

Thames Regional Perinatal Group

Chairman: Dr Tony Ducker, Medway Maritime Hospital, Gillingham
Honorary Secretary: Dr Ros Thomas, Northwick Park Hospital
Honorary Treasurer: Dr Andrew Long, Farnborough Hospital
Vice Chairman: Dr Jane Hawdon, University College Hospital

Tel: 01634-825127 Fax: 01634-825128
Tel: 020-8869-3941 Fax: 020-8869-2927
Tel: 01689-814189 Fax: 01689-814038
Tel: 020-7387-9300 Fax: 020-7380-9775

(Agreed by TRPG 09.03.00)

GUIDELINES RELATING TO THE BIRTH OF EXTREMELY IMMATURE BABIES (22-26 WEEKS GESTATION)

The role of guidelines is to offer a pattern of care based on current best practice, as a general template for clinicians, particularly those who are less experienced, but who nevertheless may be faced with difficult clinical decisions at times when immediate action may be required. No guideline can be expected to cover every eventuality and guidelines can never be a substitute for carefully considered unhurried forward planning between parents and senior clinicians.

1. Communication Before Delivery

- 1.1 Good communication between the parents and all health care professionals involved in the management is of paramount importance.
- 1.2 The most experienced clinicians available at the time (preferably consultant obstetrician and consultant paediatrician with an experienced midwife), should agree a provisional management plan based on clinical information and up-to-date outcome data. If possible time should be allowed for all concerned to consider the options and assimilate the information.
- 1.3 Management plans should be clearly recorded in the notes and accessible to all clinical staff.
- 1.4 When appropriate, parents should be encouraged to seek support from family members and religious advisers.
- 1.5 Clinicians should be aware of recent survival and morbidity statistics for their own unit and a major regional centre.^{1,2,3}

2. Gestational Assessment and Management Recommendations

- 2.1 Early ultrasound (<18 weeks), when done by an experienced ultrasonographer, is usually reliable. Other ways of assessing gestation including information about method of conception, menstrual history or paediatric assessment after birth may occasionally be helpful.
- 2.2 Caesarean section is rarely appropriate <25 weeks gestation⁴, but in some cases a second opinion may be helpful to the parents.
- 2.3 Even if caesarean section is not planned, monitoring of the fetal heart may help the paediatrician decide whether resuscitation or provisional intensive care is appropriate. If the FH is monitored it should be done, sensitively (eg without audible noise), and with the agreement of the parents.

- 2.4 In-utero transfer to a tertiary perinatal unit may be appropriate from 22 weeks gestation when considering the potential survival for the baby and providing transfer is considered to be safe for the mother. Reasons for transfer must be fully discussed with parents prior to transfer.
- 2.5 The outcome for babies < 24 weeks gestation is extremely poor. Although postnatal transfer to a tertiary unit may not be appropriate, discussion with senior clinicians at a tertiary centre may be helpful in deciding management.
- 2.6 When postnatal transfer is considered inappropriate, supportive care must be provided for the family.

3. Neonatal Resuscitation

3.1 Initial Resuscitation:

A) If gestation *certain* and FH heard during labour:

- a) ≥ 23 weeks gestation: Experienced paediatrician and another clinician (neonatal nurse \pm SHO) to attend birth in order to assess whether active resuscitation is appropriate depending on condition of baby at birth.
- b) ECM and adrenaline have not been shown to improve survival in LBW babies and is rarely appropriate <25 weeks gestation.
- c) ≤ 22 weeks gestation: Paediatrician might attend delivery if previously agreed to be appropriate, in order to support parents and health care team and to confirm the maturity of the infant. At the present state of knowledge resuscitation at this gestation is experimental and should only take place under controlled circumstances in tertiary centres.

B) If gestation *uncertain* and FH audible during labour:

Paediatrician to attend all births thought to be ≥ 22 weeks to assess whether active resuscitation is appropriate, depending on the condition of the baby. Factors that may be taken into consideration include: evidence of perinatal asphyxia, advanced sepsis, extensive bruising and low or absent heart rate at the time of delivery. A decision may be made to offer minimal support (eg warmth and facial oxygen) and in the absence of any response, to withdraw support.

