Kent Surrey and Sussex Neonatal Operational Delivery Network

Pulse Oximetry Screening	
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Distribution	Neonatal Units in KSS
Implications of race, equality & other diversity duties for this document	This guideline must be implemented fairly and without prejudice whether on the grounds of race, gender, sexual orientation or religion

Content

Purpose of Guidance:

To help identify infants with congenital heart disease that may be missed by antenatal screening and postnatal examination

Introduction/background:

- Congenital heart disease (CHD) is the most common type of congenital abnormality, affecting about 6.6/1000 births in UK [1]
- Antenatal ultrasonography and the newborn examination can miss some babies born with CHD which may be identified by pulse oximetry
- However a negative screen on pulse oximetry does not completely exclude CHD as it may miss defects such a coarctation of the aorta and hypoplastic left heart

Hospital births

- Aim for every baby (excluding those admitted to OFNU) to have pulse oximetry before discharge by the attending midwife/Midwifery Support Worker/ other HCP as necessary and either:
    - at 4-8hrs age if this can be achieved (in line with Pulse Ox study) or
    - simultaneous with NIPE and within 24hrs age
- See Appendix 1 for video of how to perform
- Follow flowchart below for actions

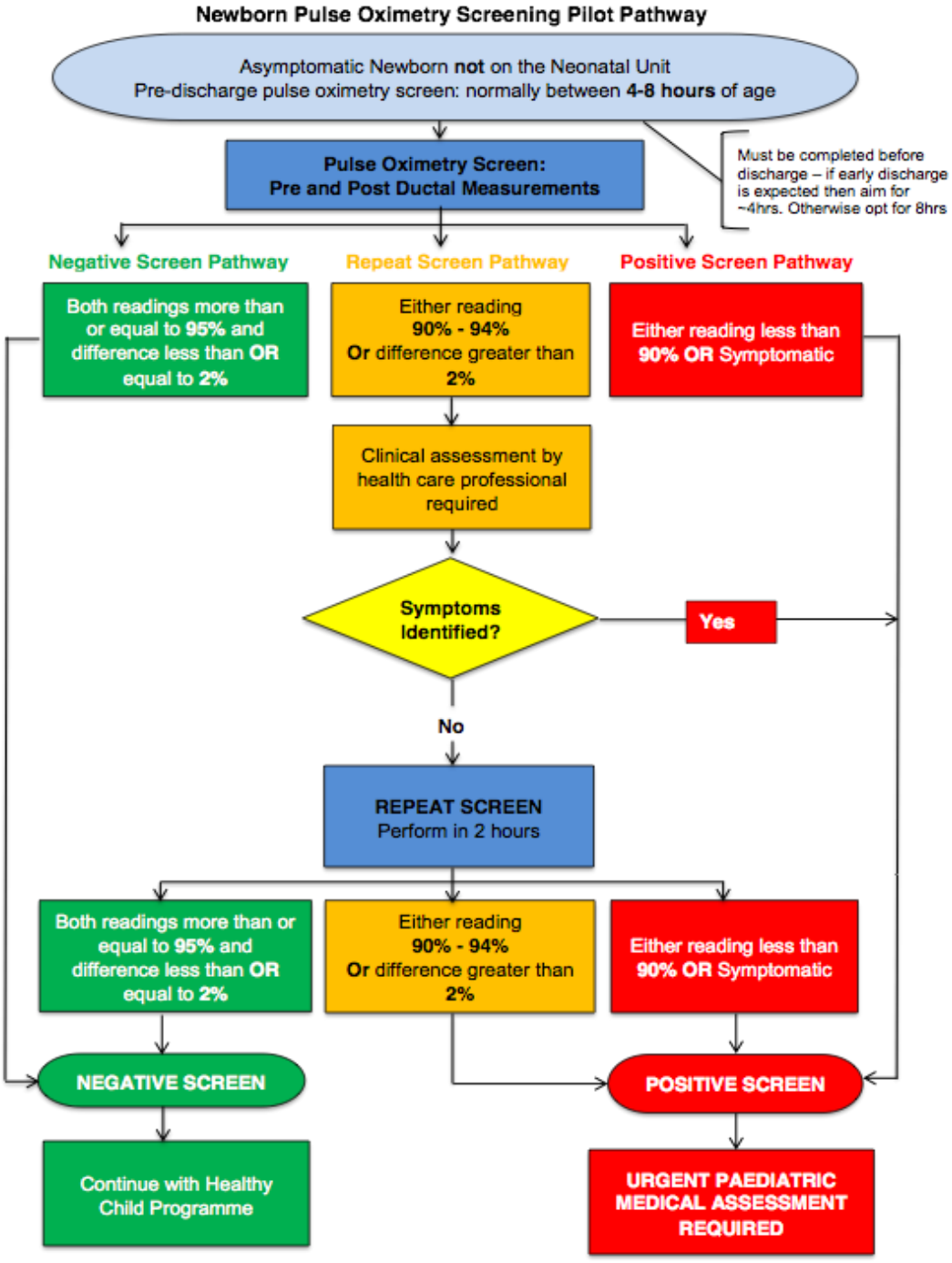
Homebirths - this section will be subject to community midwifery team availability and arrangements so local amendments are likely

