

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Document Control:

For Use In:	Norfolk & Norwich University Hospitals NHSFT		
	Maternity and Neonatal Services		
Search Keywords	Extreme preterm labour, extreme preterm birth		
Document Author:	Charles Bircher, Consultant Obstetrician David Booth, Consultant Neonatologist Ankur Sharma, Clinical Fellow Eilbhe Whelan, ST7 O&G		
Document Owner:	J Lartey (Lead Obstetrician for Preterm Birth)		
Approved By:	Maternity Guidelines Committee Clinical Guidelines Assessment Panel		
Ratified By:	Clinical Safety and Effectiveness Sub-Board		
Approval Date:	6 th December 2024	Date to be reviewed by: This document remains current after this date but will be under review	6 th December 2027
Implementation Date:	N/A		
Reference Number:	7508		

Version History:

Version	Date	Author	Reason/Change
6	30/10/2017	Charles Bircher David Booth	Section added on fetal monitoring in labour and references updated
7	21/07/2021	Charles Bircher David Booth	Checked and approved by Neonatal Governance
8	20/09/2022	Mr Charles Bircher	Updated – Antenatal corticosteroids to reduce neonatal morbidity and mortality, RCOG Green Top No. 74
9	05/07/2024	Miss Eilbhe Whelan	Updated- removal of MgSO4 dose change based on maternal weight, inclusion of PeriPrem Passport information. Management of 18+0 weeks on delivery suite Addition of processes following signs of life <22 weeks gestation

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: December 2024

Ref: 7508

Next Review: December 2027

Page 1 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Previous Titles for this Document:

Previous Title/Amalgamated Titles	Date Revised
Extreme Prematurity of Babies (less than 26 weeks gestation)	December 2024

Distribution Control

Printed copies of this document should be considered out of date. The most up to date version is available from the Trust Intranet.

Consultation

The authors listed above drafted this guideline on behalf of maternity clinical guidelines committee who has agreed the final content. During its development it has been circulated for comment to:

- Mr Charles Bircher, Consultant Obstetrician
- Sherri Richardson, Band 7 Midwife
- Nadine Barton, Band 7 Midwife
- Maternity Guidelines Committee
- Dr David Booth, Consultant Neonatologist (Original version prior to minimal changes)
- Dr Sam Duffield, Consultant Neonatologist (current version)

Monitoring and Review of Procedural Document

The document owner is responsible for monitoring and reviewing the effectiveness of this Procedural Document. This review is continuous however as a minimum will be achieved at the point this procedural document requires a review e.g. changes in legislation, findings from incidents or document expiry.

Relationship of this document to other procedural documents

This document is a clinical guideline applicable to Norfolk & Norwich University Hospitals NHS Foundation Trust; please refer to local Trust's procedural documents for further guidance, as noted in Section 4.

Inclusivity

Within this document we use the terms pregnant women, her/she. However, It is important to acknowledge that it is not only people who identify as women for whom it is necessary to access care. Maternity services and delivery of care must therefore be appropriate, inclusive and sensitive to the needs of those individuals whose gender does not identity does not align with the sex they were assigned at birth.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Contents Page

Quick reference guide.....	5
Refinement of Risk based on Visual Tool BAPM 2019 (1).....	6
Risk Stratification.....	8
1.Introduction	9
1.1.Rationale	9
1.2.Objective	9
1.3.Scope	9
1.4.Glossary	9
2.Responsibilities	10
3.Processes to be followed	10
3.1.Individualisation of care.....	10
3.2.Prior to delivery.....	10
3.3.Documentation.....	10
3.4.Estimation of gestational age	11
3.5.Risk Factors Affecting Outcome.....	11
3.6.Antenatal Corticosteroids (ACS).....	11
3.7.Magnesium Sulphate MgSO ₄	12
3.8.Tocolysis.....	12
3.9.Antibiotics.....	13
3.10.Emergency cervical suture.....	13
3.11.Discussion with parents	14
3.12.PERIPrem Passport.....	14
3.13.Mode of Delivery.....	15
3.14.Fetal Monitoring in Labour.....	15
3.15.Delayed Cord Clamping.....	15
3.16.Resuscitation.....	16
3.16.1.Team.....	16
3.16.2.Maintain Normothermia.....	16
3.16.3.Lung Inflation.....	16
3.16.4.Parents' Presence	17
3.17.Role of breastmilk.....	17
3.18.Palliative Management	17
3.19.Uncertain gestational age.....	18
3.20.Up to 21+6 Weeks	18
3.20.1.Signs of life at birth in babies up to 21+6 weeks.....	18
3.21.22 +0 to 22+6 Weeks	20

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

3.22.23+0 to 23+6 Weeks	20
3.23.24+0 to 24+6 Weeks	20
3.24.25+0 to 25+6 Weeks	21
4.Related Documents.....	21
5.References	21
6.Monitoring the processes to be delivered	23
7.Appendices.....	23
7.1.Appendix A: Outcome of Babies Born alive between 22 and 26 weeks – BAPM Framework Guidelines 2019.....	23
7.2.Appendix B – Statistics about Neonatal Care.....	30
7.3.Appendix C - Prenatal Consultation: NICU.....	32
7.4.Appendix D - Example of details to include in an email to the medical examiners.....	33
8.Equality Impact Assessment (EIA)	34

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Quick reference guide

* - see next pages for risk assessment tool

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Refinement of Risk based on Visual Tool BAPM 2019 ⁽¹⁾

1. Assess gestational age – estimate current risk of poor outcome					
Gestational age (weeks)	Extremely high risk		High risk	Moderate risk	
	22	23	24	25	26
2. Assess presence of non-modifiable risk factors – adjust risk of poor outcome					
	Increases gestational age (GA) risk			Decreases GA risk	
					
Gestational week	Beginning of week			End of week	
Fetal growth	Fetal growth restriction			Normal estimated fetal weight	
Fetal sex	Male			Female	
Plurality	Multiple			Singleton	
3. Assess modifiable risk factors – adjust risk of poor outcome					
	Increases GA risk			Decreases GA risk	
					
Antenatal Steroid	None	Incomplete course		Complete course	
Setting for birth	Local hospital			Hospital with NICU	

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Risk Stratification

Extremely high risk:

>90% chance of either dying or surviving with severe impairment if active care is instigated. This includes -

- Babies at 22⁺⁰ - 22⁺⁶ weeks of gestation with unfavourable risk factors
- Some babies at 23⁺⁰ - 23⁺⁶ weeks of gestation with unfavourable risk factors, including severe fetal growth restriction
- (rarely) Babies $\geq$ 24⁺⁰ weeks of gestation with significant unfavourable risk factors, including severe fetal growth restriction

