

## Jaundice in the Neonate

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The latest approved version of this document is online.  
If the review date has passed please contact the Author for advice.

### Version Control

Version	Summary of Changes/Amendments	Issue Date
1	Initial Issue	12/2021

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Groups approved at
Maternity Policies group – 6/12/2021
Women and Children’s Policies Group – 20/12/21

## ENGAGEMENT & CONSULTATION

### Key Individuals/Groups Involved in Developing this Document

Role / Designation
Operational Team Lead Midwife
Clinical Supervisor for Midwives
Band 6 midwife
Consultant Midwife
Neonatologist - SBUHB

### Circulated to the following for Consultation

Date	Role / Designation
09/11/2021	Midwifery Leadership and Management Team
09/11/2021	Wales Maternity & Neonatal Network Neonatologist
09/11/2021	Health Visiting Leadership and Management Team
09/11/2021	Powys Midwives
09/11/2021	Powys Health Visiting
09/11/2021	Women and Children's Guidelines/policy group members
09/11/2021	Powys Safeguarding team

### Evidence Base

Jaundice in Newborn babies under 28 days Nice Clinical guideline [CG98] Published date: 19 May 2010 Last updated: 26 October 2016

Nice CKS: Jaundice in the Newborn Revised November 2015

Health and Care Standards:  
Theme 1 – Staying Healthy  
Theme 3 – Effective care  
Theme 4 – Dignified care  
Theme 5 – Timely care

## IMPACT ASSESSMENTS

Equality Impact Assessment Summary					
	No impact	Adverse	Differential	Positive	<b>Statement</b>
					Please remember policy documents are published to both the <b>intranet</b> and <b>internet</b> .
<b>Age</b>	X				The version on the internet must be translated to Welsh.  Policy only applies to neonates
<b>Disability</b>	X				
<b>Gender reassignment</b>	X				
<b>Pregnancy and maternity</b>	X				
<b>Race</b>	X				
<b>Religion/ Belief</b>	X				
<b>Sex</b>	X				
<b>Sexual Orientation</b>	X				
<b>Marriage and civil partnership</b>	X				
<b>Welsh Language</b>	X				
<b>Human Rights</b>	X				
Risk Assessment Summary					
<b>Have you identified any risks arising from the implementation of this policy / procedure / written control document?</b>  No					
<b>Have you identified any Information Governance issues arising from the implementation of this policy / procedure / written control document?</b>  No					
<b>Have you identified any training and / or resource implications as a result of implementing this?</b>  No					

## 1 Introduction

Jaundice is a yellow colouration of the skin and sclerae (whites of the eyes) caused by the accumulation of bilirubin, a bile pigment which is mainly produced from the breakdown of red blood cells. A raised level of bilirubin in the circulation is known as hyperbilirubinaemia.

Bilirubin levels are higher in neonates than in adults because newborn babies have a higher concentration of red blood cells, which also have a shorter lifespan.

For most babies, jaundice is harmless and is not an indication of an underlying disease ('physiological jaundice'). Physiological jaundice can occur in breastfed and formula-fed babies. The expression 'breastmilk jaundice' describes a prolongation of physiological jaundice in breastfed babies.

Some neonatal jaundice is pathological - this can be caused by a number of factors, including: blood group incompatibility; sepsis; bruising; metabolic disorders; Gilbert's syndrome and Crigler-Najjar syndrome; glucose-6-phosphate-dehydrogenase deficiency; and congenital obstruction and malformations of the biliary system, such as biliary atresia.

## 2 Objective

This guideline will be applicable to all staff who come into clinical contact with neonates (babies up to 28 days of life)

This document covers the assessment, diagnosis and referral to secondary care of jaundice, in neonates. It aims to help detect or prevent very high levels of bilirubin, which can be harmful if not treated. It also aims to provide guidance on how and when to refer babies to secondary care promptly for treatment.

