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1. Introduction and Who Guideline applies

This guideline applies to all staff working in the maternity unit and community.

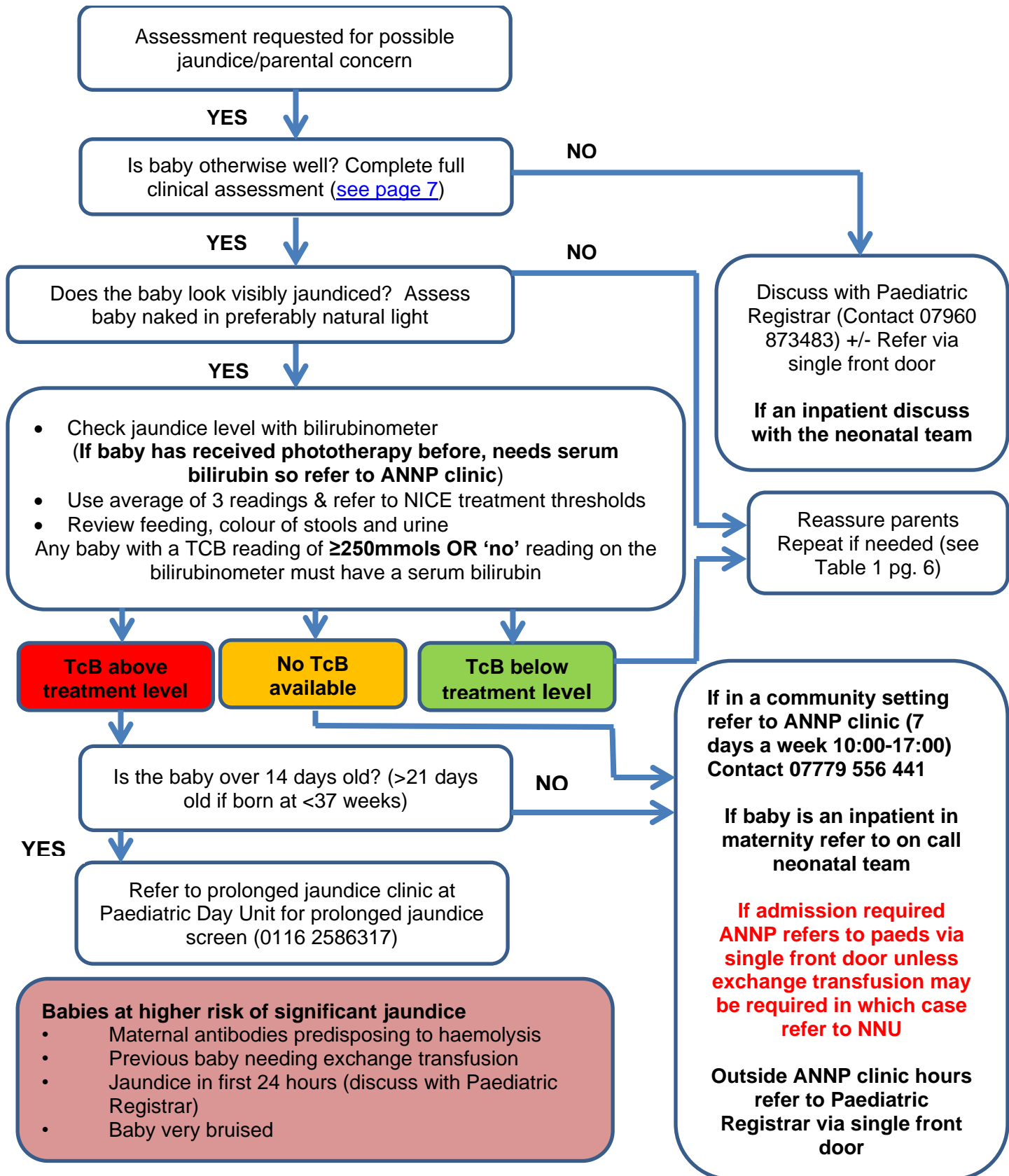
This guideline:

- Aligns with the national NICE clinical guideline 98: Jaundice in Newborn babies under 28 days
- Is written for hospital and community based staff
- Clarifies decision tool flow charts for hospital and community staff.

2. Guideline Standards and Procedures

- All babies identified with jaundice in both hospital and community setting please follow the flow chart on page 2.