- Palliative (comfort-focused) care would be in the best interests of the baby and life-sustaining treatment should not be offered.
- No absolute indication for paediatric attendance at the birth although for individual families this may be helpful

High risk:

50-90% chance of either dying or surviving with severe impairment if active care is instituted. This includes

- Babies at 22⁺⁰ - 23⁺⁶ weeks of gestation with favourable risk factors
- Some babies $\geq$ 24⁺⁰ weeks of gestation with unfavourable risk factors and/or co-morbidities

Moderate risk:

< 50% chance of either dying or surviving with severe impairment if active care is instituted. This includes:

Most babies $\geq$ 24⁺⁰ weeks of gestation

Some babies at 23⁺⁰ – 23⁺⁶ weeks of gestation with favourable risk factors.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

1. Introduction

1.1. Rationale

Advances in perinatal care have seen the limits of human viability move towards less mature and smaller babies. There is increased survival of babies born prematurely, although considerable morbidity and mortality persist with social, ethical, medical and economic implications.

In the perinatal period there are complex and demanding decisions to be made at various stages, which can be broadly categorised as:

- The care of a fetus and mother before the birth – including decisions on monitoring, mode of delivery and administration of steroids and magnesium sulphate
- Whether to resuscitate a newborn baby and admit him or her to neonatal intensive care.
- Whether to continue invasive intensive care or replace active treatment with palliative care.

This guideline outlines the management of Extreme Preterm Birth before 26⁺⁰ weeks gestation. The recommendations contained within the guideline align local practice with, and summarise, relevant national guidance from the National Institute of Health and Care Excellence (NICE), the Royal College of Obstetricians and Gynaecologists (RCOG) and British Association of Perinatal Medicine (BAPM).

1.2. Objective

The objective of the clinical guideline is to:

- Provide clinicians with information to enable decision-making regarding resuscitation of a baby born <26/40 and admission to neonatal intensive care
- Provide a pathway of care for the management of such babies

1.3. Scope

This guideline covers extreme preterm labour before 26⁺⁰ weeks of gestation. For gestations more than this, management should be according to “Trust Guideline for the Management of Preterm Birth (Trust Doc ID: [875](#))”.

1.4. Glossary

The following terms and abbreviations have been used within this document:

Term	Definition
ACS	Antenatal corticosteroids
BPD	Bronchopulmonary dysplasia
C- section	Caesarean section

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: July 2024

Next Review: Month year (in YYYY format)

Ref:

Page 9 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

CTG	Cardiotocography; a method of fetal monitoring
NICE	National Institute for Health and Care Excellence
NICU	Neonatal intensive care unit
NEC	Necrotising enterocolitis
NNUH	Norfolk and Norwich University Hospitals NHS Foundation Trust
PERIPrem	Perinatal excellence to reduce injury in premature birth
PPROM	Premature prelabour rupture of membranes
Preterm labour/birth	Labour or birth occurring prior to 36+6 weeks of gestational age
PVL	Periventricular leukomalacia
RCOG	Royal College of Obstetricians and Gynaecologists
ROP	Retinopathy of prematurity
SGA	Small-for-gestational-age
Tocolysis	Administration of medication to delay labour, usually to facilitate administration of steroids.
TPTB	Threatened preterm birth
UOP	Urine output

2. Responsibilities

All NNUH Maternity Obstetric and Midwifery staff are required to remain up to date with the guidance included in this document.

3. Processes to be followed

Broad recommendations:

3.1. Individualisation of care

Care of the mother, her fetus and the baby should always be individualized and should be led by senior staff in all disciplines. Parental hopes and expectations should be explored in a realistic way, drawing upon the available evidence.

3.2. Prior to delivery

When it appears that a mother will deliver her baby at a very early gestational age, all clinical information must be reviewed by the most senior available obstetric and neonatal staff. The obstetric history and antenatal care must be considered carefully. Antenatal management decisions should involve the parents and the clinical staff who will be responsible before and after the delivery.

3.3. Documentation

All communication with parents and agreed plans must be documented in full and the plans revised as needed.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

3.4. Estimation of gestational age

To avoid discrepancy in gestational age estimation, an early (between 10 weeks and 13 weeks + 6 days) dating scan should be used as the most accurate estimate of the gestational age. When carried out by an experienced ultrasonographer, scans are very accurate tools for estimation of gestational age. Similarly, if the mother is sure of her dates, the last menstrual period method of estimation may be best.

The best estimation of gestational age should be agreed with the parents and clearly documented in early pregnancy – if this has not been done prior to admission with threatened preterm delivery, it should be a priority.

3.5. Risk Factors Affecting Outcome

Growth restriction, estimated foetal weight, plurality of pregnancy, fetal abnormalities, antenatal interventions, vascular Doppler flow velocity waveforms, optimisation measures, setting of birth (local hospital vs hospital with NICU) and risk factors for infection.

3.6. Antenatal Corticosteroids (ACS)

Treatment of women with threatened preterm birth with antenatal corticosteroids decreases neonatal mortality and morbidity. The local policy would be to routinely give steroids between 24⁺⁰ and 34⁺⁶ if there is good evidence of preterm labour (cervical changes and /or raised risk on QUIPP/ Fetal Fibronectin (if available, or alternative preterm labour swab test/ or cervical length).

We also would consider a second course after discussion with the on call Obstetric consultant and it is greater than 7-14 days since the original course.

The decision to administer corticosteroids at gestations less than 24+0 weeks should be made at a senior level taking all clinical aspects into consideration.

There is growing evidence that ACS are of benefit to preterm infants born at less than 24 weeks gestation^{1,4} and therefore, local policy at this unit is that:

- *If, following discussion with parents (and where delivery is anticipated) resuscitation of the infant born between 22⁺⁰ and 23⁺⁶ is to be offered, then antenatal steroids **should** form part of this package of care.*
- *Below 22 weeks gestation, steroids should not be given.*
- *Steroids should not be given in the presence of signs of infection*

Note caution with giving steroids in diabetic patients. See [Management of Diabetes from Preconception to Post-natal period](#).

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

3.7. Magnesium Sulphate MgSO_4

MgSO_4 has been shown to be neuroprotective against cerebral palsy and cystic periventricular leucomalacia (PVL).

