

## Management of Neonatal Jaundice at Home

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

### Introduction

Jaundice is extremely common in new-born babies and affects approximately 60% of term babies and 80% of preterm babies. (NICE 2010) Of those 60% of term babies, 5% require readmission to hospital for treatment with phototherapy. (Manning, Todd, Maxwell & Platt, 2007). NHS England (2014) found that jaundice was the 4<sup>th</sup> highest reason for admission to hospital making these babies an indicator for significant harm.

Management of neonatal jaundice has been standardised within the NICE Guideline 98 however some babies maybe suitable for treatment at home with a bili-blanket provided they fulfil the necessary criteria. This will reduce the stress and anxiety caused to families, aid bonding and breast feeding and reduces the risk of hospital acquired infection. In turn this will free-up hospital cots and make considerable savings to budgets.

### This guideline is for use by the following staff groups :

Neonatal Outreach Nurse, Midwife and Doctor responsible for the clinical assessment of newborn infants.

### Lead Clinician(s)

Rachel Cashmore

Neonatal Outreach Sister

Approved by Neonatal Guidelines Review Meeting on:

11<sup>th</sup> November 2022

Review Date:

11<sup>th</sup> November 2025

This is the most current document and should be used until a revised version is in place:

### Key amendments to this guideline

Date	Amendment	Approved by:
19 <sup>th</sup> August 2020	New document approved	Paediatric QIM
November 2022	Document approved for 3 years with no amendments	Dr Gregory/ Neonatal Guidelines Review Meeting

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## Management of Neonatal Jaundice at home

### Introduction

Jaundice is extremely common in new-born babies and affects approximately 60% of term babies and 80% of preterm babies. (NICE 2010)

Current practice is that all babies with a bilirubin level above the treatment threshold are admitted to hospital for treatment as standardised within the NICE Guideline 1998, however some babies may be suitable for treatment at home with phototherapy provided they fulfil the necessary criteria. This guideline will set out the criteria which a baby should fulfil in order for phototherapy to be delivered safely and effectively at home.

### Guideline Details

This guideline outlines those babies who could be considered for phototherapy at home.

- Babies who have been a patient on Neonatal Unit (NNU) or Transitional Care Unit (TCU) and fulfil Neonatal Community Outreach criteria
- Babies > 35 weeks gestation
- > 48 hours old
- Birthweight > 2500gm
- Serum bilirubin (SBR) concentration levels should be within the threshold level for phototherapy but less than 50µmol/l above the phototherapy level for the babies chronological age (based on the babies gestation-appropriate nomogram)
- **The serum bilirubin concentration is not rising too sharply (>6µmol/l/hour)**
- The baby's diagnostic workup reveals no abnormal findings with no risk factors for jaundice and no elevated conjugated bilirubin concentration
- The baby is feeding well, passing urine and stooling normally
- The home should be clean with adequate ventilation and electricity supply (This does not include 'pay-as-you-go' meters as there is a risk of supply stopping)
- Parent/carer should have access to private transport and a telephone
- There should be an adult capable of understanding and following instructions who is always available to supervise the baby
- Neonatal Community Outreach should be available 7 days a week
- Home phototherapy equipment is available

### Babies who are current inpatients on NNU/TCU

These babies will be assessed by the Paediatrician on duty for the week as to whether they are appropriate for on-going phototherapy at home according to the criteria. A home phototherapy criteria checklist should be completed.

**If they are not:** they should continue with phototherapy as an inpatient until they achieve a satisfactory rebound serum bilirubin level.

**If they are:** the Paediatrician should discuss with the parent/carer the risks and benefits of home phototherapy and have their agreement to follow all written instructions. They should then complete a consent form.

**WAHT-KD-015**  
**Neonatal Key Documents**

They should be referred to the Neonatal Outreach Team who will meet with the parent/carer to complete the home phototherapy competency package. This will include providing a leaflet with all instructions, the home phototherapy equipment and:

- Ensuring parent/carer knows how to apply the equipment, switch it on and how to clean the equipment
- Parents/carers are aware that phototherapy should be sustained for as long as possible each day, ideally >18 hours per day
- Know the importance of applying the eye protectors and how to do this
- Know how to summon help 24 hours a day if they have any concerns
- Know how to monitor baby's temperature and complete feeding and output chart
- Know how to care for baby's skin whilst having phototherapy

Parent/carer will be asked to sign a consent form and a loan of equipment form.