3.2 Provisional intensive care:

The response of the baby to active resuscitation is critical in deciding whether to institute "provisional" intensive care, If the heart rate picks up rapidly and the colour of the baby improves, it is appropriate to arrange transfer to NICU for assessment. Further management should be decided by experienced clinicians and will be dependent on the response of the baby to treatment.

4. Ethical Consideration:

- 4.1 When agreement between parents and clinical staff cannot be reached over management of the baby after birth, provisional intensive care should be offered, pending further assessment and discussion.
- 4.2 When intensive care is withheld or withdrawn, the use of opiates to provide a comfortable and dignified death may be entirely appropriate.

- 4.3 Further recommendations may be found in RCPCH monograph: "Withholding or Withdrawing Life Saving Treatment in Children"⁵.
- 4.4 Parents of infants who die should be offered bereavement follow up and counselling, including advice about postmortem examination and the prognosis for future pregnancies.

References:

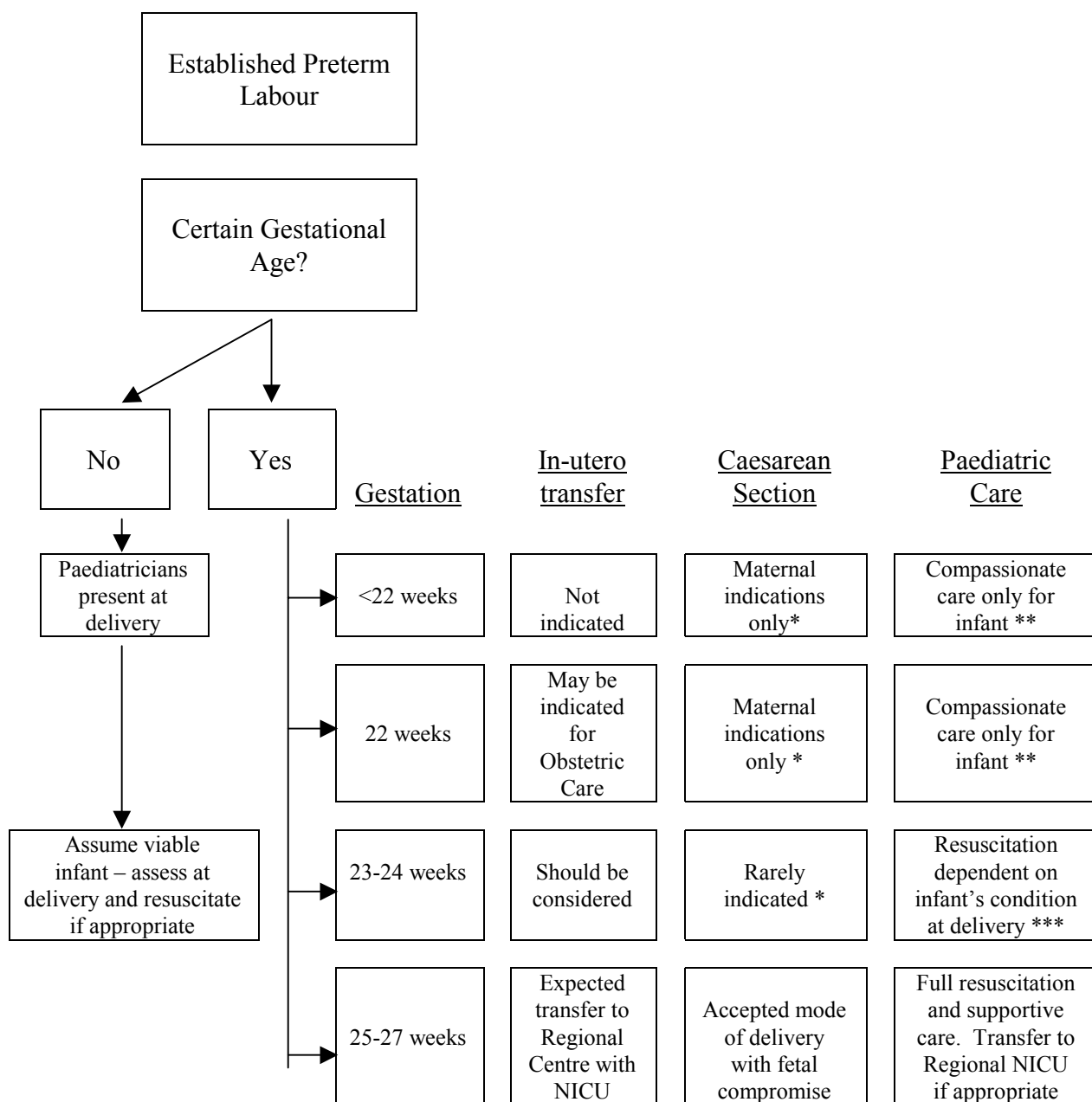
1. The EPICure Study (provisional data – Appendix 3)
2. Perinatal management at the lower limit of viability. J M Rennie Arch Dis Child Fetal Neonatal Ed 1996 May 74:3 F214-8
3. Changing prognosis for babies of less than 28 weeks gestation in the north of England between 1983 and 1994. Northern Neonatal Network. Tin W, Wariyar U, Hey E BMJ 1997 Jan 11;314(7074):107-11
4. Cesarean section or vaginal delivery at 24 to 28 weeks gestation: comparison of survival and neonatal and two-year morbidity. Kitchen W, Ford GW, Doyle LW, Rickards AL, Lissenden JV, Pepperell RJ, Duke JE Obstet Gynecol 1985 Aug 66:2 149-157
5. Withholding or Withdrawing Life Saving Treatment in Children – A Framework for Practice. Royal College of Paediatrics and Child Health, September 1997

