NHS South Yorkshire Integrated Care Board

South Yorkshire Children & Young People's Alliance

Prolonged Jaundice Screening in Neonates (PJNS)

Clinical Guideline

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Ratification Group	Guideline Development Group Care of the Acutely Ill Child Clinical Network South Yorkshire Children & Young People's Alliance
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Approved on	September 2024
Review on	September 2027

Purpose of Guidance

This guideline has been created to standardise care throughout the South Yorkshire Integrated Care System footprint, with agreed management of Prolonged Jaundice Screening in Neonates which is a common presentation in paediatric units and to ensure equity for all children and young people.

Scope of Guidance

This guideline is intended for primary use by staff working in the four acute hospital trusts in the South Yorkshire Integrated Care Board providing children's services:

- Barnsley Hospitals NHS Foundation Trust
- Doncaster & Bassetlaw Hospitals NHS Foundation Trust
- Rotherham NHS Foundation Trust
- Sheffield Children's NHS Foundation Trust

This includes, but is not limited to Doctors, Nurses, and Allied Health Professionals.

This guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

The document may be referred to by other Trusts at their discretion but does not replace or override any guidance intended to be used therein and is for information purposes only.

This document is not intended for use in Primary Care or other non-acute environments.

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Version Control

This is a controlled document. Whilst this document may be printed, the electronic version posted on the **Healthier Together Staff Hub** is the controlled copy. Any printed copies of this document are not controlled.

Date	Version	Comments	Changes Made
TBC	1 [Original]	None	None

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Key Definitions

Prolonged Jaundice in Neonates (PJNS) > 14 day in term babies (born >37 weeks) or > 21 days in preterm babies born < 37 weeks of gestation.

Unconjugated Jaundice – Unconjugated Bilirubin is highest and not exceeding > 250 mmol or conjugated Bilirubin not exceeding > 25 mmol and/or > 25% of Total Bilirubin.

Introduction & Background

Neonatal Jaundice is a very common clinical presentation in neonates, estimated occurrence in up to 15% of all neonates. Jaundice, if persists beyond 14- 21 days, in term and preterm respectively, is termed 'Prolonged Jaundice' (PJ). In more than 95% of neonates, jaundice is unconjugated, non-pathological, and resolves without any intervention or long-term consequences. However, due to concerns about a small number of cases with pathological causes, Prolonged Jaundice Screening in Neonates (PJNS) investigational aim is to rule out such conditions, such as biliary atresia, in which it is well established that early detection and surgical intervention significantly improves the outcomes. This also led to the "Yellow Alert Campaign". With this increasing awareness over last decade, we have seen steady rise in hospital referrals for jaundice screening. There are no comprehensible agreed stepwise pathways of investigations for PJNS for unconjugated jaundice. General Paediatric teams across the country have referred and adapted the NICE guidance and the investigations recommended for conjugated hyperbilirubinemia (conjugated jaundice), to investigate Neonatal jaundice in general.

This has led to highly variable practices, and in our experience, junior doctors may find this confusing, and often leads to misinterpretations. This, in turn, has led to over-investigating, unnecessary parental anxiety, exposing unimmunised babies to potential nosocomial infectious environment and laboratory costs of approximately £ 200/- per case (as of March 2023).

Nice guidance on Jaundice in Neonates < 28 days old, was last reviewed in 2016 and recently following our plea, few changes were incorporated, but is encouraged to adoption of the proposed flow chart.

Conjugated jaundice screening test (protocol) from the Hepatology Consortium of England (Three main liver centres - Kings College, London, Birmingham Children's Hospital, and Leeds General Infirmary) was last updated a decade back, but current opinion from them suggests no changes are required.

It is important to note few other causes of conjugated hyperbilirubinemia (incidence 1:2500 has cholestatic jaundice), such as Glucose 6 Phosphate Deficiency – common enzyme deficiency, but seen mainly in a subsection of the population (African, Mediterranean, and Asian), Alpha-1 Anti

Trypsin (A1AT) Deficiency (Rare, 1: 1500 to 3500 incidence rate in European ancestry, of these 15% adults develop liver issues, 12,000 Adult population with Chronic Lung Disease affected in UK), Gal-1-PUT- Inborn error of Metabolism, a common cause, approximately 1 in 19,000 to 44,000 infants in Europe and the United States resulting in Galactosemia, which needs to be considered and can be clinically screened before considering investigations.

From our collated data (multicentre study, 14 units across England and Wales with total of 746 babies, M (444) > F) it is clear that practices are not consistent and vary from hospital to hospital. It is important to recognise this is a risk-based clinical assessment and so its equally important to include - exclude family history of significant liver disease or haemolytic disorder, dark urine, stool colour, administration of IM Vitamin K, G6PD in certain ethnicities before targeted investigations.

Hence, the aim in prolonged jaundice screening is to streamline the investigations by removing ambiguity as much as possible.