2.1 Use of Transcutaneous Bilirubinometers (TcB) in all areas for babies ≥ 35 weeks gestation and over 24 hours



If a baby is referred for a TcB or serum bilirubin measurement and does not attend notify the community midwifery office on 01162584834 or email uhl-tr.communitymidwifeoffice@nhs.net

2.2 Assessment of jaundiced babies

- Please use this guidance in conjunction with the NICE [Jaundice in newborn babies under 28 days \(nice.org.uk\)](https://www.nice.org.uk/guidance/ng19) .
- If a baby with a gestational age of ≥ 35 weeks and who is over >24 hours old looks jaundiced, check using a transcutaneous bilirubin (TcB) level (use of Bilirubinometer is covered on page 10) unless they have previously received phototherapy in which case arrange a serum bilirubin.
- If concerns are raised in the process of a telephone assessment by the community midwife, or if parents are concerned about a baby appearing jaundiced, conduct a full face to face clinical assessment. ([see page 7](#) for full details)
- If there are additional clinical concerns about babies on the post-natal wards who are otherwise under midwifery led care, these babies should be discussed with the neonatal team. If no other concerns, follow the midwifery led jaundice pathway (flow chart [page 2](#) and [Table 1](#)).
- If the baby is over 24 hours of age and this is the first time identifying jaundice always conduct a TcB with your overall assessment.
- Consider an alternative diagnosis if the TCB is normal but clinician and/or parental concerns are still present following assessment and full clinical history/feeding review.
- TcB measurements should be plotted on the appropriate treatment threshold chart. (Examples on pages [12 to 16](#)). Plot results with each block representing 6 hours in age and time of birth written at point '0'.
- A copy of the bilirubin chart should be sent out with baby on discharge to the community if a bilirubin was done in hospital, all TCB and SBR results should also be documented on electronic records discharge to the community record.
- Charts for each gestation for use in the community can be photocopied from template at base office or can be found within the [Jaundice in newborn babies under 28 days \(nice.org.uk\)](https://www.nice.org.uk/guidance/ng19).
- It is important to note that the flow chart [on page 2](#) uses treatment thresholds based on the NICE treatment threshold charts. **Note that the threshold charts are gestational age specific.**
- 50 micromols is 5 small boxes, so >50micromol below the treatment line is >5 small boxes away from the treatment line.
- If a transcutaneous bilirubinometer is not available arrange a serum bilirubin
- If a Bilirubinometer gives a reading level of ≥ 250 micromol/litre, or a reading of zero arrange a serum bilirubin; be aware that if no reading is given the bilirubin level

may be very high. Both readings require clarification with SBR due to the relative inaccuracy of the Bilirubinometer at high levels (≥ 250 micromol/litre) as per both NICE and manufacturer's guidance.

- Use serum bilirubin measurement in babies receiving phototherapy. Babies that have previously received phototherapy are not candidates for TcB.
- If a baby appears jaundiced and has previously received phototherapy they will continue to appear jaundiced for several days following treatment. If there are ongoing concerns about jaundice following phototherapy treatment, further measurements should be by SBR.
- Babies in the community who need to be assessed and are unwell should be referred to Paediatric ED via the Paediatric registrar (contact - **07960 873483**)
- Babies in the community who are otherwise well but need to be assessed can be referred to the ANNP clinic 7 days a week 10:00 – 17:00 (contact - **07779 556 441**) Babies discharged from ANNP clinic will have documented discharge plans provided.
- If ANNP clinic is not available please refer to Paediatric Registrar via single front door
- Babies who did not need phototherapy but were close to treatment levels may receive up to 4 further reviews by the ANNP clinic before being discharged with a plan around feeding and follow-up if required.
- Babies with a gestational age of ≥ 37 weeks who are visibly jaundiced on day 14, and babies with a gestational age of < 37 weeks with jaundice lasting more than 21 days will be referred to the prolonged jaundice clinic directly without the need for a TcB.

3. Education and Training

- Awareness of babies at higher risk of significant jaundice
- General assessment of neonatal jaundice
- Plotting of bilirubin results on appropriate treatment threshold graph
- Training provided on HCSW induction and annual update as well as face to face sessions if required with regard to all aspects.
- Training for midwives and support staff on essential to job role training day
- To raise awareness of appropriate escalation for further testing and treatment.
- To raise awareness of the signs of Bilirubin Encephalopathy
- Completion of annual jaundice assessment

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be	Monitoring Lead	Frequency	Reporting arrangements
TCB is performed appropriately	Audit	ANNP Lead Quality standards midwife	Annually	Neonatal & Maternity Governance
SBR is performed appropriately	Audit	ANNP Lead Quality standards midwife	Annually	Neonatal & Maternity Governance
SBR & TCB results are plotted accurately on the correct charts and are transferred with the baby	Audit	ANNP Lead Quality standards midwife	Annually	Neonatal & Maternity Governance
Face to face assessment is completed in line with guidance.	Audit	ANNP Lead Quality standards midwife	Annually	Neonatal & Maternity Governance
Referrals to ANNP clinic, Medical review and/or Single front door are appropriate	Audit	ANNP Lead Quality standards midwife	Annually	Neonatal & Maternity Governance

5. References

- <https://www.nice.org.uk/guidance/cg98>
- Treatment threshold graphs available for download at: <https://www.nice.org.uk/guidance/cg98/resources/treatment-threshold-graphs-excel-544300525> press the tab at the bottom that specifies treatment graphs.
- Community threshold graphs for recording TCB templates available from team leads for photocopying.