Once the competency package is completed baby can be discharged home with parent/carer. The Neonatal Outreach Team will arrange to visit the following morning to monitor the baby's progress and measure the serum bilirubin levels.

During each visit the Outreach Sister will:

- Follow 'Guideline for the initial Neonatal Outreach home visit' (WAHT-KD-015)
- Assess babies feeding and elimination by reviewing the completed feed chart
- Check babies axilla temperature
- Review 'phototherapy hours' by calculating number of hours bilisoft used
- Take blood sample for SBR
- Discuss any concerns parents/carers may have

Serum bilirubin levels should be reviewed by the Paediatrician and repeated every 24 hours until the level is >50µmol/l below the phototherapy level for the babies chronological age (based on the babies gestation-appropriate nomogram). At which point phototherapy can be discontinued.

If at any point during home phototherapy the baby shows signs of illness or serum bilirubin levels rise or non-compliance by parents then baby should be re-hospitalised.

Serum bilirubin should be re-measured 12-24 hours after discontinuing phototherapy to detect a rebound in bilirubin levels.

If serum bilirubin levels remain >50µmol/l below the phototherapy level for the babies chronological age then the home phototherapy equipment can be removed from the home.

The Neonatal Outreach Team will arrange a follow-up visit 2-3 days later and if appropriate discharge to the Health Visitor.

**Babies who are jaundiced at home <10 days old**

These are babies who are already home with Neonatal Outreach and who develop jaundice. Not term post-natal babies.

Baby appears jaundiced during home visit by Neonatal Outreach.

If the baby is >35/40, over 24 hours old and less than 10 days old and has had NO previous SBR checks, then perform bilirubinometer check –

- if >250 take capillary blood sample for SBR.
- If < 250 discuss with Paediatric Registrar and repeat in 24 hours.

If the baby has had previous SBR's then take a capillary blood sample.

Bloods should be kept out of the sunlight during transportation and sent to the laboratories as soon as possible.

The Paediatrician on Paediatric Assessment Unit (PAU) should be informed. SBR results should be chased and plotted on the correct chart for the babies chronological age (based on the babies gestation-appropriate nomogram).

If the SBR is below treatment level a decision should be made as to if and when a repeat sample is required and parents should be phoned with the result.

If the SBR is at or above exchange level parents should be phoned and arrangements made for baby to be admitted to Worcestershire Royal Hospital.

If the SBR is at or above treatment threshold by upto 50 µmol/l then contact Paediatrician on PAU to arrange review (physical examination, feeding assessment, blood results and parental engagement). If all is satisfactory and the rate of bilirubin rise is <6µmol/l/hr then home phototherapy can be considered. A home phototherapy criteria checklist should be completed.

The Paediatrician should discuss with the parent/carer the risks and benefits of home phototherapy and have their agreement to follow all written instructions. They should then complete a consent form.

They should be referred to the Neonatal Outreach Team who will meet with the parent/carer to complete the home phototherapy competency package. This will include providing a leaflet with all instructions, the home phototherapy equipment and:

- Ensuring parent/carer knows how to apply the equipment, switch it on and how to clean the equipment.
- Parents/carers are aware that phototherapy should be sustained for as long as possible each day, ideally >18 hours per day
- Know the importance of applying the eye protectors and how to do this.
- Know how to summon help 24 hours a day if they have any concerns

## WAHT-KD-015 Neonatal Key Documents

- Know how to monitor baby's temperature and complete feeding and output chart
- Know how to care for baby's skin whilst having phototherapy.

Parent/carer will be asked to sign a consent form and a loan of equipment form.

Once the competency package is completed baby can be discharged home with parent/carer. The Neonatal Outreach Team will arrange to visit the following morning to monitor the baby's progress and measure the serum bilirubin levels.

