



British Association of  
Perinatal Medicine



# Neonatologist performed echocardiography “NPE”

*Current recommendations? Future directions?*

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NeoFOCUS-UK 2024



# Neonatologist Performed Echocardiography

## Benefits

- Understanding of unique newborn haemodynamic transition
- Recognition of patho physiologic phenotypes
- Precision based treatment
- Real time and longitudinal support
- Prompt identification of CHD

## Challenges

- Advanced skill
- Risk of poor quality scan
- Risk of delays to treatment
- Risk of patient harm
- Risk of clinician harm
- Governance essential
- Training standards required

Accreditation by professional body = gold standard governance

# Current UK training and accreditation bodies

- cPOCUS/CACTUS–Children’s ACuTe Ultra Sound (PCCS with ICS)
- PECSIG -Paediatricians with Expertise in Cardiology SIG (RCPCH)
- Paediatric cardiologists- JRCTB
- BSE - British Society for Echocardiography (?ACCE)
- NPE – *Neonatologists Performed functional Echocardiography ?*

# International developments

*Worldwide recognition that lack of training programmes and accreditation in neonatology are problematic.*



*Little agreement between countries, specialists and regions as to the optimal solution.*

→ x 4 consensus statements  
2011 - 2024

# North America & Europe: 2011

## EXPERT CONSENSUS STATEMENT

### Targeted Neonatal Echocardiography in the Neonatal Intensive Care Unit: Practice Guidelines and Recommendations for Training

Writing group of the American Society of Echocardiography (ASE) in  
collaboration with the European Association of Echocardiography (EAE)  
and the Association for European Pediatric Cardiologists (AEPC)

## Extensive recommendations .....

### Basic training

- Echo-lab based
- 6 months
- Technically demanding
- Perform 150 scans
- Review additional 150 scans
- Senior echo-lab sign off

### Advanced training

- Must be able to exclude CHD
- NICU based
- Perform 150 scans
- Review 150 scans
- Assessment in clinical context
- Cardiology overview

.....but no accreditation

# Australian Certificate in Clinical Performed Ultrasound:2013 CPSU

## Basic

- Introductory echo course
- Normal anatomy
- Routine views
- PW & CW Doppler, M mode
- Accredited neonatal training centre
- Log book 50 echos
- Supervisor sign off

## Advanced

- 2 day advanced course
- Common patterns CHD
- Common physiologies
- Cardiac output assessments
- Accredited neonatal training centre
- Log book 25 echos, 5 cases to ASUM
- Supervisor sign off

..... provides accreditation



Eur J Pediatr (2016) 175:281–287  
DOI 10.1007/s00431-015-2633-2



ORIGINAL ARTICLE

# Expert consensus statement ‘Neonatologist-performed Echocardiography (NoPE)’—training and accreditation in UK

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Shakeel Qureshi<sup>6</sup> • John M. Simpson<sup>6</sup>

BCCA, PECSIG endorsed 2016  
Neonatal and Cardiology collaboration







## NPE training.....

- Pre requisite echo course
- 6 months “paediatric cardiac centre”
- 6 months NICU
- 20% time dedicated to echo
- 10 cardiology OP clinics
- 10 CBD
- 10 DOPS
- Maintenance Log book
- 100 echos

Can that be delivered in UK?