- MgSO_4 is recommended in women with imminent delivery between 24 and 30 weeks
- Use at extreme prematurity (<24 weeks) should be made on a case by case basis by a senior clinician. Similar principles to steroid administration for decision-making should be made, i.e. if a decision has been made for active resuscitation, MgSO_4 would seem a logical next step.
- When a decision to give MgSO_4 has been made, it should be administered if the birth is expected within the next 4-24 hours and should be continued for 24 hours or to delivery, whichever occurs first. This would be expected in a woman with regular uterine contractions with a cervical dilatation of 4 cm or more.
- Such treatment is recommended regardless of mode of delivery and corticosteroid administration.
- An intravenous loading dose of 4g over 20-30 minutes followed by a maintenance dose of 1g/hr should be given.-
- Monitoring should include maternal blood pressure (BP), pulse rate (PR) and respiratory rate (RR) and patellar reflexes done hourly.
- The urine output should be monitored with a strict input output chart to ensure the output is more than 100ml per 4 hours. Consider use of an indwelling catheter to monitor output.
- Discontinuing the infusion and seek medical review if the $\text{RR} < 16/\text{min}$, $\text{UOP} < 100\text{mL}/4\text{ hours}$ or the patellar reflexes are absent.
- Antidote for suspected magnesium toxicity
 - Calcium gluconate (1 gram = 10 mL of 10% solution - slowly via intravenous route over 10 minutes) should be given if there is clinical concern over respiratory depression.

3.8. Tocolysis

Although the benefit of corticosteroids at extreme early gestations is limited to the neuroprotective effects, if the decision is made to administer corticosteroids, consideration should be given to tocolysis see [Management of Preterm Birth \(26+0 to 36+6\)](#).

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

3.9. Antibiotics

All women in **established** preterm labour (i.e. regular uterine activity and ≥ 4 cm dilated) should receive GBS antibiotics see Group B Streptococcus in Pregnancy Trust Docs ID 845

3.10. Emergency cervical suture

In women with painless dilatation of the cervix with exposed, unruptured fetal membranes, insertion of an emergency cervical cerclage should be considered following discussion with a consultant obstetrician and consultant neonatologist.

If an emergency cerclage is being considered, the risks of the procedure including rupturing of the fetal membranes should be clearly explained.

If a suture is inserted, a plan for removal of the suture must be made and documented.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

3.11. Discussion with parents

- An agreed, accurate gestational age estimate should form the starting point for a detailed discussion with parents, which should also include other factors affecting outcome.
- If there are difficulties in reaching an agreed gestational age estimate with parents, a further discussion with another senior member or members of the perinatal team should be offered.
- Outcome predictions should be based on the best available figures for mortality and morbidity. It is especially important that parents are given consistent information - guidance on this is included in *Appendix A. All staff members involved in counselling regarding expected outcomes should use these locally agreed data in their discussions with parents.*
- To help parents prepare for the different possible outcomes after delivery, the practicalities of commencing, withholding and withdrawing intensive care, and the positive role of palliative care (where appropriate) should be included in the discussion.
- A clear plan for the delivery and subsequent care of the baby must be made and documented.
- Parental wishes, following the discussion, should be sought, discussed and clearly documented within the plan for delivery and subsequent care. *Appendix C* is a proforma for prenatal consultation and management plan, undertaken by neonatal staff.
- If appropriate, parents should be offered the opportunity to visit the Neonatal Unit.
- Families should also be offered information and support for families from charities such as Bliss.

3.12. PERIPrem Passport

PERIPrem is a unique perinatal care bundle of 11 interventions that demonstrate a significant impact on brain injury and mortality rates amongst babies born prematurely. PERIPrem also forges new ways of working, where clinicians from obstetrics, midwifery and neonatal teams join together to drive forward and revolutionise care for preterm babies.

The PERIPrem and parent passports should be completed for all women presenting in threatened preterm labour.

Links to these can be found below:

- PERIPrem Perinatal Passport for births <34/40 weeks – Trust Doc ID: [22960](#)
- PERIPrem Baby Passport – for patients to complete – Trust Doc ID: [22959](#)

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: July 2024

Next Review: Month year (in YYYY format)

Ref:

Page 14 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

3.13. Mode of Delivery

A C-section at <26 weeks is likely to be a classical incision on the uterus and therefore the immediate and long term risks of this for the mother need to be taken into account.

A decision for C-section should involve a consultant obstetrician and should be individualised and follow careful discussion with parents.

These discussions should be fully documented.

3.14. Fetal Monitoring in Labour

Currently there is no consistent evidence to suggest that continuous or intermittent fetal heart rate monitoring is of benefit in infants below 26 weeks gestation. CTG can be difficult to interpret at low gestational ages because the autonomic nervous system may be immature.

In general we do not recommend CTG during labour unless all active interventions, including emergency C- section in the presence of an abnormal CTG and neonatal support are planned¹⁹

If a mother would want all active interventions, including a C- section, there is no consistent evidence as to which is safer between CTG and intermittent auscultation at these gestations and the mother should be given the choice between these.

If C- section is not planned for fetal heart rate abnormalities, a CTG may be indicated to help plan intrauterine resuscitation²⁰

If a mother decides she would not have a C- section for fetal indications, intermittent auscultation should be performed at the mother's request, and the mother needs to be clear that abnormalities in the fetal heart rate will not result in a C- section.

Decisions around fetal monitoring in labour at these gestations should involve a Consultant Obstetrician and should be clearly documented.

3.15. Delayed Cord Clamping

Delayed cord clamping for at least 60 seconds and ideally 120 seconds should be routine practice (unless contraindicated by snapped cord, placental abruption or separation, uterine inversion, monochorionic twins or maternal condition). More information in Clinical Guideline for Delayed Cord Clamping (DCC) Therapy [Trustdocs Id: 17346](#). Use of the LifeStart™ resuscitaire should be used for both vaginal and operative births to facilitate DCC if resuscitation is being considered.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

3.16. Resuscitation

At birth, a decision should be made, based on the condition of the baby, as to whether resuscitation should proceed - once begun, the response of heart rate to lung inflation will be crucial in judging how long to continue resuscitation.

If there has been insufficient time to hold a detailed discussion with parents, the available clinical information, to include the best available estimate of gestational age, should be used to guide the decision.

In the absence of a pre-existing management plan, the condition of the infant at birth (apparent maturity, extent of bruising, spontaneous activity level, respiratory effort and heart rate) should be used to guide the decision to start resuscitation or not.

In situations where the most senior member of staff in attendance remains uncertain, it is reasonable to proceed with resuscitation and evaluate further with other senior colleagues.

Resuscitation should be carried out as described in the [Newborn Life Support](#) course handbook

3.16.1. Team

Ideally the resuscitation team should be experienced in stabilisation of extremely preterm babies and led by a consultant neonatologist.

3.16.2. Maintain Normothermia

Particular attention should be paid to the maintenance of normothermia, with the use of a plastic bag and/or other methods of delivering thermal care, and skin protection.

3.16.3. Lung Inflation

Stabilisation and supported transition with lung inflation, using an appropriately sized facemask, should be initiated.