## 3 Definitions

- **PTHB** – Powys Teaching Health Board
- **Neonate** – a newborn child up to 28 days of life
- **TCB** – transcutaneous bilirubinometer – a noninvasive test performed in the community for estimation of serum bilirubin
- **SBR** – serum bilirubin – a blood test performed at a DGH laboratory#
- **DGH** - District General Hospitals
- **OTL** - Band 7 Operational Team Lead
- **CSfM** - Clinical Supervisor for Midwives

## **4 Responsibilities**

### **4.1 Head of Midwifery and Sexual Health Services and Head of Children's Public Health Nursing**

The Head of Midwifery and Sexual Health Services and Head of Children's Public Health Nursing must:

- Ensure all staff read and understand this procedure
- Arrange regular review to monitor compliance with this procedure

### **4.2 Assistant Head of Midwifery and Sexual Health Services and Assistant Head of Health Visiting and School Nursing**

The Assistant Head of Midwifery and Sexual Health Services and Assistant Head of Health Visiting has responsibility for:

- Ensuring dissemination of this document to all relevant staff

### **4.3 Band 7 Operational Team Lead (OTL) – Midwifery and Health Visiting Team Leads**

The OTL and health visiting team lead has responsibility for:

- Ensuring compliance with this document by the teams that they manage

### **4.4 Consultant Midwife**

The consultant midwife has responsibility for:

- Supporting implementation of this document
- Reviewing any new evidence or guidance that is produced that may influence the service
- Communicating any key changes in advice that might influence service provision to the Midwifery Leadership and Management team for consideration.

### **4.5 Clinical Supervisor for Midwives (CSfM)**

The CSfM has responsibility for:

- Supporting implementation of this document within midwifery through group supervision sessions

### **4.6 Women and Children's Risk and Governance Lead**

The Women and Children's Risk and Governance Lead has responsibility for:

- Monitoring review of incidents in relation to content of this document

#### **4.7 All Staff working within maternity and health visiting services**

All staff working the maternity and health visiting services have responsibility for:

- Reading and being familiar with contents of this document
- Referring neonates appropriately for additional care where required

### **5 Assessment for Neonatal Jaundice**

Neonates should be examined for jaundice at every opportunity, especially within the first 72 hours of life, ideally naked, in natural or bright light.

Examine the sclerae and gums, and press lightly on the skin to check for signs of jaundice in 'blanched' skin, especially in babies whose parents are not of a white ethnicity.

Enquire about dark urine and/or pale, chalky stools – these are both 'red flag' symptoms and need urgent hospital review.

All jaundice levels need to be checked either with a TCB or SBR measurement, the severity of jaundice **cannot** be estimated visually.

Some babies are at higher risk of severe jaundice, these include: -

- babies born before 38 weeks gestation,
- babies who have a sibling who has had jaundice requiring treatment, and
- babies where feeding has not been going well – these babies may need planned extra visits in the first few days of life to assess.

Parents and carers should be informed of the chance of jaundice, especially where risk factors are present, and should know who to call if concerned.

#### **5.1 Monitoring jaundice**

- Babies who are jaundiced within the first 24 hours of life need an urgent (within two hours) hospital review, with a paediatrician or neonatologist depending on local services
- If a baby with obvious jaundice has features of bilirubin encephalopathy (for example atypical sleepiness, poor feeding, irritability) arrange emergency admission (via 999 ambulance)
- Jaundice first appearing at or after day seven of life needs urgent hospital review (within six hours, or sooner if there are other concerns)

### **For all other jaundiced neonates born at > 35 weeks gestation who are well and >24 hours old**

- If transcutaneous bilirubinometer (see Appendix A) is available take measurement, record the level within 6 hours and assess using the threshold chart (see appendix B) and take the appropriate action
- If a transcutaneous bilirubinometer measurement indicates a bilirubin level greater than 250 micromol/litre, serum bilirubin measurement is needed
- In babies who are clinically well, have a gestational age of 38 weeks or more and are more than 24 hours old, and who have a bilirubin level that is below the phototherapy threshold but within 50 micromol/litre of the threshold (see the threshold table and the treatment threshold graphs), repeat bilirubin measurement as follows:
  - **within** 18 hours for babies with risk factors for neonatal jaundice (those with a sibling who had neonatal jaundice that needed phototherapy or a mother who intends to exclusively breastfeed)
  - **within** 24 hours for babies without risk factors.
- If a transcutaneous bilirubinometer is not available, measure the serum bilirubin
- Use serum bilirubin measurement if bilirubin levels are at or above the relevant treatment thresholds for their age, and for all subsequent measurements.
- Babies who have had phototherapy are not suitable for TCB measurement

*If transcutaneous bilirubin measurements are unavailable, refer to a neonatal or paediatric unit (depending on local arrangements) for measurement of a serum bilirubin level within 6 hours.*

A summary flowchart can be found in Appendix C.