Our proposal is based on the study/survey results, epidemiology of rare liver disorders and metabolic disorder screening. Some centres are already practicing a minimalistic approach and have not seen any critical incidence or missed any significant suspected liver disorders. We, therefore, propose a simplified (attached flow chart) following final approval by the National Liver Centre consortium, England and PeGHAN (Paediatricians with an interest in Gastroenterology, Hepatology and Nutrition) a subgroup of British Society of Gastroenterology, Hepatology and Nutrition. This can be implemented and an audit can be undertaken to evaluate and hone the approach as clinically appropriate.

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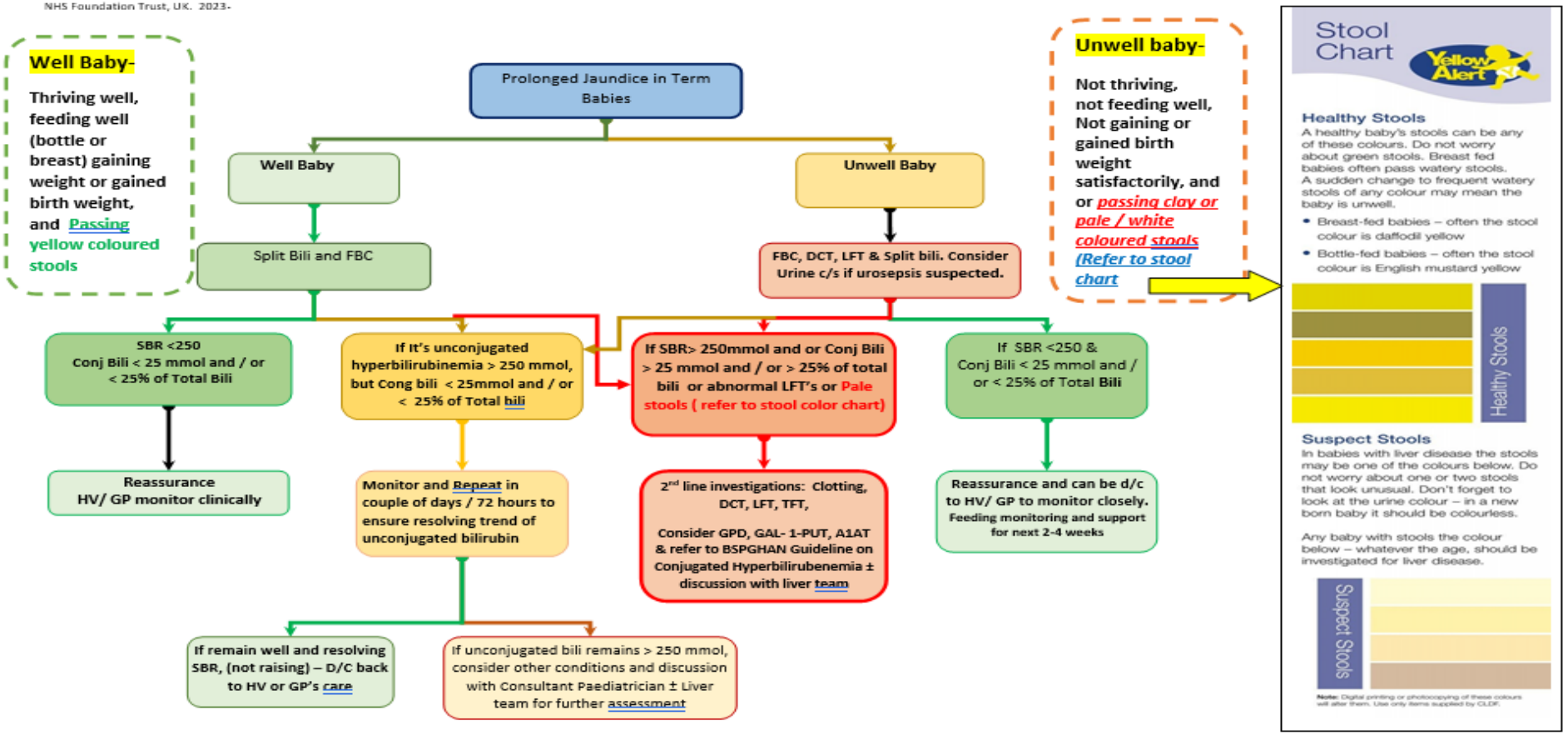
Flow chart for Prolonged Jaundice in Term Babies Screening

Proposed Prolonged Jaundice Pathway following national audit 2022- 2023,

UK Multi-center practice and adaptation of Guidelines from NICE and Liver centre conjugated hyperbilirubinemia pathway. Copyright reserved to Dr Nagendra M Rao, Consultant Paediatrician, Doncaster and Bassetlaw NHS Foundation Trust, UK. 2023-