If there is no response to mask ventilation and doubt around the *adequacy* of mask ventilation, the baby should be intubated and surfactant administered.

Use of advanced measures for resuscitation including cardiac massage and endotracheal or intravenous adrenaline are rarely required following extreme preterm birth.

However, if advanced resuscitation is considered appropriate the algorithms for resuscitation used in more mature babies should be used.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Absent heart rate or severe bradycardia persisting despite *effective* cardiopulmonary resuscitation for more than a few minutes is associated with high rates of mortality and neurodevelopmental impairment in extremely preterm babies.

The most senior experienced attending professional should decide if or when attempts to stabilise and/or resuscitate the baby should stop.

3.16.4. Parents' Presence

Stabilisation should normally be undertaken in the same room as the parents, who should be offered the opportunity to see, touch and photograph their baby. Following successful stabilisation of the baby, the mother should be supported to cuddle the baby where judged safe to do so and subsequently supported to express breast milk as early as possible.

There should be ongoing facilitation of parental contact and family involvement as partners in care.

3.17. Role of breastmilk

Mother's breastmilk is the optimal form of feeding for preterm infants. Specific health benefits for the preterm infant population include lower mortality rates, lower rates of sepsis and necrotising enterocolitis (NEC), improved neurodevelopmental outcomes, lower rates of bronchopulmonary dysplasia (BPD), retinopathy of prematurity (ROP) and fewer hospitalizations in the first year after discharge compared to formula feeding.

All pre-term babies can receive colostrum; for those babies who are not able to tolerate enteral feeds, buccal colostrum for mouth care purposes is beneficial. The provision of early colostrum to a baby is dependent on getting expressed colostrum to the neonatal unit and administered to the baby. It is reliant on all staff understanding the importance and urgency of early colostrum.

Obstetric teams should include a discussion about the benefits of early breast milk during antenatal counselling of women at risk of preterm birth and should consider recommending antenatal hand expressing if preterm birth is considered inevitable. Women should be supported in expressing colostrum within the first hour of birth as per the NNUH NICU First Drops initiative to optimise milk production and chance of breastfeeding at discharge.

3.18. Palliative Management

Care for babies where resuscitation was not started or was discontinued. With an extremely high risk of a poor outcome for the baby it is considered best practice not to offer active management. If the family wishes, a senior neonatal team member may be present at delivery to provide a brief assessment and to support midwifery staff and the family.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

- Respiratory support (including provision of positive pressure ventilation) should not be provided.
- Aim to avoid interventions that may cause discomfort or pain or separation of baby and family
- Emphasise family-centred care.

The baby should be given all the care needed for his/her comfort and the parents encouraged by appropriate staff to hold and spend time with their baby, if they wish, in a quiet and private location.

The parents should be offered bereavement counselling, including advice about post mortem examination.

3.19. Uncertain gestational age

- If gestational age is uncertain, (i.e. no dating ultrasound scan) an ultrasound scan by an experienced sonographer should be carried out, if time permits.
- If the fetal heart is heard during labour, a team experienced in resuscitation should be called to attend birth.
- At birth, a decision should then be made, in the best interests of the baby, as to whether resuscitation should proceed - once begun, the response of heart rate to lung inflation will be crucial in judging how long to continue resuscitation.
- For an infant already born (e.g. rapid delivery following arrival on delivery suite or delivery en route to hospital) where gestational age is uncertain, the neonatal team should be informed and should attend immediately to assess the baby and make a decision on whether to proceed with resuscitation.

3.20. Up to 21⁺⁶ Weeks

Expectant mothers up to 17+6 weeks gestation should be cared for on the gynaecology ward. Expectant mothers between 18⁺⁰ and 21⁺⁶ should be cared for on labour ward and/or Cley Obstetrics Antenatal ward. The obstetric team should counsel parents that at these gestations a fetus is pre-viable and cannot live.

Neonatal team input should be sought if the parents require further reassurance. The parents should be informed that, even though the baby is pre-viable, it may still show some signs of life at delivery and in these circumstances it should be registered as a live birth.

3.20.1. Signs of life at birth in babies up to 21+6 weeks

Signs of life include all or any of the following:

- Breathing
- Crying

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: July 2024

Next Review: Month year (in YYYY format)

Ref:

Page 18 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

- Sustained gasps
- Visible heartbeat through the chest wall (no need to use a stethoscope)
- Visible cord pulsation after clamping
- Obvious movement (not reflex movements which are brief movements of the arms/legs, short gasps, twitches or involuntary movements in the first minute after birth)

This link provides a video created for professional by MBRRACE which clearly explains the expected care in these situations.

[Home | Signs of life | MBRRACE-UK](#)

It is essential that a doctor (of any speciality – e.g. obstetrics, anaesthetics, neonatology) attends and confirms life and then subsequently death and this information must be provided sensitively. The times must be noted and which signs of life were noted. The doctor MUST complete a Neonatal Death certificate (NND) completely prior to the end of the shift. These are located in the Controlled Drugs cupboard on delivery suite or on the neonatal unit. Please note that the NND certificates are a double-sided document. Ensure the correct form is used – deaths UNDER 28 days of life.

Ideally a conversation will have taken place prior to birth with regards to parental expectations if this event was to occur and in which case ensure parental wishes are followed. This may include but is not limited to the following:

- skin to skin
- baby being wrapped and passed to parents
- baby taken to another room and cared for by a member of staff

If a conversation had not taken place prior to birth, sensitively ask the parents what they would like to happen by providing them option such as those above.

Be mindful parents may change their mind at any point.

If there have been signs of life, it is essential that the Medical Examiners are informed by the attending doctor via an email containing details of the pregnancy, presentation and the outcome. An example of such an email can be found in appendix D.

This ensures legal requirements are fulfilled and if the case requires referral to the Coroner. This will be decided by the Medical Examiner team. The medical Examiners can be contacted on medicalexamineroffice@nnuh.nhs.uk

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

If signs of life are noted but there is no doctor attending prior to death, refer directly to the Medical Examiners but do not complete the NND certificate. They will refer to the Coroner in these cases but it is imperative the process travels via the medical examiners in the first instance.

Ensure the correct bereavement paperwork pack is commenced which will ensure the bereavement midwifery team are informed and can provide ongoing support to both family and staff as required.

3.21. 22⁺⁰ to 22⁺⁶ Weeks

Babies born in this gestational age group are always in the High Risk or Extremely High Risk group for poor outcome.

Consideration of resuscitation for babies born between 22 – 22⁺⁶ should be based on their individualised risk assessment.

Under all circumstances, parents should have the opportunity to discuss outcomes with a senior member of the neonatal team. Senior neonatology presence at the delivery can be offered.