Appendices:

- 1 Flowchart for action
- 2 Suggested criteria to be taken into consideration when determining management
- 3 Provisional Epicure data

Appendix 1

Management of Threatened Birth at Extremely Low Gestational Age



* Caesarean section offers no benefit to the fetus <25 weeks gestation and should be performed only when indicated for the health of the mother.

** Infants at this gestational age cannot be expected to survive, however the paediatrician may decide to offer active treatment for infants whose gestational age may have been underestimated.

*** There are wide variations in prognosis and outcome for infants born at this gestation. The management of an infant delivered at this gestation should be consistent with parents' wishes. For infants without fatal congenital abnormalities, the decision to resuscitate at birth should depend on the infant's condition. Objective criteria include condition at birth, lack of bruising and presence of spontaneous respiratory efforts.

Appendix 2

Factors to be Taken Into Account When Determining Management

Antenatal factors influencing fetal outcome:

- Gestational age
- Steroid administration
- Predicted fetal weight
- Presence and severity of pathology
 - IUGR
 - Hypoxia
 - Sepsis
- Fetal Anomaly

Parental factors:

- Cultural
- Religious
- Medical
- Past obstetric history
 - Previous pregnancy loss
 - Sub-fertility

Parental Expectations:

- Understanding of process
 - In-utero Transfers
 - Postnatal assessment
 - Paediatric involvement/interventions
- Outcome
 - Survival
 - Morbidity

Condition of Infant at Delivery:

- Apparent maturity
- Birthweight
- Evidence of asphyxia
- Extensive bruising
- Heart rate and activity level
- Respiratory effort and evidence of sustained response to resuscitation

