

Extremes of Prematurity BAPM Framework of Practice

Prep 2 Day Teaching

VF Puddy

17th November 2020



British Association of
Perinatal Medicine



Perinatal Management of Extreme Preterm Birth before 27 weeks of gestation

A Framework for Practice

October 2019

in collaboration with

Bliss
for babies born
premature or sick

bmpfms
British Maternal & Fetal Medicine Society

MBRRACE-UK
Maternity and Neonatal: Producing Real Change
Health and Confidential Progress across the UK

 Royal College of
Obstetricians &
Gynaecologists

Sands
Stillbirth & neonatal death charity

**NEONATAL
NURSES
ASSOCIATION**

Southampton
City Hospitals NHS Trust



What did we have before ?

- UK Epicure 1 survival 1995 (< 26 weeks), emerging outcomes from 2006
- Nuffield Bioethics 2006
- Critical care decisions in fetal and neonatal medicine: ethical issues. Nuffield Council on Bioethics 2006 www.nuffieldbioethics.org
- Early findings from Epicure 2 (2006)
- BAPM Framework 2008

Nuffield Council Bioethics

Critical care
decisions in fetal and
neonatal medicine:
ethical issues

NUFFIELD
COUNCIL ON
BIOETHICS

Nuffield Council Bioethics

Attempt to do

- Avoid euthanasia, right to treatment , Withhold or withdraw treatment
- Palliative care for those not actively treated
- Equality to high quality service
- Avoid decisions being led by resource
- 2nd opinions , facilitators, mediations

Recommendations

- Gestational boundaries
- < 22 weeks not for resuscitation
- 22-23 not normally
- 23- 24 if parents wish intensive care
- 24 – 25 intensive care routine , unless parents and clinicians wish not too
- > 25 weeks
resuscitation/intensive care routine

BAPM Framework 2008

Arch Dis Child - FNN Online First:Published on October 6, 2008 as 10.1136/adc.2008.143321

British Association of Perinatal Medicine

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

- **<23 weeks – “in the best interests/standard practice” – not to resuscitate**
- 23- 23.6 weeks, “a decision not to resuscitate...would be appropriate”
- 24.0–24.6 weeks, resuscitation should be started ‘unless the parents and clinicians have considered that the baby will be severely compromised’
- **>25.0 “it is appropriate to resuscitate”**

**Summary of outcomes for all livebirths < 26⁺⁰ weeks' gestation
in UK and Ireland, March to December 1995³**

N (% live births)	22w	23w	24w	25w
*Live births	138	241	382	424
*Died in delivery room	116 (84%)	110 (46%)	84 (22%)	67 (16%)
Admitted for intensive care	17 (12%)	121 (50%)	313 (82%)	389 (92%)
Survival (% live births)	2 (1.5%)	26 (11%)	100 (26)	186 (44%)
**Gestational age reassessed ⁴	22 (16%)	131 (54%)	298 (78%)	357 (84%)
Died in NICU (% admitted)	20 (91%)	105 (80%)	198 (66%)	171 (48%)
Survived to discharge	2 (9%)	26 (20%)	100 (33%)	186 (52%)
 (% of discharged babies)				
Deaths post discharge	0	1 (4%)	2 (2%)	3 (1.6%)
Lost to follow up	0	3	25	39
# Severe disability	1 (50%)	5 (23%)	21 (28%)	40 (18%)
# Moderate or mild disability	1	14 (61%)	42 (56%)	83 (56%)
Survivors without identified impairment at 6y (% live births*) ⁴	0	3 (1%)	10 (3%)	35 (8%)
Survivors without identified disability at 6y (% admissions**) ⁴	0	3 (2%)	10 (4%)	35 (11%)

* Gestational age based on 'working' estimate on labour ward

** Gestational age assessed postnatally

A severe disability is defined as one that is expected to render the child dependent⁴