Resuscitation should only be attempted and intensive care offered, if, after thorough discussion with an experienced neonatologist about the risks and long-term outcomes, the clinicians and parents agree that it is in the baby's best interests.

3.22. 23⁺⁰ to 23⁺⁶ Weeks

If gestational age is 23⁺⁰ – 23⁺⁶ (i.e. at 23 weeks) a senior member of the NICU medical team or ANNP experienced in resuscitation should be available to attend the birth.

The decision to initiate resuscitation should be based on a risk assessment before the birth in conjunction with an assessment of the baby at birth.

In the best interests of the baby a decision **not** to start resuscitation is an appropriate approach if the parents have expressed this wish.

3.23. 24⁺⁰ to 24⁺⁶ Weeks

If gestational age is **certain** at 24⁺⁰ – 24⁺⁶ resuscitation should be commenced unless the parents and clinicians have considered that the baby will be born severely compromised.

If the baby is assessed to be more immature than expected, and/or born in poor condition, it may be appropriate not to start resuscitation even if the pre-birth plan was for active care.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

3.24. 25⁺⁰ to 25⁺⁶ Weeks

When gestational age is 25⁺⁰ weeks or more, it is appropriate to resuscitate babies routinely at this gestation.

4. Related Documents

- NICE. Preterm labour and birth. NICE guideline [NG25]: 20 November 2015, last updated June 2022.
- Royal College of Obstetricians and Gynaecologists. Antenatal corticosteroids to reduce neonatal morbidity and mortality. Green-top guideline no 74. RCOG press 2022
- Royal College of Obstetricians and Gynaecologists. Tocolysis for women in preterm labour. Green-top guideline no 1b. RCOG press 2011
- NHS England. Saving babies' lives version three: a care bundle for reducing perinatal mortality. July 2023. <https://www.england.nhs.uk/publication/saving-babies-lives-version-three/>
- NNUH Trust Guideline for the Management of Preterm Birth -Trust Doc ID: [875](#)
- NNUH Trust Guideline for the Use of Fetal Fibronectin and Amnisure - Trust Doc ID: [8893](#)
- PERIPrem Perinatal Passport for births <34/40 weeks – Trust Doc ID: [22960](#)
- PERIPrem Baby Passport – for patients to complete – Trust Doc ID: [22959](#)
- NNUH/James Paget University Hospital Joint Clinical Guideline for Group B Streptococcus in Pregnancy – Trust Doc ID: [845](#)
- NNUH Clinical Guideline for the Diagnosis and Management of Preterm Prelabour Rupture of Membranes (PPROM) – Trust Doc ID: [873](#)

5. References

1. Perinatal Management of Extreme Preterm Birth Before 27 weeks of Gestation (2019) A BAPM Framework for Practice - October 2019 (<https://www.bapm.org/resources/80-perinatal-management-of-extreme-preterm-birth-before-27-weeks-of-gestation-2019>)
2. Provisional births in England and Wales: 2020 (<https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/articles/provisionalbirthsinenglandandwales/2020>)
3. Prematurity statistics in the UK (<https://www.bliss.org.uk/research-campaigns/neonatal-care-statistics/prematurity-statistics-in-the-uk>)
4. Antenatal Corticosteroids Promote Survival of Extremely Preterm Infants Born at 22 to 23 Weeks of Gestation. Mori R, Kusuda S, Fujimura M; Neonatal

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: July 2024

Next Review: Month year (in YYYY format)

Ref:

Page 21 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

- Research Network Japan. J Pediatr. 2011 Jul;159(1):110-114.e1. doi: 10.1016/j.jpeds.2010.12.039. Epub 2011 Feb 22. PMID: 21334006.
5. Smith LK, Draper ES, Manktelow BN, Fenton A, Kurinczuk J on behalf of the MBRRACE-UK Collaboration. MBRRACE-UK Report on survival up to one year of age of babies born before 27 weeks gestational age for births in Great Britain from January to December 2016. Leicester: The Infant Mortality and Morbidity Studies, Department of Health Sciences, University of Leicester. 2018.
 6. Norman M, Hallberg B, Abrahamsson T, Björklund LJ, *et al*. Association between year of birth and 1-year survival among extremely preterm infants in Sweden during 2004-2007 and 2014-2016. JAMA 2019;321:1188–12.
 7. Patel RM, Rysavy MA, Bell EF, Tyson JE. Survival of Infants Born at Periviable Gestational Ages Clin Perinatol 2017;44:287–303.
 8. Mehler K, Oberthuer A, Keller T, Becker I *et al*. Survival among infants born at 22 or 23 weeks' gestation following active prenatal and postnatal care. JAMA Paediatrics 2016;170:671–77.
 9. The EPICure Study: Outcomes to Discharge from Hospital for Infants Born at the Threshold of Viability. Kate Costeloe, Enid Hennessy, Alan T Gibson, Neil Marlow, and Andrew Wilkinson, for the EPICure Study Group. [Pediatrics, Vol 106, No 4, October 2000, p. 659-671](#)
 10. Neurologic and Developmental Disability After Extremely Preterm Birth. EPICure study group. Nicholas S Wood, Neil Marlow, Kate Costeloe, Alan T Gibson, and Andrew R Wilkinson, for the EPICure Study Group. [The New England Journal of Medicine 2000 Vol 343\(6\) p.378-384](#)
 11. Neurologic and developmental disability at 6 years of age following extremely preterm birth. Marlow N, Wolke D, Bracewell M, Samara M. [New England Journal of Medicine 2005 352\(1\): 9-19](#)
 12. Patterns of Outcome at Borderline Viability: Epicure 2 survival and early morbidity Kate Costeloe: *Arch Dis Child Fetal Neonatal Ed* **2008**;93:Fi-Fviii (abstract from RCPCH meeting, York, 2008)
 13. Royal College of Obstetricians and Gynaecologists. Scientific Advisory Committee Opinion Paper; Magnesium sulphate to prevent cerebral palsy following preterm birth. RCOG press 2011.
 14. The Management of Babies Born Extremely Preterm at less than 26 weeks of gestation. A Framework for Clinical Practice at the Time of Birth. Report of a Working Group, British Association of Perinatal Medicine. Wilkinson AR, Ahluwalia J, Cole A, Crawford D, Fyle J, Gordon A *et al*. *Arch Dis Child Fetal Neonatal Ed* 2009; Vol 94 (1): 2-5.
 15. Critical Care Decisions in Fetal and Neonatal Medicine: ethical issues. Nuffield Council on Bioethics 2006.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

