Humber Teaching
NHS Foundation Trust

STANDARD OPERATING PROCEDURE
NEONATAL JAUNDICE
IDENTIFICATION AND MANAGEMENT

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Version Number	1.0
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Instigated by: **Date Instigated:**	
Date Last Reviewed:	3 August 2023
Date of Next Review:	August 2026
Consultation:	Rebecca Price - Modern Matron (Hull 0-19) Anna Lee Hughes 0-19 Clinical Network Meeting
Ratified and Quality Checked by: **Date Ratified:**	Children & LD Clinical Governance Meeting 3 August 2023
Name of Trust Strategy / Policy / Guidelines this SOP refers to:	

VALIDITY – All local SOPS should be accessed via the Trust intranet

CHANGE RECORD

Version	Date	Change details
1.0	*03.08.23*	*New SOP. Approved at Division Clinical Governance Meeting (3 August 2023).*

Contents

1. INTRODUCTION

Jaundice is one of the most common conditions requiring medical attention in newborn babies and is rarely serious; however for some babies it may be the first sign of a more serious liver disease and accurate diagnosis of the cause of jaundice is essential to improve treatment and prognosis.

Jaundice affects 60% of full term and 80% of preterm babies in the first week of life (NICE, CG98 2016); with a prevalence of severe neonatal hyperbilirubinemia of 0.7:1000 births. The distinctive yellow colouration of the skin and the sclera (whites of the eyes), which is characteristic of jaundice, is caused by the accumulation of bilirubin in the skin and mucous membranes.

Prolonged neonatal jaundice is defined as jaundice persisting beyond the first 14 days in a full term baby and 21 days in a premature baby (defined as gestational age less than 37 weeks) (Children's Liver Disease Foundation CLDF, 2019). Babies presenting with prolonged jaundice require assessment and monitoring of bilirubin levels. It is not sufficient to rely on visual assessment alone, as these have been found to be inadequate.

There are many causes of neonatal jaundice:

- Physiological jaundice
- Breastmilk jaundice (remember that breastfed babies may also have liver disease)
- Jaundice caused by liver disease.
- Jaundice from other causes e.g., Haemolysis
- Jaundice caused by infection.
- Jaundice caused by hypothyroidism.

Early jaundice, also termed physiological jaundice is usually harmless. Neonatal or Physiological jaundice normally reaches its peak at around four days of life and then gradually disappears in most babies by the time they are two weeks old. Early physiological jaundice is not an indication of an underlying disease, with about 10% of breastfed babies remaining jaundiced at 1 month (NICE, CG98 2016). Breastfed babies are more likely than bottle-fed babies to develop physiological and/or prolonged jaundice.

Underlying disease such as hypothyroidism and blood group incompatibility should also be considered in the baby with prolonged neonatal jaundice and would need to be assessed by a paediatrician.

Late diagnosis of childhood liver disease has potentially life changing consequences. Biliary atresia is the most common cause of end-stage liver disease in children and is rare and affects around 1 in 15,000 live births in the UK. If biliary atresia is diagnosed early, corrective surgery, can take place to establish bile flow and the best results are achieved before 8 weeks of age. Consequently, it is important to identify and act in a timely manner to avoid unnecessary morbidity. It is worth consideration that clinical recognition and assessment of jaundice can be difficult, particularly in babies with darker skin tone.
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2. SCOPE

The purpose of this document is to provide guidance for 0-19 East Yorkshire Integrated Specialist Public Health Service and 0-19 Hull Integrated Public Health Service on the identification & management of neonatal jaundice in the new-born baby.

This document applies to Humber Teaching NHS Foundation Trust Integrated Specialist Public Health Nursing Service (ISPHNS) and the Integrated Public Health Service (IPHNS) for those practitioners with an identified role or responsibility for the identification and/or management of neonatal jaundice. It is the responsibility of ISPHNS, IPHNS to ensure they have a good understanding of the assessment criteria and onward referral process for suspected neonatal jaundice.

3. DUTIES AND RESPONSIBILITIES

The chief executive holds overall accountability for the adherence to this policy on behalf of Humber. This includes ensuring the organisation has the correct infrastructure and commitment to enable its implementation and application and seeks assurance through children's and learning disability divisional general manager and clinical leads.