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Changes in time

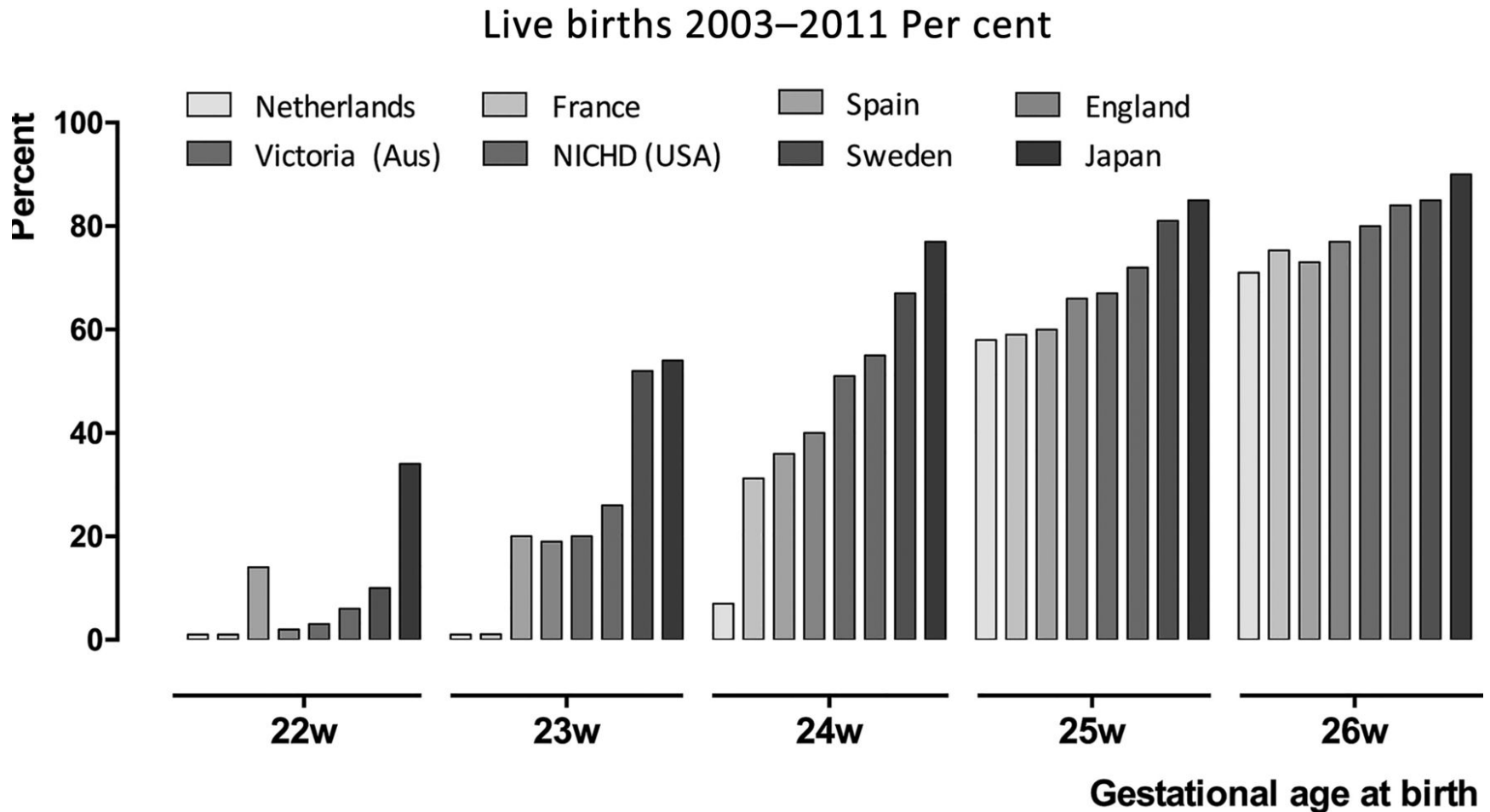
Changes in time

- Epicure 2 2006 (England data < 27 weeks gestation)
- International survival and outcome data
- Changes in neonatal practise , centralisation of neonatal care , widespread implementation of perinatal practice change known to improve neonatal outcomes (NNAP)
- Data recording (live births, active care provision)

Has that resulted in outcome
change ?

Early and longterm outcome of infants born extremely preterm

ADC 2017 Johnson Marlow et al



Survival of live births in large population-based studies 2003–2011. NICHD, National Institute of Child Health and Human Development; w, weeks.