16. [Specialist neonatal care: quality standard](#) NICE 4 November 2010
17. [Toolkit for high quality neonatal services](#). Department of Health (DH) (2009)
18. WHO recommendations on interventions to improve preterm birth outcomes. ISBN 978 92 4 150898 8 , WHO 2015, FRANCE
19. Anna L David, Aung Soe, *Extreme prematurity and perinatal management*, The Obstetrician & Gynaecologist, 2018;20:109–17
20. American College of Obstetricians and Gynaecologists and the Society for Maternal-Fetal Medicine, *Obstetric Care Consensus Number 6, Periviable Birth*, October 2017

6. Monitoring the processes to be delivered

Compliance with the process will be monitored through the following:

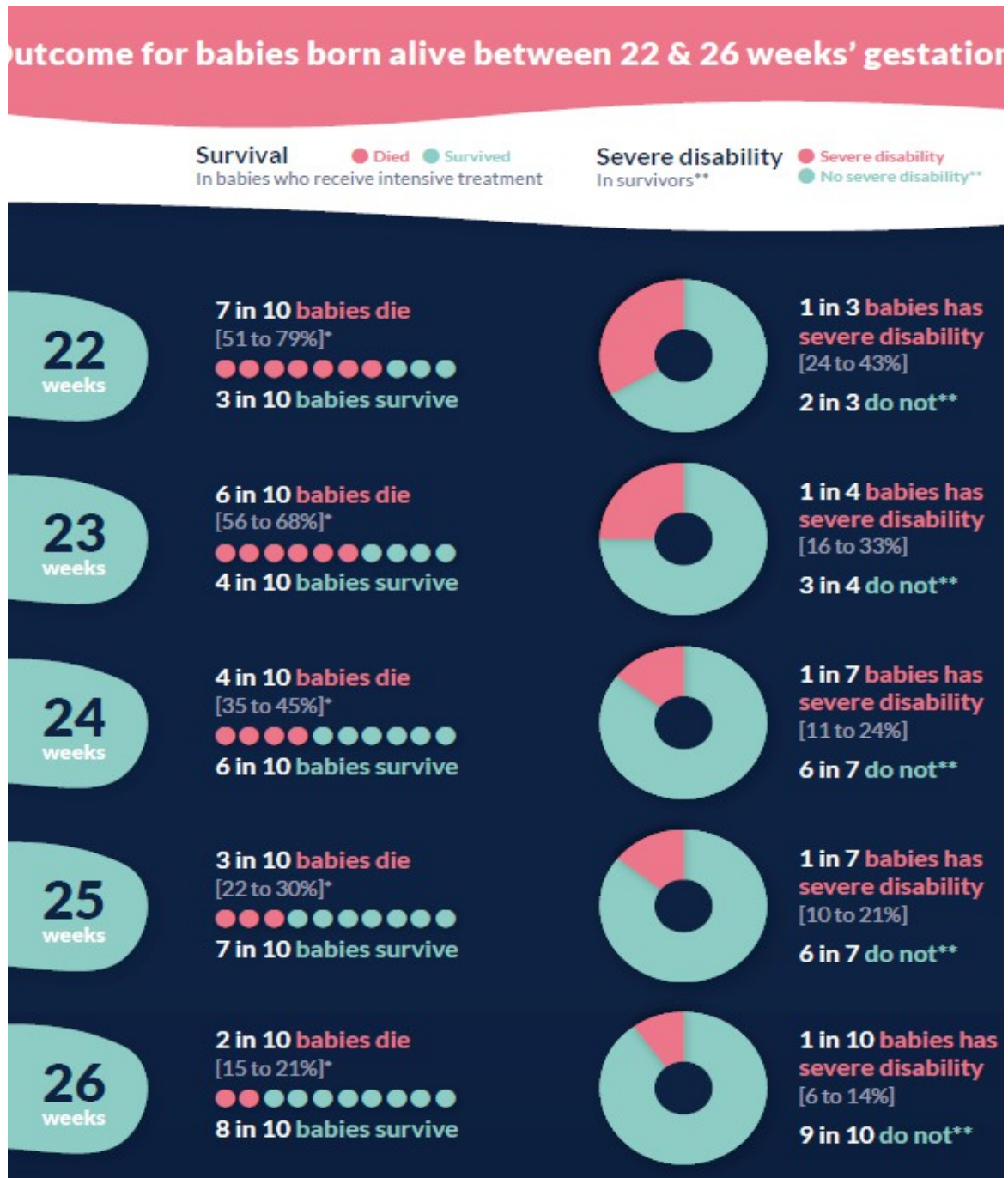
Key elements	Process for Monitoring	By Whom (Individual / group /committee)	Responsible Governance Committee / dept	Frequency of monitoring
PeriPREM Bundle compliance	Perinatal Optimisation Project and SBLCB Audits	Perinatal Optimisation Lead Midwife	Maternity Clinical Governance	Reportes Quarterly

The audit results are to be discussed at Maternity Clinical Governance as part for the perinatal optimisation project on a monthly basis to review the results and recommendations for further action. Maternity Governance ensure that the actions and recommendations are suitable and sufficient.