PIER

Framework adapted with permission from PIER: Paediatric Innovation, Education & Research Network

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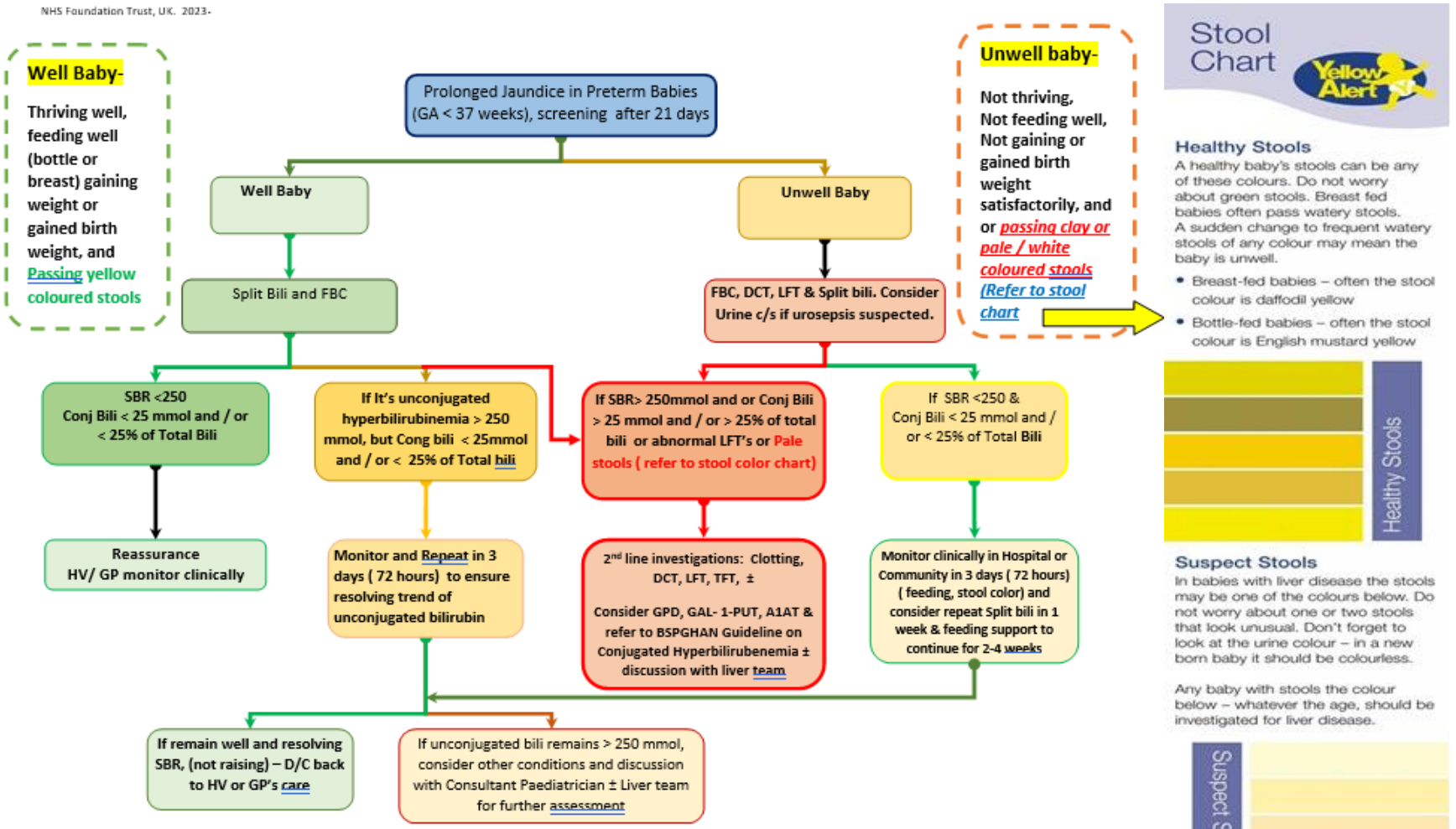
Flow chart for Prolonged Jaundice in Preterm Babies Screening

Proposed Prolonged Jaundice Pathway for Preterm baby following national audit 2022- 2023,

UK Multi-center practice and adaptation of Guidelines from NICE and Liver centre conjugated hyperbilirubinemia pathway. Copyright reserved to Dr Nagendra M Rao, Consultant Paediatrician, Doncaster and Bassetlaw NHS Foundation Trust, UK. 2023.



Review Timeline

This policy will be reviewed in its entirety on a three-yearly basis, as per standard practice, by the members of the Guideline Development Group within the Care of the Acutely Ill Child Network. If significant issues are found as a result of the audit process, a review will be conducted in advance of this to ensure patient safety. As part of the audit process, there is scope to make minor amendments to the policy built into the document, and these will be reflected in the version control table visible at the front of this document.

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