Neonatal Outcomes

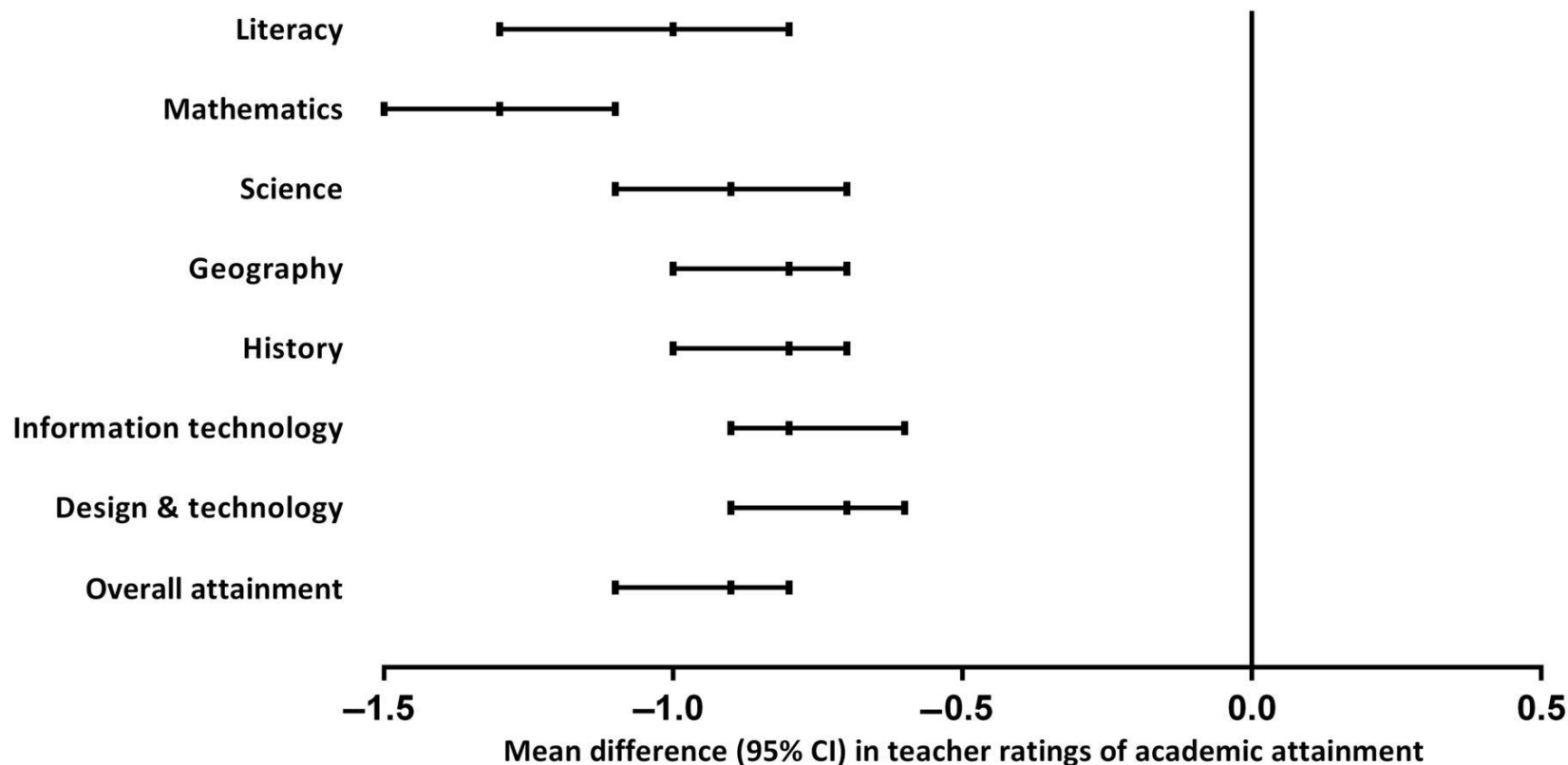
- Health outcomes (ie BPD, feeding etc , systems approach)
- Cognitive , developmental outcomes
 - ie movement , hearing , visual , cognitive function
 - 2 year assessment
 - School age (6 years, 11 years etc)
 - Adulthood