7. Appendices

7.1. Appendix A: Outcome of Babies Born alive between 22 and 26 weeks – BAPM Framework Guidelines 2019

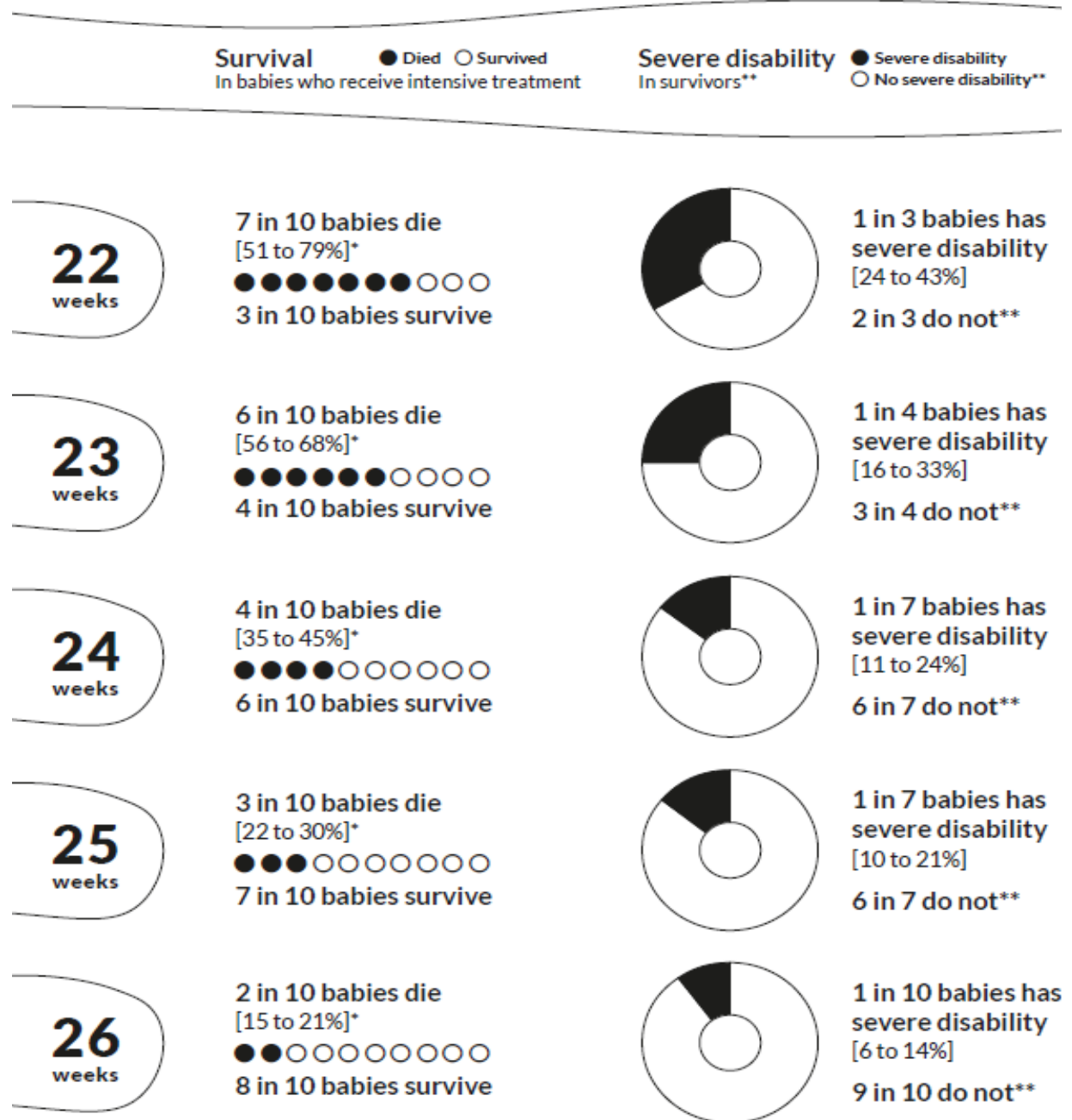
Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)



Printer friendly version – for parents

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Outcome for babies born alive between 22 & 26 weeks' gestation



Outcomes for extremely preterm babies – more detail

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

Outcome is most often discussed in terms of *survival* and whether survival is accompanied by *impairment*.

Difficulties in data interpretation have always arisen when considering outcome data because of variations in provision of active treatment, variations between place of birth and choice of cohort to study and report.

However, despite the differences, there has been steady improvement in survival over the last 20 years and improvement is most marked in the lower gestational ages.

The earlier version of this guideline used what was considered to be the most relevant, most complete and most up to date UK data to inform discussions about survival and impairment - the EPICURE studies data ^(9,10,11,12)

This data was from cohorts in the UK in 1995 and subsequently 2006.

The latest data used in **this version** of the guideline is from 2016 in the UK (MBRRACE data) ⁽⁶⁾

This data is consistent with other recent international studies ^(7,8,9)

MBRRACE-UK 2016 data: survival up to one year of age of babies born <27 weeks gestational age

Gestational Week	22 weeks	23 weeks	24 weeks	25 weeks	26 weeks
All births	486	510	656	664	832
Births alive at onset of labour	290	362	497	508	674
Live births	183	301	456	486	662
% live births of those alive at onset of labour	63%	83%	92%	96%	98%
Range	57 to 69	79 to 87	90 to 94	94 to 98	97 to 99
Delivery room deaths	155	78	26	19	16
% deaths before admission	85%	26%	6%	4%	2%
Range	80 to 90	21 to 31	4 to 8	2 to 6	1 to 3
Live births receiving active care	43	264	449	486	662
% receiving active care (of all live births)	23%	88%	98%	100%	100%
Admitted for neonatal	28	223	430	467	646

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: July 2024

Ref:

Next Review: Month year (in YYYY format)

Page 26 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

care					
% admitted for neonatal care (of births receiving active care)	65%	85%	96%	96%	98%
Range	51 to 79	81 to 89	94 to 98	94 to 98	97 to 99
Deaths < 1 year	13	122	160	108	106
Survivors to 1 year	15	101	270	359	540
Survival					
Of those alive in labour	5%	28%	54%	71%	80%
Range	2 to 8	23 to 33	50 to 58	67 to 75	77 to 83
Of live births receiving active care	35%	38%	60%	74%	82%
Range	21 to 49	32 to 44	55 to 65	70 to 78	79 to 85
Of those admitted to intensive care	54%	45%	63%	77%	84%
Range	36 to 72	38 to 52	58 to 68	73 to 81	81 to 87

Survival with Impairment

Estimated prevalence rates of severe impairment in four major studies may be summarised as:

22 ⁺⁰ - 22 ⁺⁶ weeks	1-in-3 survivors has severe impairment
23 ⁺⁰ - 23 ⁺⁶ weeks	1-in-4 survivors has severe impairment
24 ⁺⁰ - 25 ⁺⁶ weeks	1-in-7 survivors has severe impairment
26 ⁺⁰ - 26 ⁺⁶ weeks	1-in-10 survivors has severe impairment

Impairment: an injury, illness, or congenital condition that causes or is likely to cause a loss or difference of physiological or psychological function.

Disability is the result of negative interactions that take place between a person with impairment and their social environment.

Impairments arising from consequences of premature birth will inevitably be viewed differently by different families – how disabling a particular impairment is can be viewed very differently based on experience, attitude and knowledge – an unacceptable predicted outcome for one family may not be so for another family.

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: July 2024

Next Review: Month year (in YYYY format)

Ref:

Page 27 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

This guideline uses the BAPM working group category of severe impairment to inform parents when discussing the risks following preterm birth.

The severe impairment outcome category includes:

- Severe cognitive impairment: an IQ lower than 55 (<-3 standard deviation); this will usually result in the need for educational support and require supervision in daily activities
- Severe cerebral palsy – classified as Gross Motor Function Classification System (GMFCS) level 3, 4 or 5
- Blindness or profound hearing impairment

Severe Cerebral Palsy:

Gross Motor Function Classification System (GMFCS) Level 3, 4, 5:

Level III: Children walk using a hand-held mobility device in most indoor settings. When seated, children may require a seat belt for pelvic alignment and balance. Sit-to-stand and floor-to-stand transfers require physical assistance of a person or support surface. When travelling long distances, children use some form of wheeled mobility. Children may walk up and down stairs holding onto a railing with supervision or physical assistance. Limitations in walking may necessitate adaptations to enable participation in physical activities and sports including self-propelling a manual wheelchair or powered mobility.