Summary of outcomes for all livebirths in UK and Ireland, March to December 1995

Source: The EPICure study

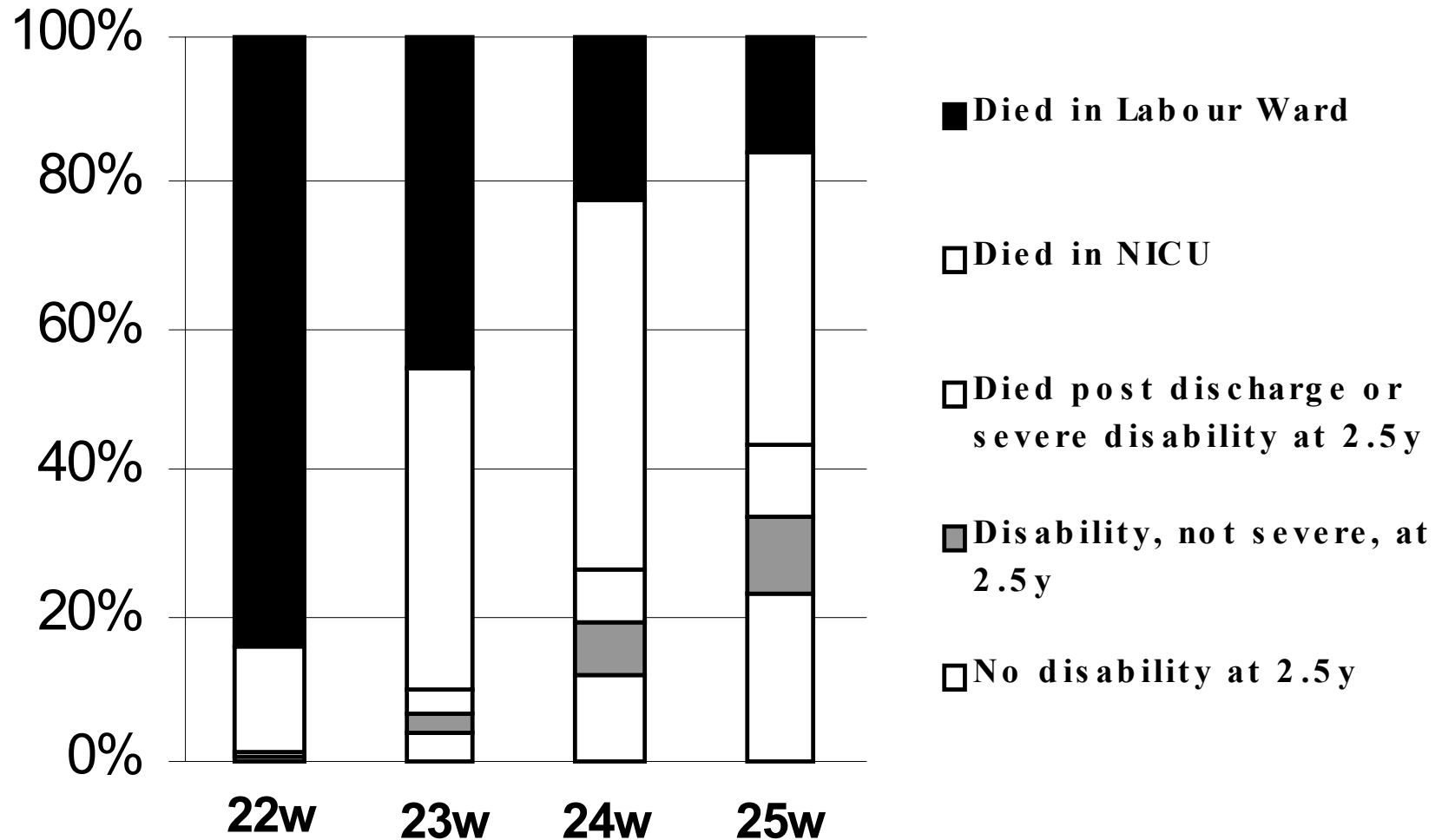
n (% live births)	22w	23w	24w	25w
*Live births n =	138	241	382	424
*Died in delivery room	116 (84%)	110 (46%)	84 (22%)	67 (16%)
**Admitted for intensive care	22 (16%)	131 (54%)	298 (78%)	357 (84%)
Died in NICU	20 (14%)	105 (44%)	198 (52%)	171 (40%)
Survived to discharge	2 (1%)	26 (11%)	100 (26%)	186 (44%)
Deaths post discharge	0	1 (0.4%)	2 (0.5%)	3 (0.7%)
Lost to follow up	0	0	1 (0.3%)	1 (0.2%)
# Severe disability	1 (0.7%)	8 (3%)	24 (6%)	40 (9%)
Disability not severe	0	6 (2%)	28 (7%)	44 (10%)
Survivors without identified disability at 2.5y (% livebirths*)	1 (0.7%)	11 (5%)	45 (12%)	98 (23%)
Survivors without identified disability at 2.5y (% admissions**)	1 (5%)	11 (8%)	45 (15%)	98 (27%)

* Gestation based on 'working' estimate on labour ward

** Gestation confirmed postnatally

A severe disability is defined as one that is expected to render the child dependent

Outcomes for all livebirths in UK and Ireland, March to December 1995



Source: the EPICure study