UK Outcome changes

Epicure 1 (1995) < 26 weeks vs Epicure 2 (2006) < 27 weeks

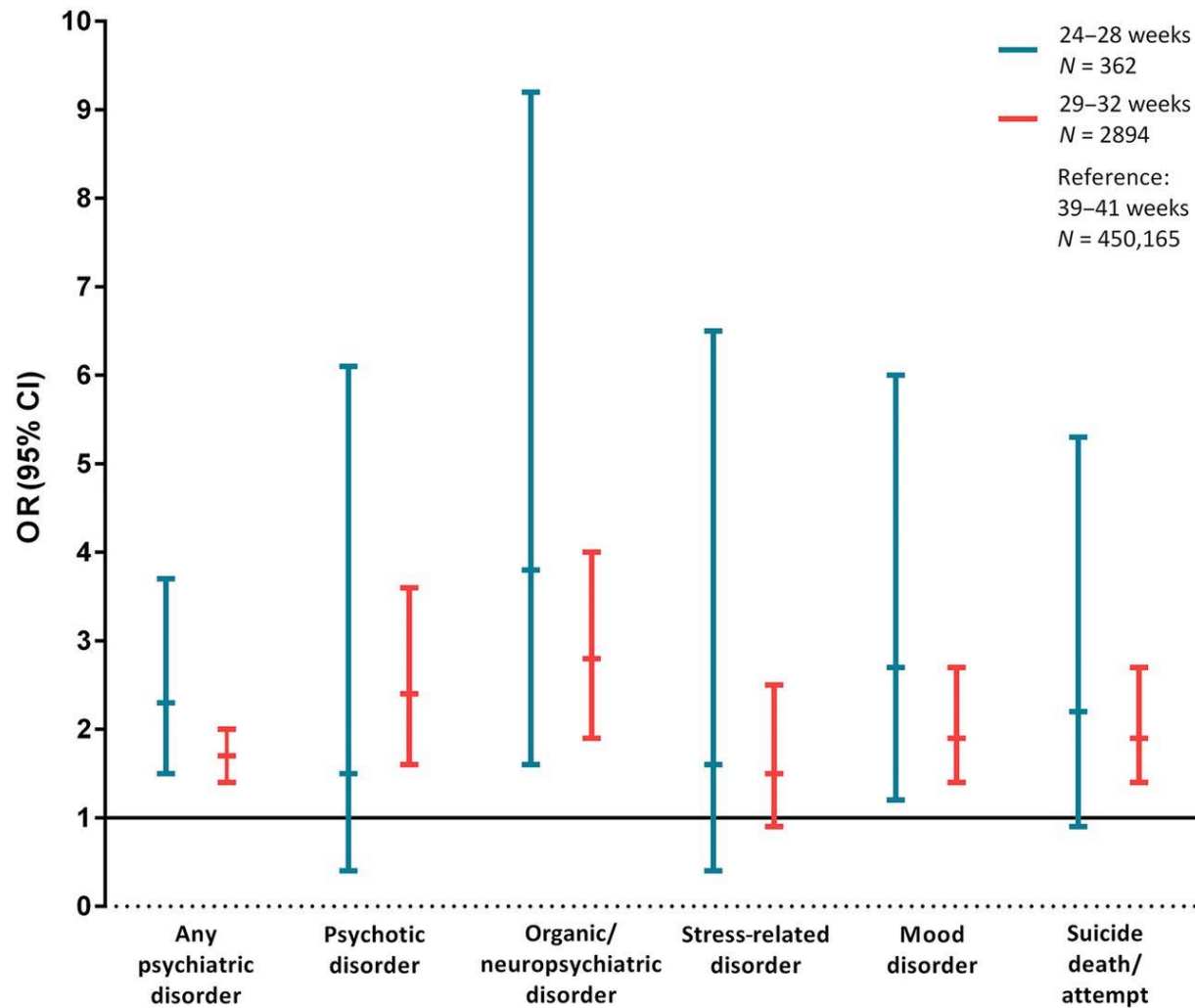
- Increased survival , no change in severe disability
- Prevalence of severe CP declining in EP
- Lower 10 -12 IQ points EP children , TEA controls
- ADHD
- Autism spectrum disorders
- Higher level functioning (working memory, planning , cognitive flexibility, verbal fluency , inhibition
- Sensory impairments less (hearing , vision)

Mean difference (95% CI) in teacher ratings of academic attainment for 145 extremely preterm children (<26 weeks gestation) and 171 term-born controls assessed at 11 years of age in the UK & Ireland EPICure Study.51.



**Samantha Johnson, and Neil Marlow Arch Dis Child
2017;102:97-102**

Psychiatric morbidity in adolescents and young adults born very preterm (figure created using data from Lindstrom et al⁶⁴).