Related documents:

- [Jaundice Neonatal UHL Childrens Hospital Guideline.pdf](#) Trust ref: C32/2019 [Jaundice - Neonatal UHL Childrens Hospital Guideline](#)
- [Jaundice Prolonged UHL Childrens Hospital Guideline.pdf](#) Trust ref: C17/2017
- [Exchange Transfusion and Dilution Transfusion UHL Neonatal Guideline.pdf](#) Trust ref: C21/2010
- [Home Phototherapy UHL Neonatal Guideline.pdf](#) Trust ref: C6/2023
- [Postnatal Ward Handbook UHL Neonatal Guideline.pdf](#) Trust ref: C12/2021

6. Key Words

Physiological jaundice of the newborn, Assessment of neonatal jaundice, Transcutaneous bilirubin, Serum bilirubin. Treatment threshold charts, Referral pathway

for newborn jaundice.

The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs. As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

Contact and review details	
Guideline Lead (Name and Title) S Mittal – Consultant Neonatologist L Taylor – Clinical Risk & Quality Standards Midwife	Executive Lead: Chief Nurse
July 2024: v4 Added – complete full clinical assessment if possible jaundice or parental concern Assess baby naked preferably in natural light Consider alternative diagnosis if TCB normal but concerns remain If ANNP clinic not available, ref to paed reg via sfd Compare the trajectory of the rise in differing levels over several hours Observe feeds TCB on darker skin may not record accurate measure – perform full assessment Listen to parent concerns Amended ANNP clinic opening times	

Table 1: When does a TcB need repeating in the community?

Assessment number	Gestation	Amount Bilirubin is below treatment threshold	Action
1 st Community reading	≥38 weeks	≤ 50	Repeat within 24 hours or 18 hours/first available appointment next day if risk factors present
		> 50	Repeat not needed unless further concerns
	35-37 completed weeks	≤ 50	Repeat within 18 hours/first available appointment next day
		> 50	Repeat within 24 hours or 18 hours/first available appointment next day if risk factors present
2 nd Community reading	≥38 weeks	≤ 50	Repeat within 24 hours or 18 hours/first available appointment next day if risk factors present
		> 50	Repeat not needed unless further concerns
	35-37 completed weeks	≤ 50	Repeat within 18 hours/first available appointment next day
		> 50	Repeat not needed unless further concerns
3 rd Community reading	Any	Below treatment threshold	Result still < treatment level and baby well - repeat reading if visibly jaundiced and review on Day 14 Advise parents to make contact if they have any concerns prior to this

- **Any baby with jaundice in the first 24 hours needs to be discussed with the Paediatric registrar and referred via the single front door or referred to duty team in hospital, these babies require an urgent SBR**
- **Any baby with jaundice levels above treatment level needs to be referred to the ANNP clinic or Paediatric Registrar (out of hours) following a face to face assessment**
- **ANNP clinic runs 7 days a week 10:00-17:00, outside these times referral go via the single front door**
- **Consider previous jaundice levels when making your assessment and assess the rate of rise in relation to treatment levels and consider how rapidly levels are likely to rise. Plot on the NICE threshold chart comparing the trajectory of the rise in differing levels over several hours and contact ANNP or Paediatric Registrar (outside of ANNP clinic hours) if concerned.**
- **Conduct a full clinical assessment (page 7) if either you or baby's parents have concerns**
- **Be aware of risk factors that might make bilirubin levels rise faster than usual**

If unsure what to do at any stage discuss with ANNP

Face to Face Clinical Assessment of Neonatal Jaundice

Take a full history from parents asking open ended questions on the following:

- Observe a feed for a minimum of 10 minutes to assess effective feeding and level of alertness. History: is there responsive feeding, does the baby wake spontaneously for feeds, how long does the baby feed for, does baby suck consistently, how long does the baby sleep between feeds, how many feeds has the baby taken in the last 24 hours.
- Elimination history: Voids - frequency in the last 24 hours and colour. Stools – frequency and colour
- Neurological state - general alert state and tone, visual assessment of baby's colour. Awareness of the signs of Bilirubin Encephalopathy:
 - Listlessness or lack of tone
 - Difficulty waking baby
 - High-pitched crying
 - Poor sucking or feeding
 - Backward arching of the neck and body
 - Fever
- Check the baby's skin in bright and preferably natural light and observe the baby when naked, observe colour and how far down the body you can see any change in colour. Consideration should be made when assessing babies from black, Asian and ethnic minority backgrounds as hyperbilirubinaemia may be harder to see in darker skin. TCB on darker skin may not record accurate measure of Bilirubin levels – FULL assessment is needed)
- Consider any risk factors
- Examine the sclera and gums, and press lightly on the skin to check for signs of jaundice in 'blanched' skin (NICE 2020).
- Educate parents in what to look for with regards to worsening jaundice - ensure they know to keep baby well hydrated by initiating and encouraging early, regular feeds – this may include waking a sleepy baby to feed and stimulating the baby to ensure frequent feeding;
- Explain about observing the baby for signs of lethargy.
- Listen to parents concerns and escalate when appropriate promptly through the ANNP clinic or children's' ED.
- Do not advise putting baby in the sunlight
- If the baby is less than 24 hours old refer in for Serum Bilirubin within 2 hours
- If the baby is over 24 hours of age and this is the first time identifying jaundice always conduct a TCB with your overall assessment.

