Title: Chickenpox in Maternity Care

Classification:	Guideline		
Authors Name:	Laura Andrews/ Charlotte Auker		
Authors Job Title:	Community Midwife/ADAU		
Authors Division:	Women's and Children's Health		
Departments/Group this Document applies to:	Maternity		
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Guideline to be followed by (target staff): **Maternity staff – Midwives and Medical** **Paediatric staff – Neonates Nursing and Medical**			
Trust Infection Control Manual Fetal Anomalies Guideline			
Are there any eCARE implications? Yes			
CQC Fundamental standards: Regulation 9 – person centred 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 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.

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Guideline Statement

This guideline is for staff to refer to in the event of a woman coming into contact with Chicken Pox during her 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 women and their families and for giving telephone advice.

Doctors in all clinical areas who may be providing care for women 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. Women 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

- If no or uncertain past history of chickenpox, serum VZV antibodies could be checked A

- Varicella vaccination should be considered for women who are seronegative for VZV IgG before pregnancy or in the postpartum period. A
- If vaccinated, patient should be advised to:
  - avoid pregnancy for 4 weeks after completing the 2 dose vaccine schedule
  - avoid contact with other susceptible pregnant women should a post-vaccination rash occur.

3.2.2 Initial antenatal visit

- Women 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 women must also 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 woman.
- Women should have a blood test for confirmation of VZV immunity. If immunity is unknown or in doubt, or for women who have come from tropical or subtropical countries 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 pregnant woman has had a significant exposure and is not immune to VZV at any stage of the pregnancy and postnatally if birth occurs within 10 days of exposure, she 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 woman should be managed as potentially infectious from 8 – 28 days after VZIG (8 – 21 days if VZIG is not given).
- Significant contact is defined as contact in the same room for 15minutes 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.
- Women who have had 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 woman who develops a chickenpox rash should be isolated from other pregnant women when she attends 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.
- Adverse effects of VZIG include pain and erythema at the injection site.

3.3 Clinical infection in the pregnant woman

3.3.1 Management of chickenpox in pregnant woman

- Health care professionals should be aware of the increased morbidity associated with varicella infection in adults, including pneumonia, hepatitis and encephalitis.
- Pregnant women who develop a rash of chickenpox should immediately contact their GP.

- Women should avoid contact with susceptible individuals e.g. other pregnant women and neonates until lesions have crusted over. Therefore women should be advised not to attend the Antenatal Clinic/ADAU until then.
- Symptomatic treatment and hygiene is advised to prevent secondary bacterial infection of the lesions.
- Oral Aciclovir (800mg five times a day for 7 days) should be prescribed if pregnant women 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. Informed consent should be obtained from the patient when Aciclovir is used in this context.
- Aciclovir should be used cautiously before 20+0 weeks of gestation
- VZIG has no therapeutic benefit once chickenpox has developed.

3.3.2 Indication for hospital referral

- The pregnant woman with chickenpox should be asked to contact her doctor immediately if she develops respiratory symptoms or any other deterioration in her condition.
- Women who develop symptoms or signs of severe chickenpox should be referred immediately to hospital.
- A hospital assessment should be considered in a woman 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 she will not come into contact with other pregnant women i.e. avoiding ADAU but could consider isolation on labour ward.
- Appropriate treatment should be decided in consultation with a multidisciplinary team: obstetrician or fetal medicine specialist, virologist and neonataologist.
- Women hospitalised with varicella should be nursed in isolation from babies, susceptible pregnant women or non-immune staff.
- 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 a woman's 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 mother to child providing that continuing the pregnancy does not pose any additional risks to the mother or baby.

3.4 Fetal & Neonatal risk

3.4.1 Fetal risk

- Spontaneous miscarriage does not appear to be increased if chickenpox occurs in the first trimester
- If the pregnant woman develops varicella or shows serological conversion in the first 28 weeks of pregnancy, she has a small risk of Fetal Varicella Syndrome (FVS).
- FVS has been reported to complicate maternal chickenpox occurring as early as 3 weeks and as late as 28 weeks gestation and 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
- Women who develop chickenpox in pregnancy should be referred to a fetal medicine specialist at 16-20 weeks gestation or 5 weeks after infection for discussion and detailed ultrasound examination.
- A paediatric alert should be completed during pregnancy and a neonatologist should be informed of the birth of all babies born to women who have developed chickenpox at any gestation during pregnancy.
- Neonatal ophthalmic screening should be organised after birth.

3.4.2 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 mother 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 mother's rash or if the mother 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 mother 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

Women with chickenpox should breastfeed if they wish to and are well enough to do so.

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 someone 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.

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;
  - and 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 women 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

5.2 Consultation History

Stakeholders Name/Board	Area of Expertise	Date Sent	Date Received	Comments	Endorsed Yes/No

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 c) 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	Erica Puri	Contact No.	87153
Others involved:	NIL	Date of assessment:	3/08/2020
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	NO	
Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	

What consultation method(s) have you carried out?
focus groups, face-to-face meetings,

How are the changes/amendments to the policies/services communicated?			
email, meetings, intranet post,			
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	03/08/2020		