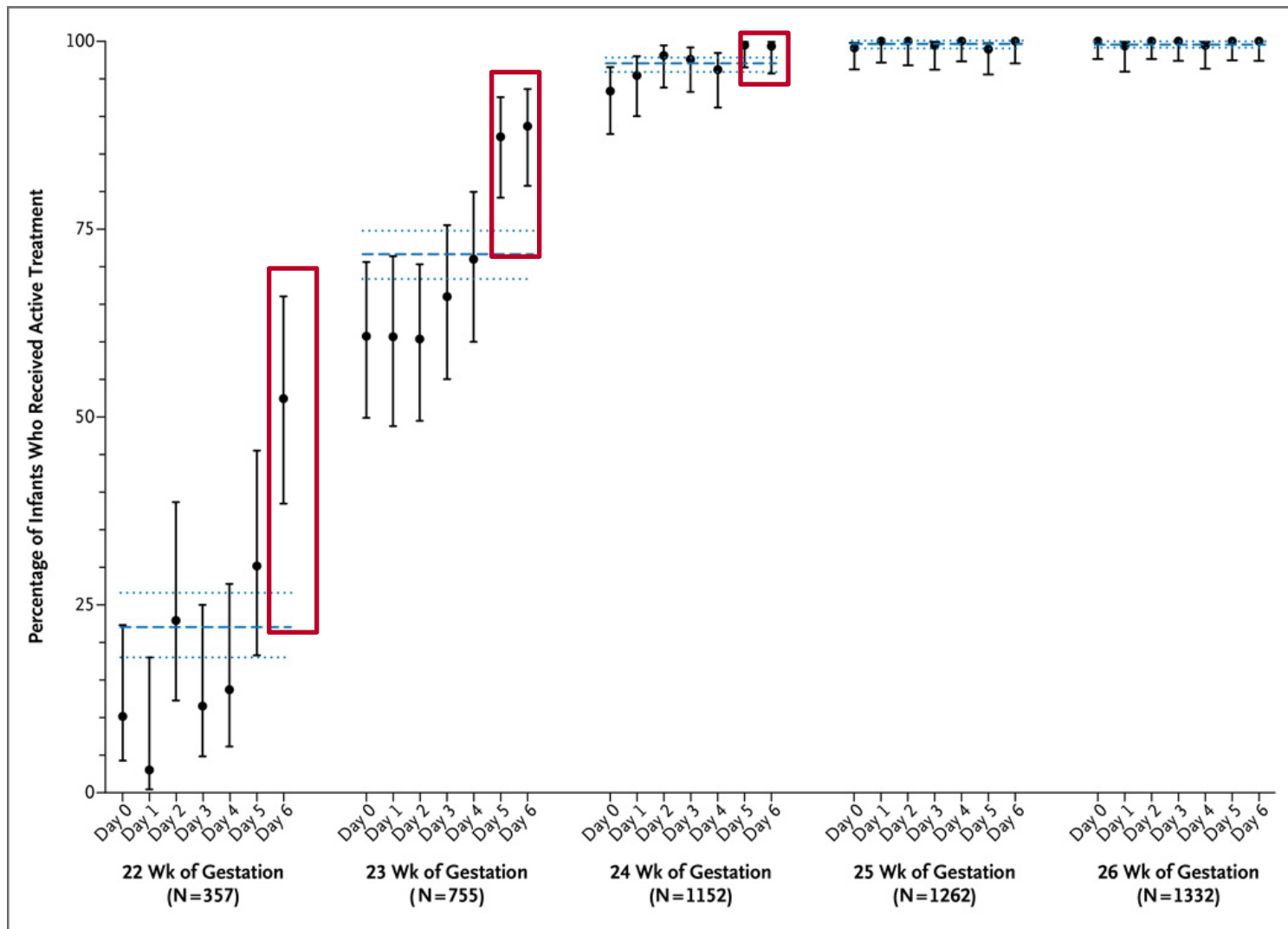


Samantha Johnson, and Neil Marlow Arch Dis Child
2017;102:97-102

Practise change & approach to neonatal resuscitation

NICHD study

Rysavy et al NEJM 2015



- Local practise , centre variation
- Ethical decision making
- Variation in practice in obstetric and neonatal care provision