Service manager/Modern matron is responsible for:

- Reviewing and updating the guidance at agreed time intervals or sooner if prompted by changes in legislation or best practice requirements.

Clinical team leaders are responsible for:

- Ensuring staff compliance to the guidance including comprehensive training and induction.
- Providing support and advice to staff as needed.
- Escalating issues that cannot be managed directly by themselves - to be discussed with service manager/modern matron.

Health visitors are responsible for:

- Ensuring they have familiarized themselves with the SOP including assessment and referral criteria.
- Ensuring they adhere to the SOP and are accountable to the ISPHN Team Leaders.
- Escalating issues that cannot be managed directly by themselves to the appropriate professional.

4. PROCEDURES

This section provides detailed information and instructions which must be followed by the East Riding ISPHNS and the Hull IPHNS.

4.1. Caring for Parents and Carers

Parents/carers should have the opportunity to make informed decisions about their babies' care and treatment, in partnership with their Midwife and/or Health Visitor. This information

should be provided through verbal discussion backed up by written information which can be downloaded from the Children's Liver Disease Foundation website Children's Liver Disease Foundation | Liver Disease Research and Support (childliverdisease.org). Care should be taken to avoid causing unnecessary anxiety to parents or carers.
Information should include:

- Factors that influence the development of significant hyperbilirubinemia
- The fact that neonatal jaundice is common.
- Reassurance that breastfeeding can usually continue. Health Visitors should ensure that adequate support is offered to all women who intend to continue breastfeeding.

4.2. New Birth and any other visit under 8 weeks

Every baby should be assessed by the Health Visitor for signs and symptoms of jaundice by:

- A full feeding assessment including weight gain.
- Checking the sclera of the eyes, and the baby's gum and skin colour (which could appear yellow).
- Changes in skin colour may be difficult to see in babies with darker skin tones. Therefore yellowing may be more obvious elsewhere such as in the white of the eyes, inside the mouth, on the soles of their feet or palms of their hands. Newborn jaundice - Symptoms - NHS (www.nhs.uk)
- Discussion about the colour, consistency and volume of the baby's urine and stools with the parents/ carers.

Health visitors should be aware of the importance of urine and stool colour as part of any neonatal assessment. A jaundiced baby with pale stools and yellow urine can appear completely healthy. The baby may have potentially lethal liver disease**.** All infants with pale stools and yellow urine should be referred to a paediatrician for investigation see referral pathway (appendix 1) (Children's Liver Disease Foundation –CLDF 2018)
Normally a baby's urine is colourless; dark urine that stains the nappy requires investigation.

The stools of a breast-fed baby should be bright green/daffodil yellow colour; the stools of a bottle-fed baby should be bright green/English mustard colour. Persistently pale coloured stools may indicate liver disease and should always be investigated. Interpretation of stool colour may be subjective so the Children Liver Disease Foundation stool chart should be used. See appendix 1.

To improve early diagnosis of liver disease, the Children's Liver Disease Foundation (Jaundice the new born baby 2013, Jaundice protocol 2019) have produced a Yellow Alert https://childliverdisease.org/yellow-alert/#yellow-alert-app and stool charts which remove the subjectivity associated with assessing abnormal stool colour. See Appendix A.

- A full assessment of wellbeing, tone, alertness, lethargy, poor suck.

Health visitors must ensure they liaise with Midwives, Paediatricians and other relevant partner agencies to ensure that babies receive timely, appropriate care when neonatal jaundice is suspected.

The findings of the assessment should be documented in both the child's electronic record and parent child held record (PCHR).

4.3. Referral Routes

Following a full assessment, should there be any concerns regarding jaundice it is the responsibility of ISPHNS, IPHNS to ensure the baby is referred to either have a test by a transcutaneous bilirubinometer or a serum bilirubin and a split bilirubin blood test.

See algorithm (page 8) for referral criteria.

4.3.1. Hull University NHS Hospital Trust Referral Route

All babies in the community who meet the criteria need to be assessed and should be referred immediately to the Paediatric Assessment Unit by contacting the paediatric registrar via Hull University Teaching Hospitals (HUTH) switchboard 01482 875875 (Bleep 437) .