Referral letter template:

Caring at its best

Date:

Patient Name:

Hospital Number (if known):

Date of Birth:

NHS Number:

Dear Doctor/Clinician,

As per UHL guidelines I am referring this _____ day old baby to you Birth Weight: _____ Kg

There were born (circle)

Preterm (<30 weeks), Preterm (30-33week), Preterm (34-36week), Term (37+ weeks)

Observations Temp: Heart rate: Resp Rate:

Urine: Bowels:

Behaviour (circle) : Floppy Jittery Irritable Appropriate

Feeding (circle): Breast Formula Mixed

They are presenting with (Check all that apply)

o Weight Loss

Today's weight..... % loss.....

o Jaundice

Transcutaneous bilirubin level (TCB):

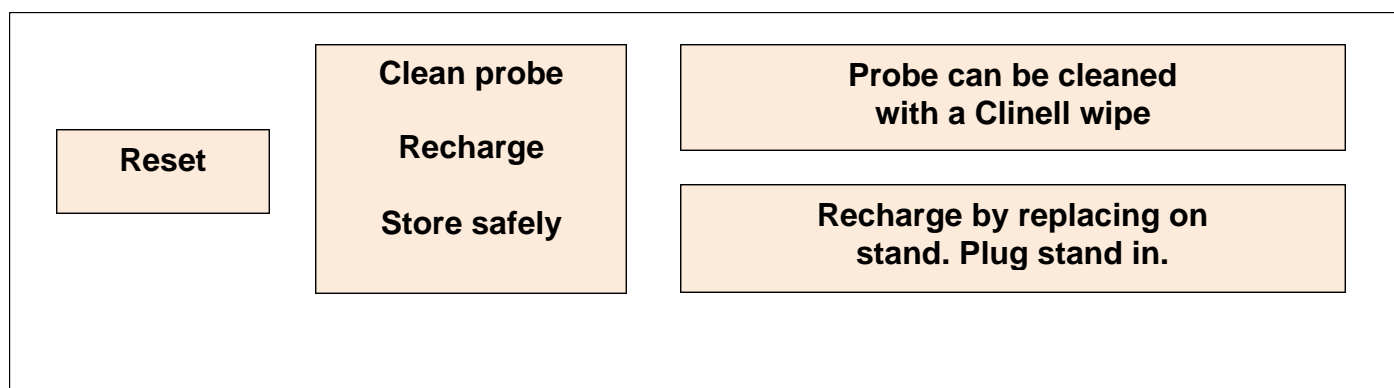
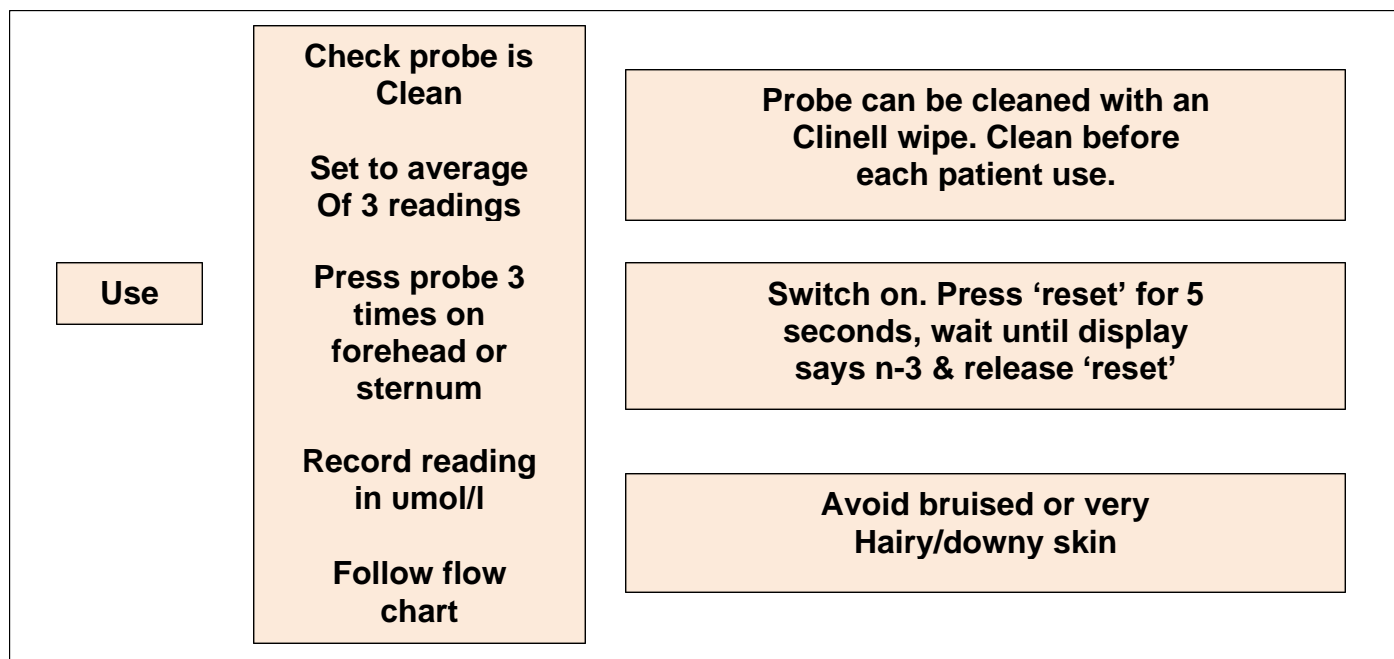
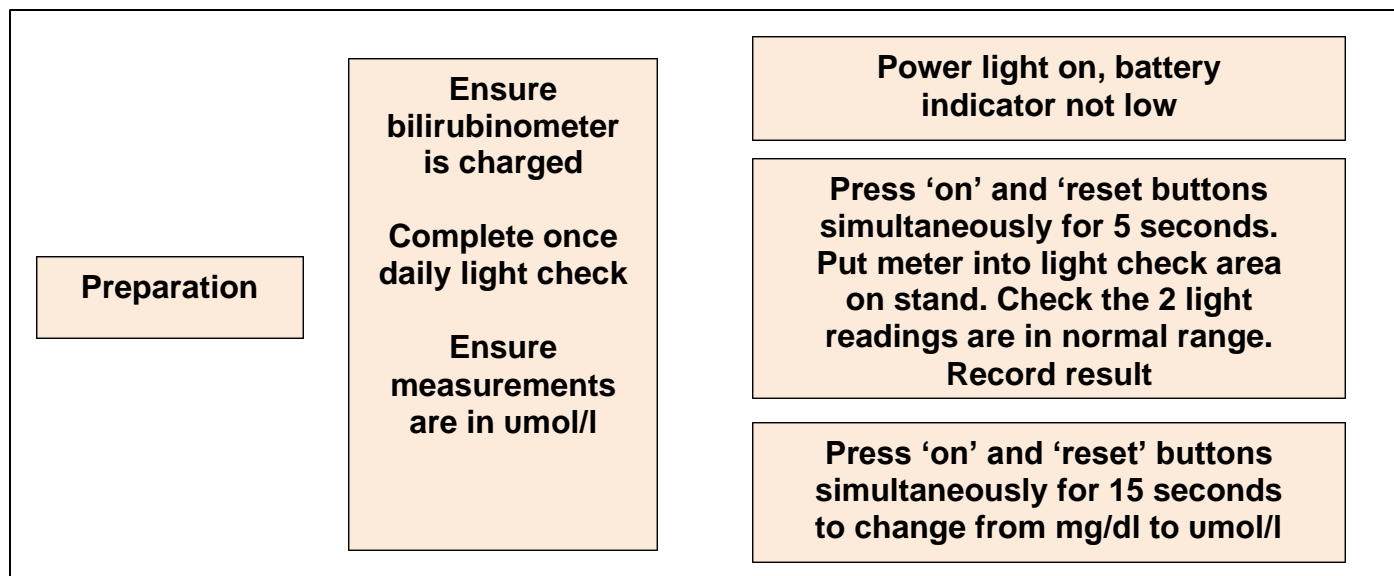
Thank you for seeing this baby,

Yours sincerely,

Sign..... Print..... Midwife / MCA

Contact Number.....

Using the Drager JM-103 Transcutaneous Bilirubinometer



Transcutaneous Bilirubin concentration measurement

Competency Statement – Self Assessment

Proceed with caution after advice/guidance from a trained user

Surname:	Forename(s):
Title (Mr/Mrs/Miss/etc)	Assignment number:
Job Title/Designation:	
Directorate/CBU/Team	

In order to become competent in the monitoring of transcutaneous bilirubin concentration measurement you should read the product manual, familiarise yourself with the UHL standard operating procedure for Jaundice in the newborn and receive practical instruction from a competent person. Self-verification of competence is undertaken by assessment against the following statements:

These statements are designed to indicate competence to use this device. Responsibility for use remains with the user so if you are in any doubt regarding your competence to use this device you should speak to your Team Lead.

Carry out an initial assessment. You must be able to answer “Yes” to all the questions before considering yourself to be competent. Please tick () all the appropriate boxes. If you are not competent, instigate learning and then repeat self-verification.