Lacks technical details, curriculum, NPE guidelines



*Heuchan et al 2020*

.....no accreditation

## GUIDELINES AND STANDARDS

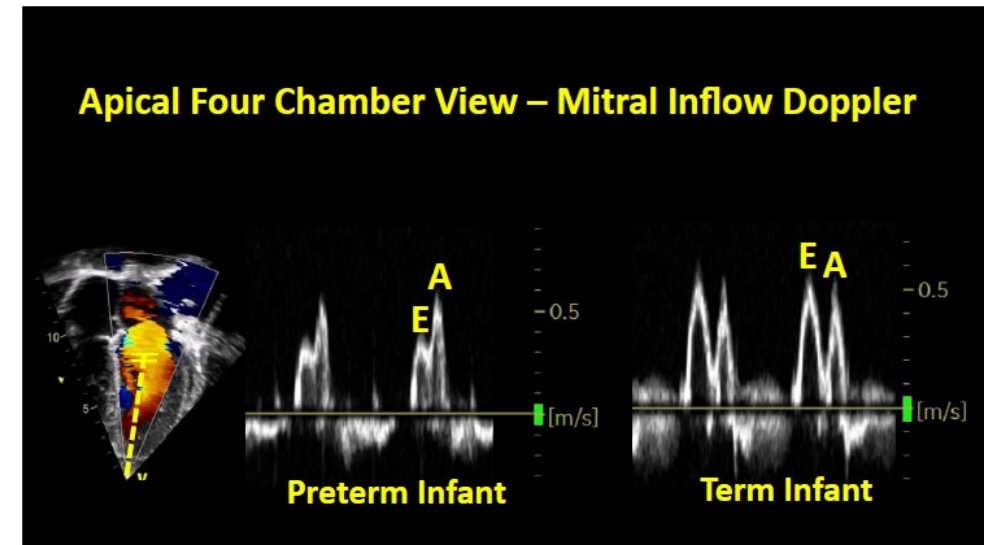
# Guidelines and Recommendations for Targeted Neonatal Echocardiography and Cardiac Point-of-Care Ultrasound in the Neonatal Intensive Care Unit: An Update from the American Society of Echocardiography

## Neonatology focus

TNE: comprehensive echo to appraise cardiovascular physiology and enhance diagnostic and therapeutic decision in the NICU.

## Comprehensive overview TNE & NH

- Indications for cPOCUS
- Indications for NPE
- Approach to defining cardiac anatomy
- Approach to functional assessment
- Disease or clinical based scenarios & specific assessment
- Guidance for TNE training
- Full time fellowship