Level IV: Children use methods of mobility that require physical assistance or powered mobility in most settings. Children require adaptive seating for trunk and pelvic control and physical assistance for most transfers. At home, children use floor mobility (roll, creep, or crawl), walk short distances with physical assistance, or use powered mobility. When positioned, children may use a body support walker at home or school. At school, outdoors and in the community, children are transported in a manual wheelchair or use powered mobility. Limitations in mobility necessitate adaptations to enable participation in physical activities and sports, including physical assistance and/or powered mobility.

Level V: Children are transported in a manual wheelchair in all settings. Children are limited in their ability to maintain antigravity head and trunk postures and to control arm and leg movements. Assistive technology is used to improve head alignment, seating, standing, and/or mobility but limitations are not fully compensated by equipment. Transfers require complete physical assistance of an adult. At home,

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

children may move short distances on the floor or may be carried by an adult. Children may achieve self- mobility using powered mobility with extensive adaptations for seating and control access. Limitations in mobility necessitate adaptations to enable participation in physical activities and sports including physical assistance and using powered mobility.

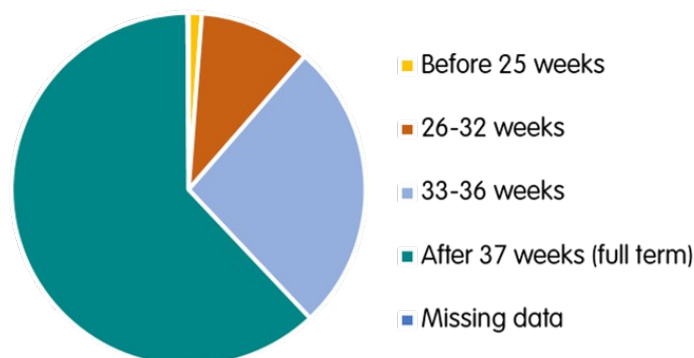
Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

7.2. Appendix B – Statistics about Neonatal Care

60,000 babies are born [prematurely](#) in the UK every year which is equivalent to 1 in every 13 babies. In 2016, of the 100,762 babies who received neonatal care in the UK, only 1.2 per cent were born before 25 weeks.

Gestation of baby at birth	Number of babies	Percentage of the total number of babies admitted on to a neonatal unit
Total	100,762	100%
≤25 weeks	1,189	1.2%
26-32 weeks	10,283	10.2%
33-36 weeks	26,758	26.6%
≥37 weeks	62,427	62%

Birth gestation of babies on a neonatal unit



How long will a baby typically spend on a neonatal unit?

- The average length of a stay in neonatal care in England and Wales is seven days – however this includes figures for both premature and full term babies.
- The average length of stay for a baby born between 28 to 31 weeks is 44 days

Gestation of baby at birth	Average length of stay (days)	Average age at discharge (gestational age in weeks)
≤27 weeks	92	39.4
28-31 weeks	44	36.4
32-36 weeks	12	36.6

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: July 2024

Next Review: Month year (in YYYY format)

Ref:

Page 30 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

≥37 weeks	4	40.3
Average	7	38.6

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

7.3. Appendix C - Prenatal Consultation: NICU

Prenatal Consultation Form: NICU (Trust Doc ID: [23736](#))

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

7.4. Appendix D - Example of details to include in an email to the medical examiners

Email to: medicalexamineroffice@nnuh.nhs.uk

Dear Medical Examiner,

I am writing to provide details of a baby who died on delivery suite on xrd May 20xx.
Baby Smith, Hosp XXXXXXXX, NHS XXX XXX XXXX, Gestational age: xx+x Gender -
XXXXXX.

Date of Birth xx.xx.xxxx at 00:00,
Date of death – xx.xx.xxxx at 00:10, at ten minutes old.

(Mother's details: Laura Smith, Hosp XXXXXXXX, NHS XXX XXX XXXX, DoB
xx.xx.xxxx).

Circumstances:

The deceased's mother was admitted initially to delivery suite at 18 weeks and two days' gestation with vaginal bleeding and was diagnosed with an inevitable miscarriage. She was offered, and accepted, a medical termination of pregnancy in light of this occurring at a previable gestation.

Baby Smith was delivered at 00:00 on xx.xx.xxxx and initially displayed signs of life, particularly limb movement. At this previable gestation, no attempt at resuscitation would have been appropriate, and the baby was swaddled and provided comfort care. There were no further signs of life at ten minutes. The neonatal team were not involved as resuscitation was not planned. Of note, the deceased's mother subsequently suffered a major obstetric haemorrhage with a retained placenta. There were no suspicious circumstances around the death to my knowledge. I have completed a neonatal death certificate and cremation form four. I have copied the bereavement midwives and the patient's obstetric consultant into this email, who are provided ongoing care.

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)

8. Equality Impact Assessment (EIA)

Type of function or policy	Existing
----------------------------	----------

Division	Woman's and Children's Division	Department	Maternity Services
Name of person completing form	Eilbhe Whelan	Date	October 2024

Equality Area	Potential Negative Impact	Impact Positive Impact	Which groups are affected	Full Impact Assessment Required YES/NO
Race	No	No	None	No
Pregnancy & Maternity	No	Yes – standardised care	None	No
Disability	No	No	None	No
Religion and beliefs	No	No	None	No
Sex	No	No	None	No
Gender reassignment	No	No	None	No
Sexual Orientation	No	No	None	No
Age	No	No	None	No
Marriage & Civil Partnership	No	No	None	No
EDS2 – How does this change impact the Equality and Diversity Strategic plan (contact HR or see EDS2 plan)?	No impact			

- A full assessment will only be required if: The impact is potentially discriminatory under the general equality duty
- Any groups of patients/staff/visitors or communities could be potentially disadvantaged by the policy or function/service
- The policy or function/service is assessed to be of high significance

IF IN DOUBT A FULL IMPACT ASSESSMENT FORM IS REQUIRED

The review of the existing policy re-affirms the rights of all groups and clarifies the individual, managerial and organisational responsibilities in line with statutory and best practice guidance.

Author: Charles Bircher (Consultant Obstetrician), David Booth (Consultant Neonatologist), Ankur Sharma (Clinical Fellow), Eilbhe Whelan, (ST7 O&G)

Approval Date: July 2024

Next Review: Month year (in YYYY format)

Ref:

Page 34 of 35

Trust Guideline for the Management of Babies Born Extremely Preterm (<26 weeks gestation)