Questions to ask yourself:	Assessment dates:	
	Initial:	Final:
Are you safe using this device? Can you:	Please tick	
1. Identify clinical application for this device?	<input type="checkbox"/>	<input type="checkbox"/>
2. Identify when the device is not to be used?	<input type="checkbox"/>	<input type="checkbox"/>
3. Explain how to safely store the device?	<input type="checkbox"/>	<input type="checkbox"/>
4. Demonstrate how the device’s calibration is checked and the frequency?	<input type="checkbox"/>	<input type="checkbox"/>
5. Explain what pre-use safety checks/precautions are required?	<input type="checkbox"/>	<input type="checkbox"/>
6. Explain the importance of battery life and charging/recharging?	<input type="checkbox"/>	<input type="checkbox"/>
7. Explain the required unit of measurement?	<input type="checkbox"/>	<input type="checkbox"/>
8. Explain how the device is cleaned prior to use?	<input type="checkbox"/>	<input type="checkbox"/>
9. Explain the number of average measurements required?	<input type="checkbox"/>	<input type="checkbox"/>
10. Demonstrate how to take a reading on a baby?	<input type="checkbox"/>	<input type="checkbox"/>
11. Explain error messages and action needed?	<input type="checkbox"/>	<input type="checkbox"/>
12. Demonstrate how to plot the results on the appropriate chart?	<input type="checkbox"/>	<input type="checkbox"/>
13. Act appropriately on results?	<input type="checkbox"/>	<input type="checkbox"/>
14. Explain how to decontaminate the device?	<input type="checkbox"/>	<input type="checkbox"/>
15. Explain how to report any faults on the device?	<input type="checkbox"/>	<input type="checkbox"/>

Statement: I certify that I am aware of my professional responsibility for continuing professional development and that I realise I am accountable for my actions. With this in mind, I make the following statement:
I am competent to use the product without further training.