During each visit the Outreach Sister will:

- Follow 'Guideline for the initial Neonatal Outreach home visit' (WAHT-KD-015)
- Assess babies feeding and elimination by reviewing the completed feed chart.
- Check babies axilla temperature.
- Review 'phototherapy hours' by calculating number of hours bilisoft used.
- Take blood sample for SBR
- Discuss any concerns parents/carers may have

Serum bilirubin levels should be reviewed by the Paediatrician and repeated every 24 hours until the level is  $>50\mu\text{mol/l}$  below the phototherapy level for the babies chronological age (based on the babies gestation-appropriate nomogram). At which point phototherapy can be discontinued.

If at any point during home phototherapy the baby shows signs of illness or serum bilirubin levels rise or non-compliance by parents then baby should be re-hospitalised.

Serum bilirubin should be re-measured 12-24 hours after discontinuing phototherapy to detect a rebound in bilirubin levels.

If serum bilirubin levels remain  $>50\mu\text{mol/l}$  below the phototherapy level for the babies chronological age then the home phototherapy equipment can be removed from the home.

The Neonatal Outreach Team will arrange a follow-up visit 2-3 days later and if appropriate discharge to the Health Visitor.

**Appendix 1**

**Home phototherapy criteria checklist**

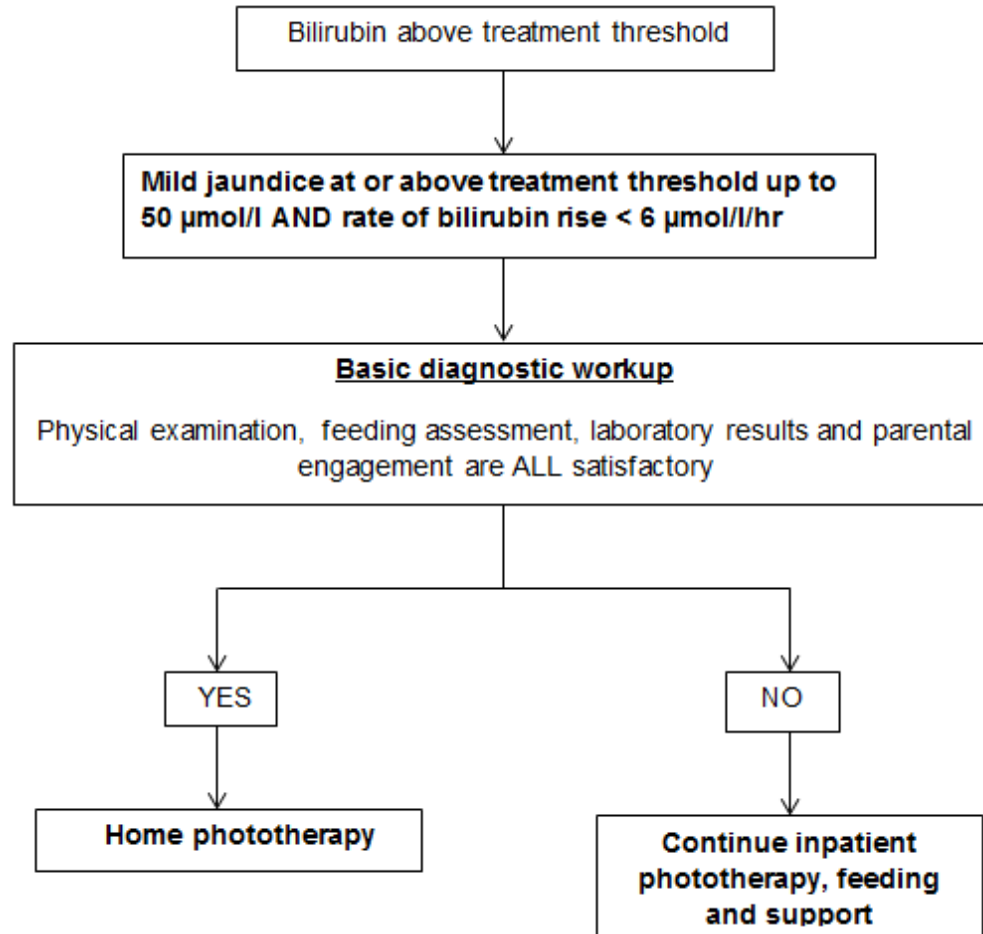
	YES	NO
Birthweight > 2.5Kg		
Gestation > 35 weeks		
Age >48 hours		
No feeding issues		
< 10% weight loss		
Examination by Paediatrician		
FBC		
Group & coombs		
SBR		
SBR rise is <6umol/l/hr		
SBR is <50umol/l above treatment line		
Physiological jaundice (no infection/haemolysis)		
Access to private transport		
Access to telephone		
Access to electricity (not coin meter)		
Parents <ul style="list-style-type: none"> <li>• Competent</li> <li>• Understand English</li> <li>• Understand how to operate equipment safely</li> </ul>		
Outreach able to visit next day		