Any baby that is unwell, suspected of having a fever or a history of fever should be immediately referred to the local hospital on the number above. If in doubt refer. A discussion should take place with the paediatrician and determine if an ambulance and urgent assessment is required.

4.3.2. York and Scarborough Hospitals

All babies in the community who meet the criteria need to be assessed and should be referred immediately to the Paediatric Assessment Unit by contacting the paediatric registrar via York Hospital 01904 631313 (bleep 602) or Scarborough Hospital 01723 368111 (bleep 585).

4.3.3. Scunthorpe General Hospital

All babies in the community who meet the criteria need to be assessed and should be referred immediately to the Paediatric Assessment Unit by contacting the paediatric registrar via Scunthorpe General hospital switchboard 01724 282282 (Bleep 2099).

4.4. Action In The Event of Prolonged Jaundice

Prolonged jaundice is indicated in a term baby of 14 days or a pre-term baby (<37/40) of 21 days assessed as having any of the following:

- Yellow skin, sclera, roof of mouth and gums.
- A baby who is unwell and/or not progressing normally.
- A baby with abnormal stool colour and/or urine of any age.
- Any baby with prolonged jaundice that has not been investigated.

Babies with prolonged jaundice should be referred to a paediatrician as in section 4.4.

It is recommended the Health Visitor includes the following information in the referral:

- Feeding history (whether the baby is exclusively breast fed, mixed fed or formula fed only)
- The baby's weight.
- The baby's stool and urine colour.
- Mode of birth
- Areas from assessment causing concern

4.4.1. Care Plan for Prolonged Jaundice

A care plan is required for all babies with prolonged jaundice, even where there are no other clinical indications present for example dark, urine, pale stools.

4.5. Child Was Not Brought for Recommended Assessment

When the Health Visitor is aware of a baby who has not been brought for a recommended, test, blood test, the health visitor should enquire as to reasons why baby was not taken to the appointment. The health visitor should complete a further clinical assessment, considering the following factors:

- Feeding history whether the baby is exclusively breast fed, mixed fed or formula fed.
- The baby's weight.
- The baby's stool and urine colour.
- The baby's eye sclera and skin colour.

This should be a face-to-face discussion.
If symptoms persist or Jaundice remains present, the Health Visitor should refer for further paediatric assessment.
If there are no further concerns, the care plan can be closed and routine HV contacts cn be resumed.
The Health Visitor must refer to their Trusts Safeguarding Children's Policy and associated safeguarding procedures if professional concerns of neonatal jaundice persist and the baby is not brought for appointments.

