review group, minute, guideline monthly memo
What future actions need to be taken to overcome any barriers or discrimination?

What?	Who will lead this?	Date of completion	Resources needed
Nil	Nil	Nil	Nil
Review date of EqIA	Aug 2025		