- During daytime aim for pulse oximetry between 4-8 hrs age
- Babies born out of hours (17:00 – 08:00) aim for pulse oximetry the following morning and where feasible perform simultaneous with the NIPE
- If result is positive midwife to inform on call neonatal team, arrange for immediate transport to hospital by ambulance and accompany baby (oxygen should be given to keep saturations $\geq$ 95% in term baby)
- If result is on 'repeat screen pathway' midwife to contact on call neonatal team for baby to be assessed as a ward attender and have repeat test (no later than 4hrs* after the 1st reading) – parents will bring baby to OFNU and midwife should advise them that baby will need to be admitted if the test is positive or any signs of heart disease identified in baby

*Note: longer time to repeat screen for home births to allow for transport time

Procedure for all newborns (not on the neonatal unit)

Measure pulse oximetry on right hand (pre-ductal) and one foot (post ductal)



Scope of Guideline Framework

The guideline is relevant to all Neonatal Units covered by Kent Surrey and Sussex Neonatal ODN. This includes the following hospitals:

Kent, Surrey and Sussex	
Medway Hospital NHSFT	-Medway Maritime Hospital, Gillingham
East Kent Hospitals University NHSFT	- William Harvey Hospital, Ashford -Queen Elizabeth the Queen Mother, Margate
Ashford and St Peter's NHSFT	-St Peter's Hospital, Chertsey
University Hospitals Sussex	-Royal Sussex County Hospital, Brighton -Princess Royal Hospital, Haywards Heath - Worthing Hospital
Frimley Health NHSFT	-Frimley Park Hospital
Surrey and Sussex Healthcare NHST	- East Surrey Hospital, Redhill
Maidstone and Tunbridge Wells NHST	- Tunbridge Wells Hospital, Pembury
Dartford and Gravesham NHST	- Darent Valley Hospital, Dartford
East Sussex Healthcare NHST	- Conquest Hospital, Hastings
Royal Surrey NHSFT	- Royal Surrey County Hospital, Guildford

SUMMARY OF ACTIONS

Negative screen:

- MW/MSW/HCP to record on neonatal yellow card, example of sticker (Appendix 2)
- No further action in well baby

Repeat screen:

- Record as above
- Refer to neonatal team for clinical assessment of baby
- If baby well then remains with parent; repeat screen can be performed by midwife/other trained practitioner
- If repeat is positive record and refer for admission

Positive screen: record and inform neonatal team for urgent review of baby and admission

MANAGEMENT OF POSITIVE SCREEN BABIES

- Admit to intensive care
- Choose reason for admission on BadgerNet as failed pulse oximetry screening
- Investigate for cardiac, pulmonary disease and sepsis
- Inform Consultant on call for echo

DOCUMENTING RESULTS IN NIPE LIVE

- NIPE practitioner to enter final results in NIPE LIVE under Local Risk Factor and Local Data Items (Appendix 3)
- If baby has repeat screen then neonatal team are responsible for entering final outcome of pulse oximetry with comment on action taken

Implications of not following the guidance
Potential to miss infant with congenital heart disease.

Monitoring the Process:
NPGG
Audit - especially where local arrangements differ from national PulseOx guidance and more efficient practices can be shared.

Appendices

1. Pulse oximetry to aid detection of congenital heart disease - YouTube - how to perform pulse oximetry and trouble shooting

2. Example of pulse oximetry stickers for notes

3. NIPE LIVE – entering pulse oximetry readings


NIPE Pulse Oximetry.docx

Reference Material &Associated Documents.

1. EUROCAT data prevalence CHD 2011-2018 for UK. Available at https://eu-rd-platform.jrc.ec.europa.eu/eurocat/eurocat-data/prevalence_en (Accessed 25/02/21)

2. Cawsey MJ, Noble S, Cross-Sudworth F*, et al*. Feasibility of pulse oximetry screening for critical congenital heart defects in homebirths. *Archives of Disease in Childhood - Fetal and Neonatal Edition,2016;* **101:**F349-F351.

3. Ewer AK, Furmston AT, Middleton LJ, Deeks JJ, Daniels JP, Pattison HM, Powell R, Roberts TE, Barton P, Auguste P, Bhoyar A, Thangaratinam S, Tonks AM, Satodia P, Deshpande S, Kumararatne B, Sivakumar S, Mupanemunda R, Khan KS. Pulse oximetry as a screening test for congenital heart defects in newborn infants: a test accuracy study with evaluation of acceptability and cost-effectiveness. Health Technol Assess. 2012;16(2):v-xiii, 1-184.

Version Control:

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1	**28/10/21**			
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