4.6. Documentation

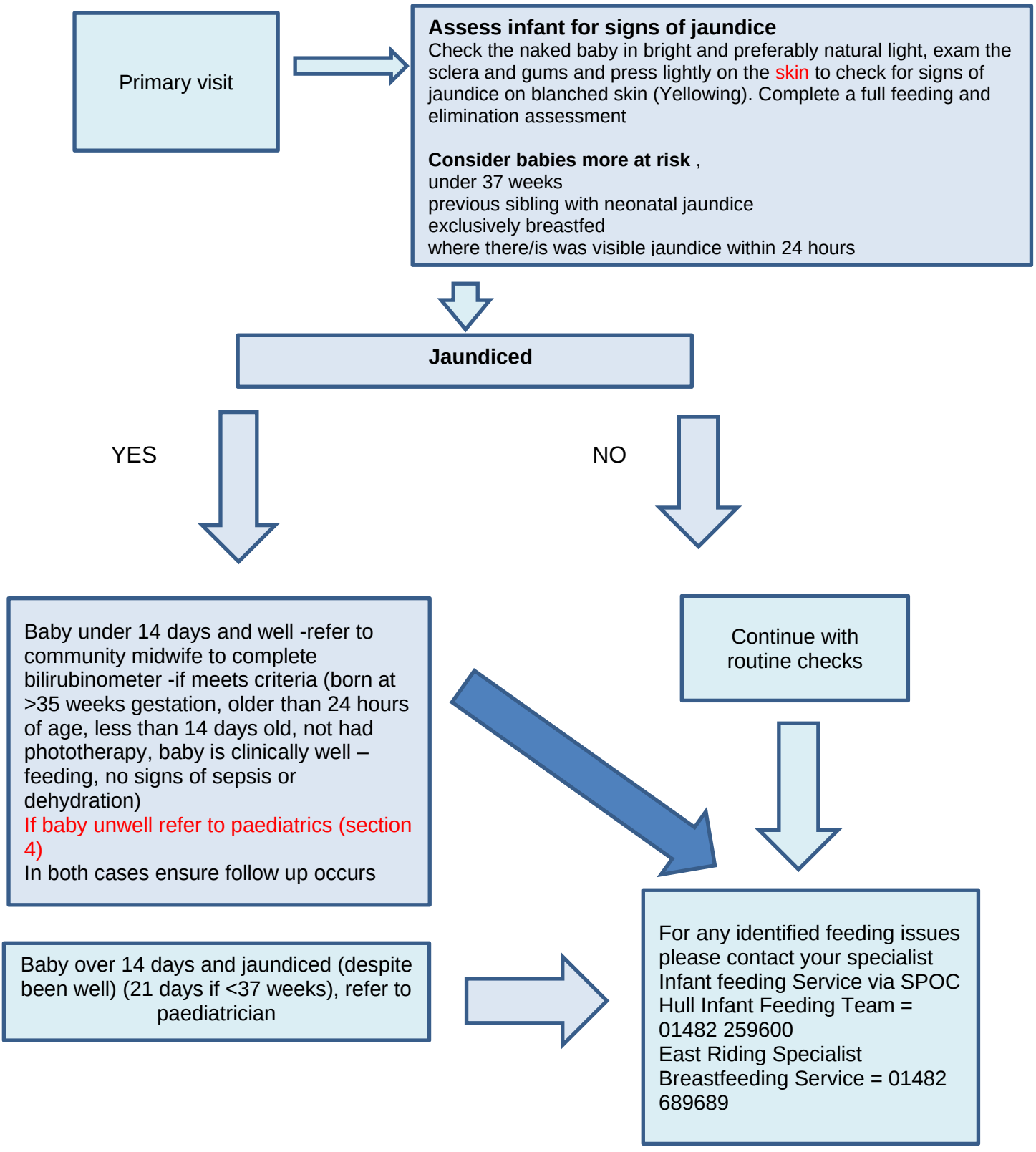
The following must be completed:
Personal Child Health Record (PCHR) - Individualised record of a child's health from birth, held by parent/carer.
Electronic Patient Record SystmOne- Practitioners are required to keep clear and accurate records as detailed in the NMC Code (2015):
All records must include an assessment of health, wellbeing and wider factors that may impact on outcomes for parent/ unborn child. It provides a summary of information gathered, risk analysis and plan for future level of care provided.

4.7. Training Requirements

Any staff with an identified role or responsibility should:

- Access, and read this document
- The guidance will be incorporated into the infant feeding management training which will be undertaken by relevant new employees within six months of commencement of employment as directed by Baby Friendly Initiative standards.
- Health Visitors will receive initial training on the new guideline via Infant Feeding annual update training