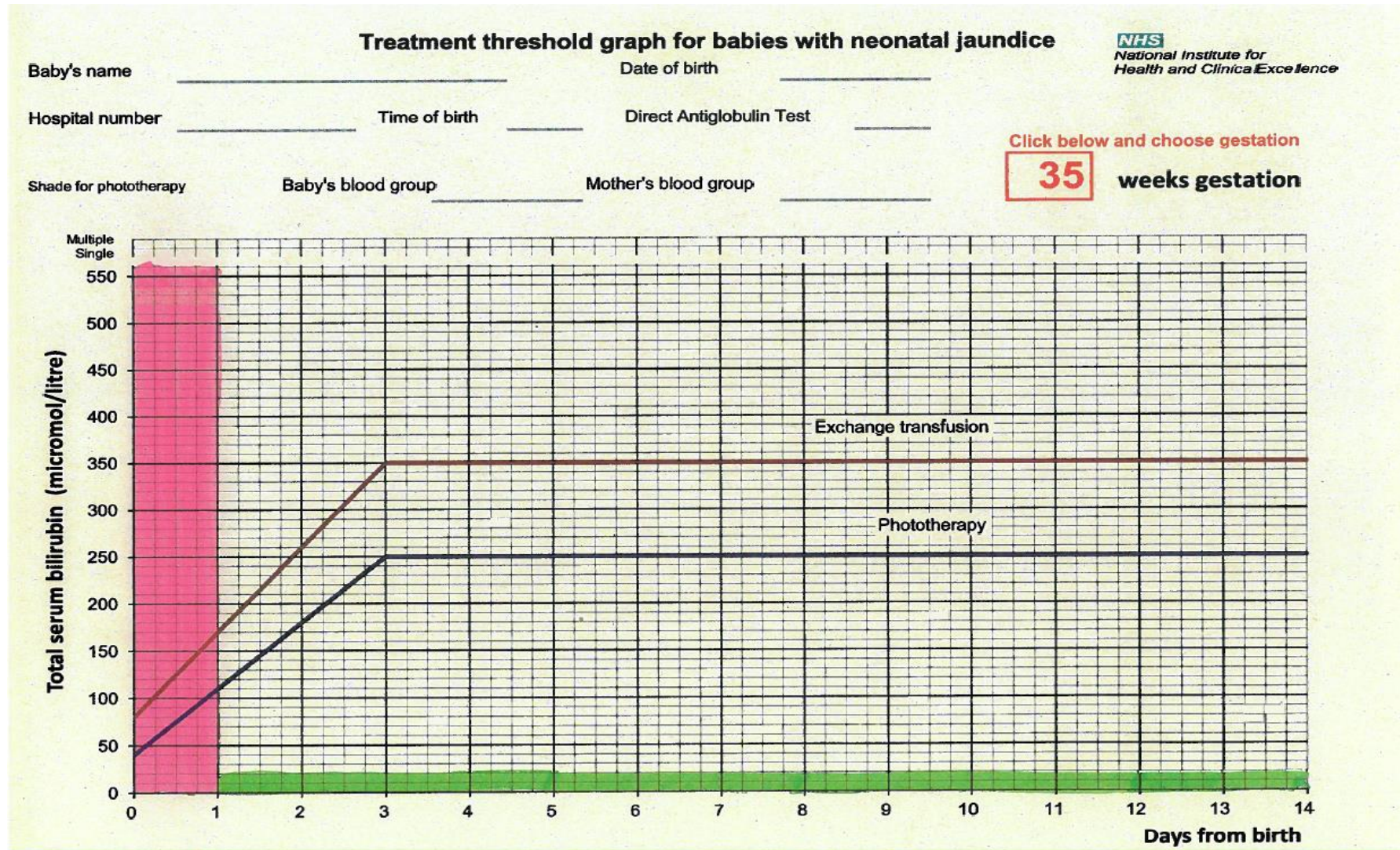
Signature: _____ Date: _____

Signature of Manager: _____ Date: _____
 To sign on receipt of completed competency sheet.

Ensure that your Manager has seen and signed this form, taken a copy for your personal file and send a copy to the women’s and children’s education department.

NICE Treatment threshold graphs

(Link- <https://www.nice.org.uk/guidance/cg98/resources>)