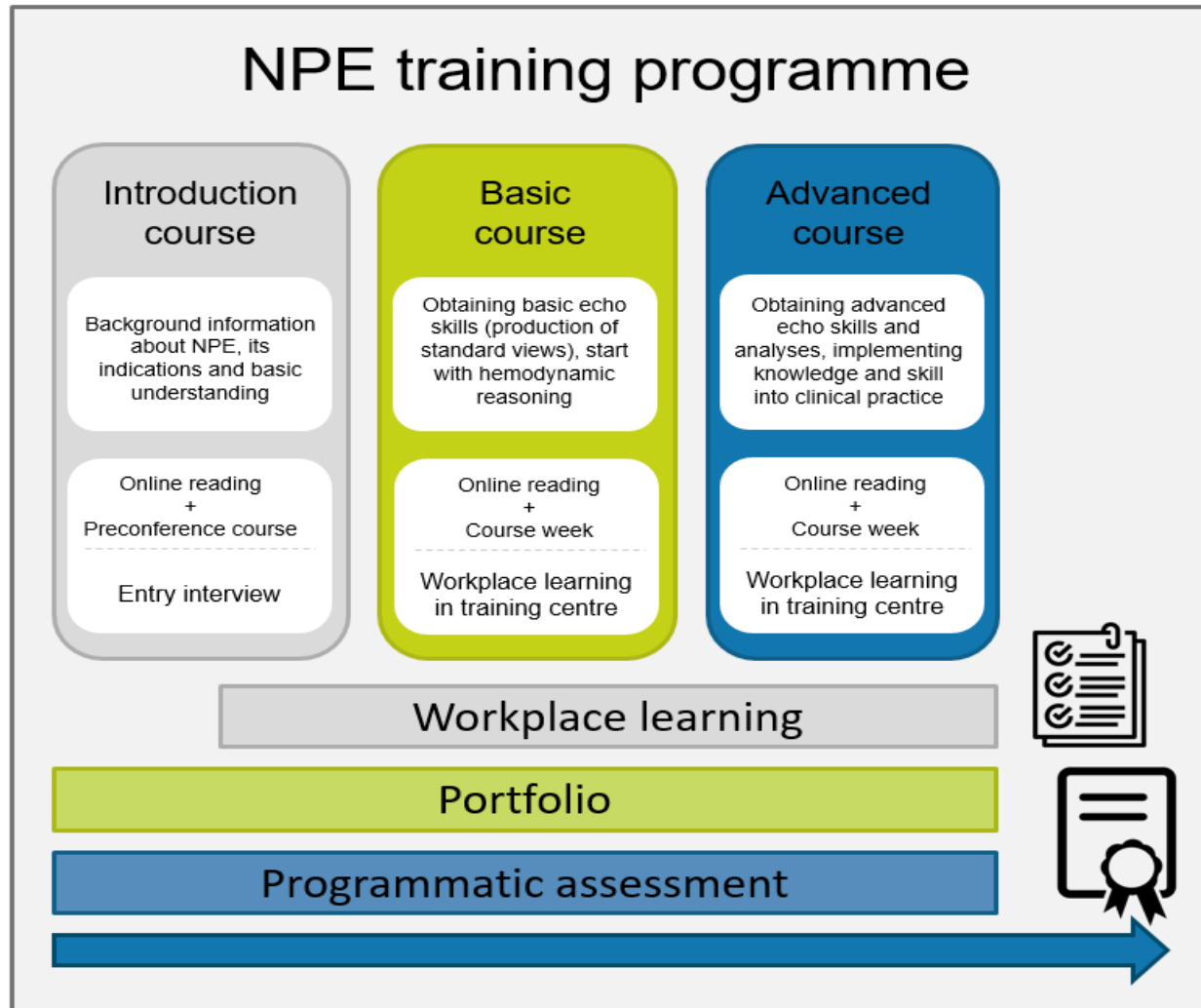


.....accredited centres

### Recommendations for neonatologist performed echocardiography in Europe: Consensus Statement endorsed by European Society for Paediatric Research (ESPR) and European Society for Neonatology (ESN)

#### ESPR NPE working group

- Define training facilities – NICU < 1500g, admitting CHD
- Define training standards – ESPR NPE accredited trainers
- Define approach to confirming structural normality
- Define basic and advanced qualification (200 scans in 12 months)
- Log book based, standard reporting
- Suggests pan European governance by ESPR



.....but remains theoretical

# Future directions UK ?

## NeoFOCUS-UK

- Recognise the need for robust training and governance in NPE
- Recognise neonatologists setting the international standards
- Opportunity to develop education, training and governance for NPE in neonatology in the UK
- Opportunity to develop strategy with UK professional bodies or international organisations



# Summary

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# Current Summary

	Cardiology Or Neonatal	Point of entry	FT	Scan based	Portfolio Based	Competency Based	Advanced & basic	Curriculum	Exit Exam	Accreditation
ESPR 2024?	N	Grid Trainee	x	x	✓	✓	✓	✓ Modules	✓ Present cases	✓ ?
NA ASE 2023	N&C	Grid or post CCST	✓ 1 year	250		✓	✓ TNE cPOCUS	x	x	x
UK BSE 2016	C&N	Grid trainee	20% 1 year	100	x	x	x	x	x	x
AU ASUM	N	Grid trainee	x	50	✓	✓	✓	x	Present cases	✓
NA & EU 2011	C	Post CCST	✓ 1 year	300				x	✓	x





## Key elements of NoPE practice 2016

- Maintenance of rigorous infection control and cardiorespiratory and thermal control
- Initial echocardiogram to include a basic structural assessment
- Where there is suspicion of structural disease seek a paediatric cardiology opinion
- Primary focus on haemodynamic assessment
- Scans should be reported on a standardised template and reported “by a neonatologists”
- Reliable storage of all images for future review
- All staff should maintain a data base of all scans performed and the principal diagnosis.
- All staff should regularly seek continuing professional development
- Regular audit and review of functional and structurally abnormal scans by peer group.