<b>MEETS ALL CRITERIA FOR HOME PHOTOTHERAPY</b>		
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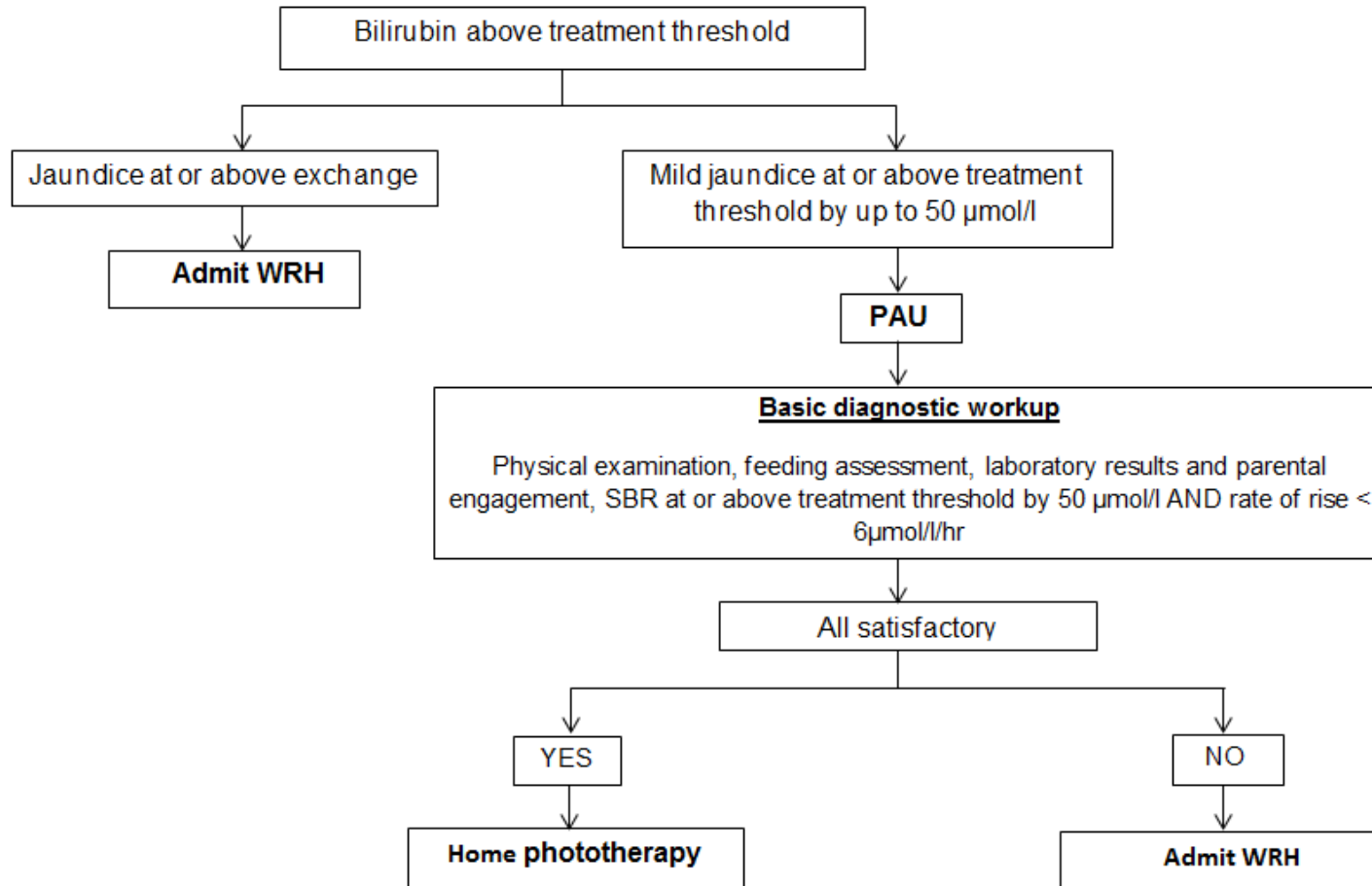
Appendix 2