Treatment threshold graph for babies with neonatal jaundice

NHS
National Institute for
Health and Clinical Excellence

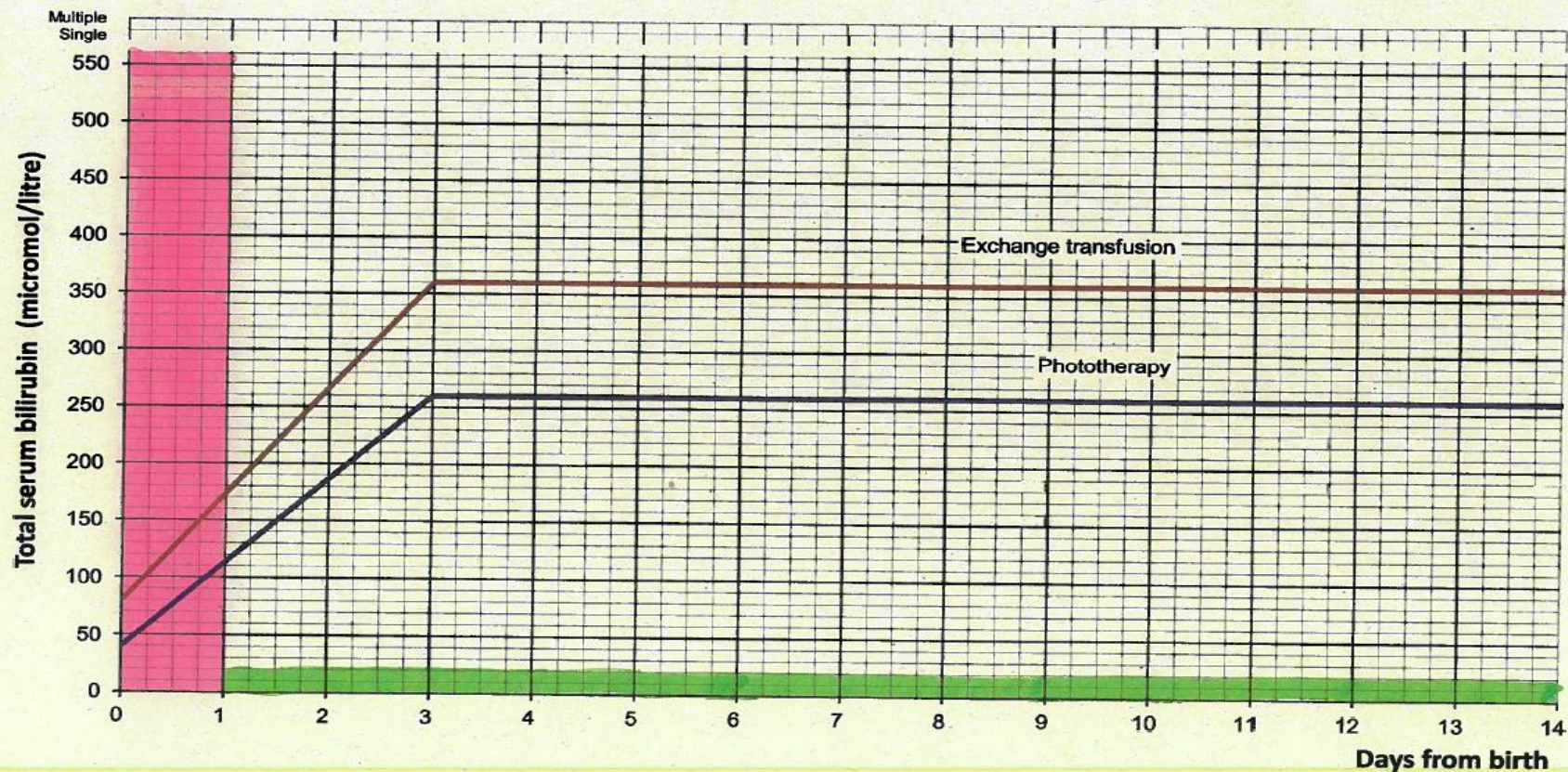
Baby's name _____ Date of birth _____

Hospital number _____ Time of birth _____ Direct Antiglobulin Test _____

Shade for phototherapy _____ Baby's blood group _____ Mother's blood group _____

Click below and choose gestation

36 weeks gestation



Treatment threshold graph for babies with neonatal jaundice

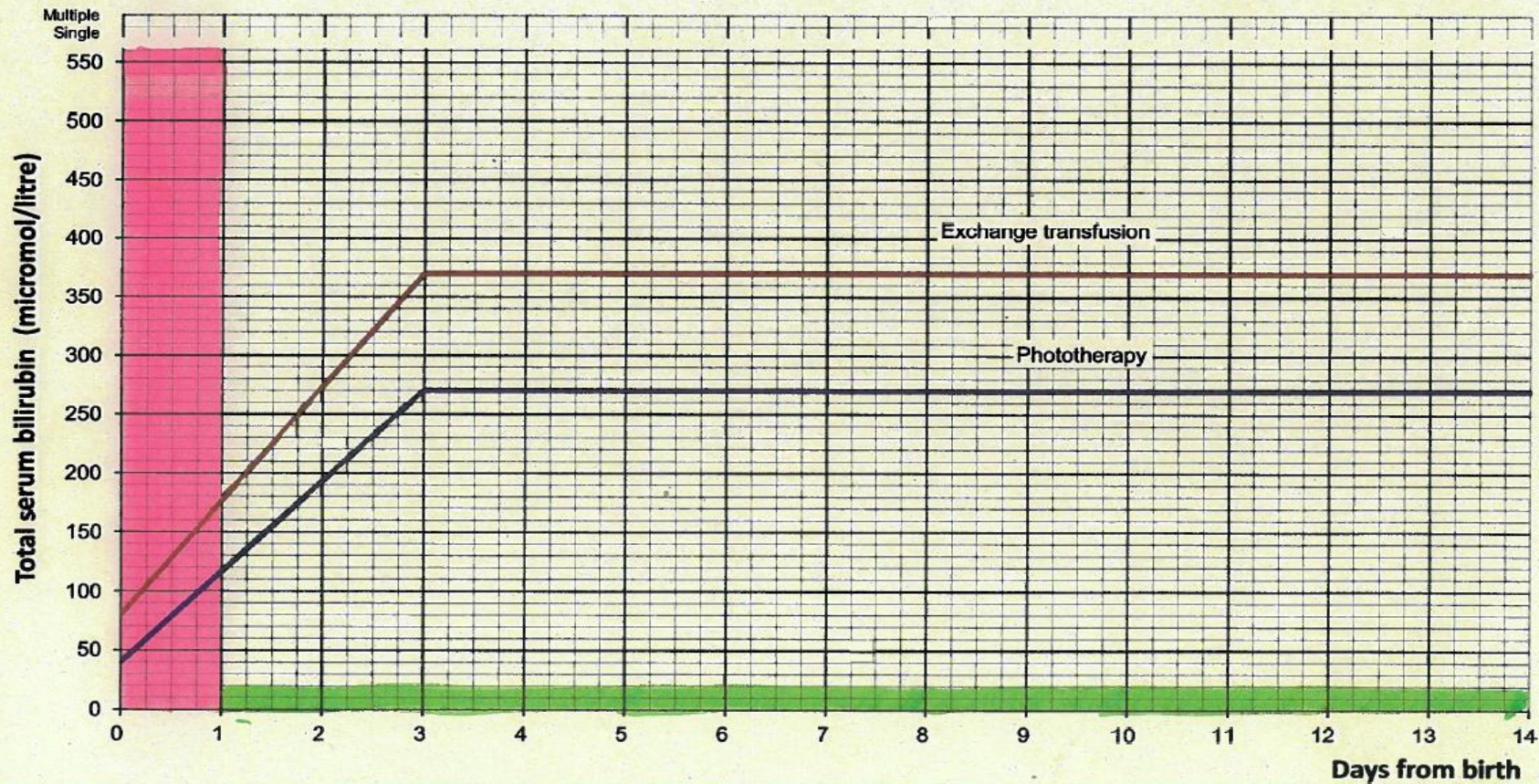
Baby's name _____ Date of birth _____

Hospital number _____ Time of birth _____ Direct Antiglobulin Test _____

Shade for phototherapy _____ Baby's blood group _____ Mother's blood group _____

Click below and choose gestation

37

weeks gestation


Treatment threshold graph for babies with neonatal jaundice

Baby's name _____ Date of birth _____

Hospital number _____ Time of birth _____ Direct Antiglobulin Test _____

Shade for phototherapy _____ Baby's blood group _____ Mother's blood group _____

Click below and choose gestation
>=38 weeks gestation