4.8. Early Identification Algorithm



5. References:

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- NICE: National Institute for Health and Care Excellence. Jaundice in newborn babies under 28 days Clinical Guidelines 98 Neonatal Jaundice 2016 https://www.nice.org.uk/guidance/cg98
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- Children's Liver Disease Foundation 2007 www.childliverdisease.org
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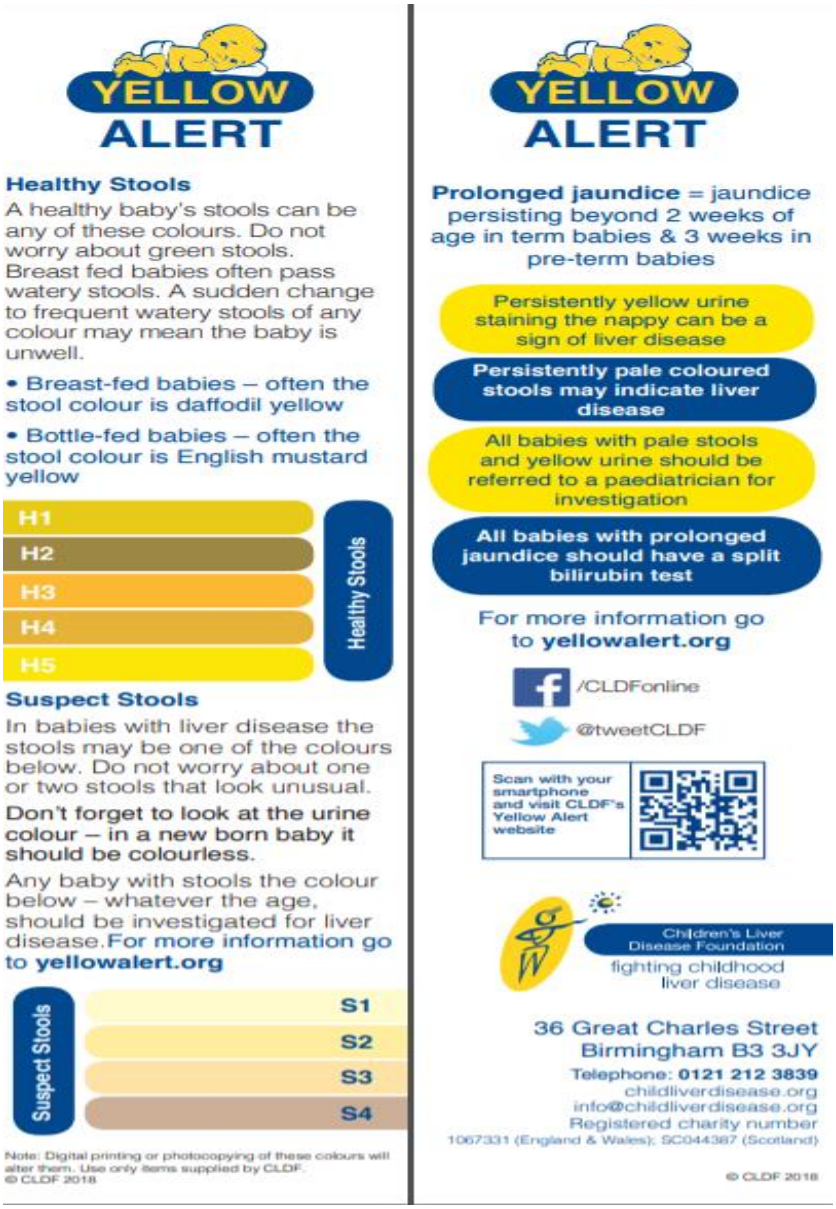
- Baby Jaundice and Liver Disease, a guide. (2018) https://childliverdisease.org/liver-information/baby-jaundice/ www.childliverdisease.org (accessed 25/10/18)
- Healthy Child Programme: Pregnancy and the first five years, Department of Health 2009 http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/prod_consu m_dh/groups/dh_digitalassets/@dh/@en/@ps/documents/digitalasset/dh_118525.pdf
- Department of Health (2009) Reference guide to consent for examination or treatment (second edition) https://www.gov.uk/government/publications/reference-guide-to-consent-for- examination-or-treatment-second-edition
- Morton A, Taylor A (2015) Yellow Alert: Improving early diagnosis of childhood liver disease. *Journal of Health Visiting.* 3(5): 524-528
- iHV Good Practice Points for Health Visitors 2019
- NHS (2022) available online at Newborn jaundice - Symptoms - NHS (www.nhs.uk) accessed on the 25/05/23

Appendix A – Yellow Alert

Please see the child liver disease website for the latest version https://childliverdisease.org/wp-content/uploads/2019/04/CLDF-Yellow-Alert-Stool-Chart.pdf



YELLOW ALERT

Healthy Stools

A healthy baby's stools can be any of these colours. Do not worry about green stools. Breast fed babies often pass watery stools. A sudden change to frequent watery stools of any colour may mean the baby is unwell.