Jaundiced baby >35 weeks gestation on TCU/NUU



Appendix 3

Jaundiced baby at home <10 days





Appendix 3

**Parental / Carer Agreement Form for Home Phototherapy**

- I have been given sufficient information to enable me to choose home phototherapy for my baby. It has been fully explained to me and I will adhere to the guidance given to me when using the phototherapy equipment. I will hand it back in the way it was given.
- I take responsibility for the correct use of the equipment, which has been demonstrated to me.
- I will ensure the eye shields are correctly applied to my baby.
- To ensure adequate nutrition and hydration, I will feed my baby regularly, as instructed by outreach.
- I, or another carer (responsible adult), will closely monitor my baby whilst they receive phototherapy.
- If I am concerned at any point I will immediately contact Outreach (or NICU, if outside working hours), for advice.

Baby's Name	Sticker
Parents / carers Names	
Parents contact numbers	
Outreach contact numbers	
Parents signature	
Date	
Outreach Sister Signature	
Date	

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Appendix 4  
Competency for Performing Phototherapy at Home

<b>Competency for Performing Phototherapy at Home</b>			
<u>Area of concern: Parent/carer to understand the reason for phototherapy and be able to provide safely and correctly at home with neonatal outreach support.</u>	<u>Explained/demonstrated</u>	<u>Practised</u>	<u>Competent (date/sign)</u>
1. Information leaflet given and carers understand reason for phototherapy.			
2. Agreement to treatment at home signed			
3. Carer knows how to apply the phototherapy <ul style="list-style-type: none"> <li>• Insert fibreoptic pad into cover with light side facing upwards</li> <li>• Undress baby with only nappy on</li> <li>• Place baby's back onto the padded side of fibreoptic pad</li> <li>• Swaddle baby using the straps</li> <li>• Cover baby's eyes</li> <li>• Insert fibreoptic cable into phototherapy box</li> <li>• Turn phototherapy on</li> </ul>			
4. Carer knows the importance of and how to apply eye protectors			
5. Carer knows how to keep equipment clean			
6. Carer knows to only remove baby for nappy changes <ul style="list-style-type: none"> <li>• It is possible to hold and feed baby with phototherapy in place</li> </ul>			
7. Carer knows how to summon help/access to phone			

read in conjunction with the key document supporting information and/or Key Document intranet page, which will provide approval and review information

<p>8. Discuss important safety measures:</p> <ul style="list-style-type: none"> <li>• Never place baby directly on bare fibreoptic pad</li> <li>• Do not lay fibreoptic cable where it could be crushed</li> <li>• Do not bend fibreoptic pad/cable at a sharp angle</li> <li>• Do not place anything on fibreoptic cable</li> <li>• If fibreoptic cable or light pad become ripped or damaged stop use and contact Neonatal Outreach immediately</li> <li>• Do not scratch/touch or soil fibreoptic lenses at the end of the fibreoptic cable</li> <li>• Do not expose light box to any liquids as it is not waterproof</li> <li>• Do not place light box near a heat source</li> <li>• Ensure the light box air vents are free</li> </ul>			
<p>9. Discuss feeding and how to complete feed charts.</p>			
<p>10. Discuss how to check and record baby's temperature</p>			
<p>11. Discuss skin care advice</p> <ul style="list-style-type: none"> <li>• No creams/oils/lotions</li> </ul>			
<p>12. Complete equipment loan form</p>			
<p>13. Ensure carer has contact phone numbers for Neonatal Outreach, Neonatal Unit and Transitional Care Unit</p>			
<p>14. Carer aware that if baby becomes unwell, jaundice level rises or they do not comply with treatment arrangements will be made to admit baby to hospital</p>			