### **5.2 Prolonged jaundice**

Babies with prolonged jaundice - > 14 days in term babies (over 37 weeks) and 21 days in preterm babies (under 37 weeks) need a prompt review in secondary care for bloods for conjugated bilirubin, blood and maternal blood group and urine culture. Reassure parents that this is to exclude very rare but potentially serious disease.

This referral can be undertaken by anyone in clinical contact with the infant, and is not solely a midwifery responsibility.

### **5.3 Serum (blood) bilirubin measurements**

Babies with new jaundice need to be reviewed in secondary care promptly and it is not appropriate for this to be delayed while an SBR is taken and sent from Powys – in all circumstances, a first SBR must be taken in secondary care.

In some circumstances where midwives are appropriately trained and confident, and routine sample transport is available, requests for a follow-up SBR from a doctor/ANNP can be actioned in Powys.

## **6 Safeguarding**

If at any stage the parents decline to follow professional advice to take the baby to a hospital for review when there are clinical concerns there should be a documented discussion about the risk of failing to follow the advice.

A telephone discussion with the neonatal registrar or consultant at the relevant DGH should be had to obtain advice on a plan of care.

If the baby is considered to be at risk contact PTHB safeguarding team 07387064356 or [PowysTHB.Safeguarding@wales.nhs.uk](mailto:PowysTHB.Safeguarding@wales.nhs.uk) for advice and support.'

## **7 Monitoring Compliance, Audit & Review**

Compliance with this guideline will be monitored through Datix reporting. A Datix must be submitted for any admissions as a result of jaundice.

Compliance will also be assessed on an annual basis through the record keeping audits. Opportunities to discuss cases will be provided through group supervision sessions.

This document will be reviewed every three years or earlier should audit results or changes to legislation / practice within PTHB indicate otherwise.

## **8 References / Bibliography**

Jaundice in Newborn babies under 28 days Nice Clinical guideline [CG98]

Published date: 19 May 2010 Last updated: 26 October 2016

Nice CKS: Jaundice in the Newborn Revised November 2015

## **Transcutaneous Bilirubinometer**

The Dräger Transcutaneous Serum Bilirubinometer is a non-invasive tool which allows the operator to read the bilirubin of the baby more easily. The accuracy of transcutaneous bilirubinometers has been adequately demonstrated in term babies (bilirubin less than 250 micromol/litre). Thus, a reading >250micromols/litre determines which infants are at higher risk and require formal blood sampling.

The meter is not indicated for use in newborn infants who:

- Are less than 35-week gestation
- Are more than 14 days old
- Have undergone blood transfusion or phototherapy

Prior to use perform a quality check. Monitor checks and operating procedure should follow manufacturers guideline [these should be displayed next the machine within the birth centre.]

Use touch screen to select Checker- wipe probe and charcoal base of docking station with an alcohol wipe to clean. Press probe onto charcoal pad to perform check. If numbers displayed correspond with the range displayed on the charging unit the machine is safe to use.

To screen baby for jaundice, use the touch screen to select measure. Wipe probe with an alcohol wipe to clean.

- Measurement site should be the baby's mid sternum
- Place monitor flat against the skin and press lightly till you hear a click. Lift monitor from the skin and pause until green light shows. Repeat test until the required number [3] of measurements have been taken. The result will be shown on the display and should be recorded in the baby's postnatal pathway.

**NICE Threshold Table**

**Consensus-based bilirubin thresholds for management of babies 38 weeks or more gestational age with hyperbilirubinaemia**

<b>Age (hours)</b>	<b>Bilirubin measurement (micromol/litre)</b>	
0	> 100	> 100
6	> 125	> 150
12	> 150	> 200
18	> 175	> 250
24	> 200	> 300
30	> 212	> 350
36	> 225	> 400
42	> 237	> 450
48	> 250	> 450
54	> 262	> 450
60	> 275	> 450
66	> 287	> 450
72	> 300	> 450
78	> 312	> 450

84	> 325	> 450
90	> 337	> 450
96+	> 350	> 450
<b>Action</b>	<b>Start phototherapy</b>	<b>Perform an exchange transfusion unless the bilirubin level falls below threshold while the treatment is being prepared</b>

For gestations **less than 38 weeks** refer to threshold tables here:  
<https://www.nice.org.uk/guidance/cg98/resources>

## Appendix C

### Flow Chart for management of neonatal jaundice in the community in term babies <14 days old and pre-term <21 days only