- Breast-fed babies – often the stool colour is daffodil yellow
- Bottle-fed babies – often the stool colour is English mustard yellow

H1
H2
H3
H4
H5

Healthy Stools

Suspect Stools

In babies with liver disease the stools may be one of the colours below. Do not worry about one or two stools that look unusual.

Don't forget to look at the urine colour – in a new born baby it should be colourless.

Any baby with stools the colour below – whatever the age, should be investigated for liver disease. For more information go to **yellowalert.org**

Suspect Stools

S1
S2
S3
S4

Note: Digital printing or photocopying of these colours will alter them. Use only items supplied by CLDF.
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YELLOW ALERT

Prolonged jaundice = jaundice persisting beyond 2 weeks of age in term babies & 3 weeks in pre-term babies

Persistently yellow urine staining the nappy can be a sign of liver disease

Persistently pale coloured stools may indicate liver disease

All babies with pale stools and yellow urine should be referred to a paediatrician for investigation

All babies with prolonged jaundice should have a split bilirubin test

For more information go to **yellowalert.org**

/CLDFonline

@tweetCLDF

Scan with your smartphone and visit CLDF's Yellow Alert website

Children's Liver Disease Foundation
fighting childhood liver disease

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Birmingham B3 3JY
Telephone: **0121 212 3839**
childliverdisease.org
info@childliverdisease.org
Registered charity number
1067331 (England & Wales); SC044387 (Scotland)

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Appendix B – Equality Impact Assessment

For strategies, policies, procedures, processes, guidelines, protocols, tenders, services

1. Document or Process or Service Name: Neonatal Jaundice Identification and Management SOP
2. EIA Reviewer (name, job title, base and contact details): Louise Shafei - Infant Feeding Lead
3. Is it a Policy, Strategy, Procedure, Process, Tender, Service or Other? SOP

Main Aims of the Document, Process or Service
Please indicate in the table that follows whether the document or process has the potential to impact adversely, intentionally or unwittingly on the equality target groups contained in the pro forma

Equality Target Group	Is the document or process likely to have a potential or actual differential impact with regards to the equality target groups listed?	How have you arrived at the equality impact score?
1. Age 2. Disability 3. Sex 4. Marriage/Civil Partnership 5. Pregnancy/Maternity 6. Race 7. Religion/Belief 8. Sexual Orientation 9. Gender re-assignment	Equality Impact Score Low = Little or No evidence or concern (Green) Medium = some evidence or concern(Amber) High = significant evidence or concern (Red)	a) who have you consulted with b) what have they said c) what information or data have you used d) where are the gaps in your analysis e) how will your document/process or service promote equality and diversity good practice

Equality Target Group	Definitions	Equality Impact Score	Evidence to support Equality Impact Score
Age	Including specific ages and age groups: Older people Young people Children Early years	LOW	This SOP is only applicable to babies under the age of 8 weeks.
Disability	Where the impairment has a substantial and long term adverse effect on the ability of the person to carry out their day to day activities: Sensory Physical Learning Mental health (including cancer, HIV, multiple sclerosis)	LOW	This SOP is applicable to all babies under 8 weeks regardless of disability.
Sex	Men/Male Women/Female	LOW	This SOP is not affected by sex.
Marriage/Civil Partnership		N/A	N/A
Pregnancy/ Maternity		N/A	N/A
Race	Colour Nationality Ethnic/national origins	MEDIUM	Details in this SOP may be affected by race due to skin colour. Assessment criteria for this instance has been detailed.
Religion or Belief	All religions Including lack of religion or belief and where belief includes any religious or philosophical belief	LOW	This SOP is not affected by religion or belief.
Sexual Orientation	Lesbian Gay men Bisexual	N/A	N/A

Equality Target Group	Definitions	Equality Impact Score	Evidence to support Equality Impact Score
Gender Reassignment	Where people are proposing to undergo, or have undergone a process (or part of a process) for the purpose of reassigning the person's sex by changing physiological or other attribute of sex	N/A	N/A

Summary

Please describe the main points/actions arising from your assessment that supports your decision. See above.	
EIA Reviewer: Louise Shafei, Ellie Talbot-Imber, Debbie Jackson	
Date completed: 25 May 2023	**Signature:** L. Shafei