Association between perinatal interventional activity and outcome

Swiss Study

Adams et al Jan 2019 BMJ

Table 3 Low versus high activity centres cohorts A and B

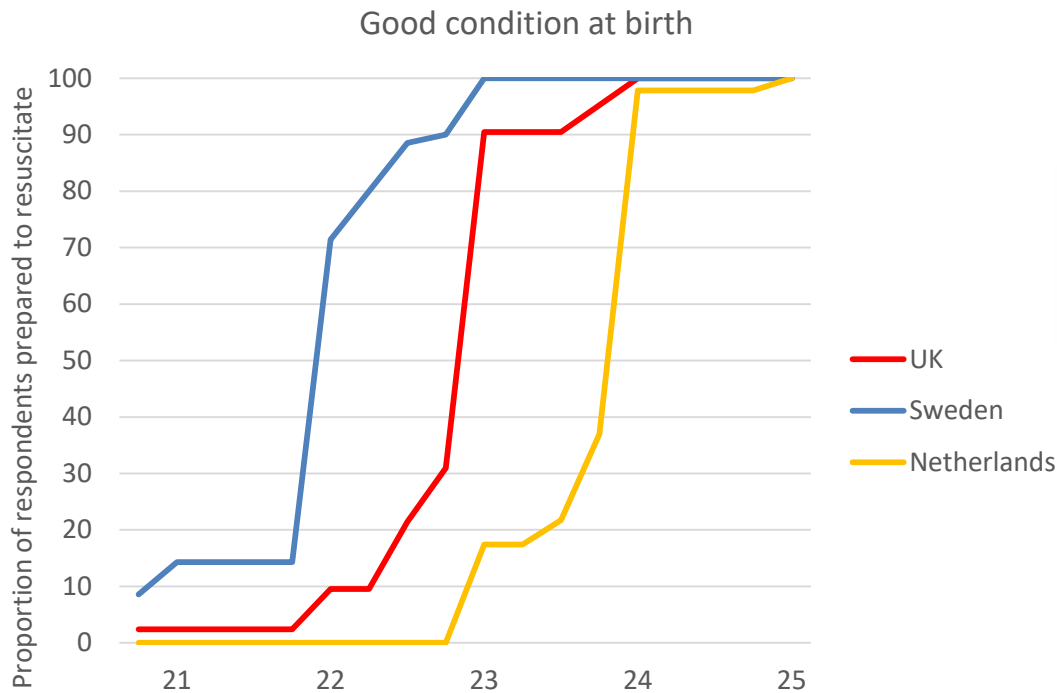
	Cohort A (22–25 weeks GA)		Cohort B (26–27 weeks GA)	
	Low activity	High activity	Low activity	High activity
N	461 (49.7%)	466 (50.3%)	554 (52.9%)	493 (47.1%)
GA (IQR)	24.7 (24–25.3)	24.6 (23.6–25.3)	26.9 (26.4–27.4)	27 (26.4–27.4)
BW z-score (IQR)	–0.3 (–0.8 to 0.3)	–0.4 (–1 to 0.2)	0 (–0.7 to 0.5)	0 (–0.8 to 0.5)
Male sex	51.6%	57.6%	52.1%	55.8%
Multiple births	28.2%	27.5%	24.2%	28.2%
Outborn	3.9%	2.1%	5.2%	3.4%
SES (IQR)	6 (4–8)	6 (5–8)	6 (4–8)	6 (4–8)
Activity score (IQR)	68.1 (68.1–73.7)	89.2 (87.5–92.7)	84.2 (83.3–85.8)	91 (90.2–92.3)
Mortality	71.4%	51.1%	18.2%	10.1%
Died in delivery room	41.9%	34.1%	1.6%	1.8%
NICU mortality	29.5%	17%	16.6%	8.3%
Death or NDI	78.2%	62.9%	30.3%	24.6%
Any major morbidity (survivors)	62.1%	58.7%	43.8%	34.2%
Moderate-to-severe NDI (survivors)	18.3%	18.6%	11.9%	14.3%
Age at death in NICU (days) (IQR)	4 (1.5–10.2)	8 (1.5–18)	6 (3–14)	13 (4–24)
Length of stay (days) (IQR)	73.5 (4–101.8)	100 (63–120)	79 (64–95)	85 (72–97)

SES, socioeconomic status was calculated by means of a score reflecting both maternal education and paternal occupation, with a maximum and minimum scores of 12 and 2, indicating lower and higher status, respectively.

BW, birth weight; GA, gestational age; NDI, neurodevelopmental impairment; NICU, neonatal intensive care unit.

- High activity centres have a significantly lower aOR for mortality and death or NDI
- Comparable outcome among survivors at 2 years of age between the centres for both Cohort A (22 – 25 weeks) and Cohort B (26 – 27 weeks)
- Cohort B lower morbidity in the high perinatal activity centres ie improved outcomes at 2 years

Changing practice .. Variation in clinician practice



Thresholds for Resuscitation of Extremely Preterm Infants in the UK, Sweden, and Netherlands

Dominic Wilkinson, MBBS, DPhil,^{a,b} Eduard Verhagen, MD, JD, PhD,^c Stefan Johansson, MD, PhD^{d,e}

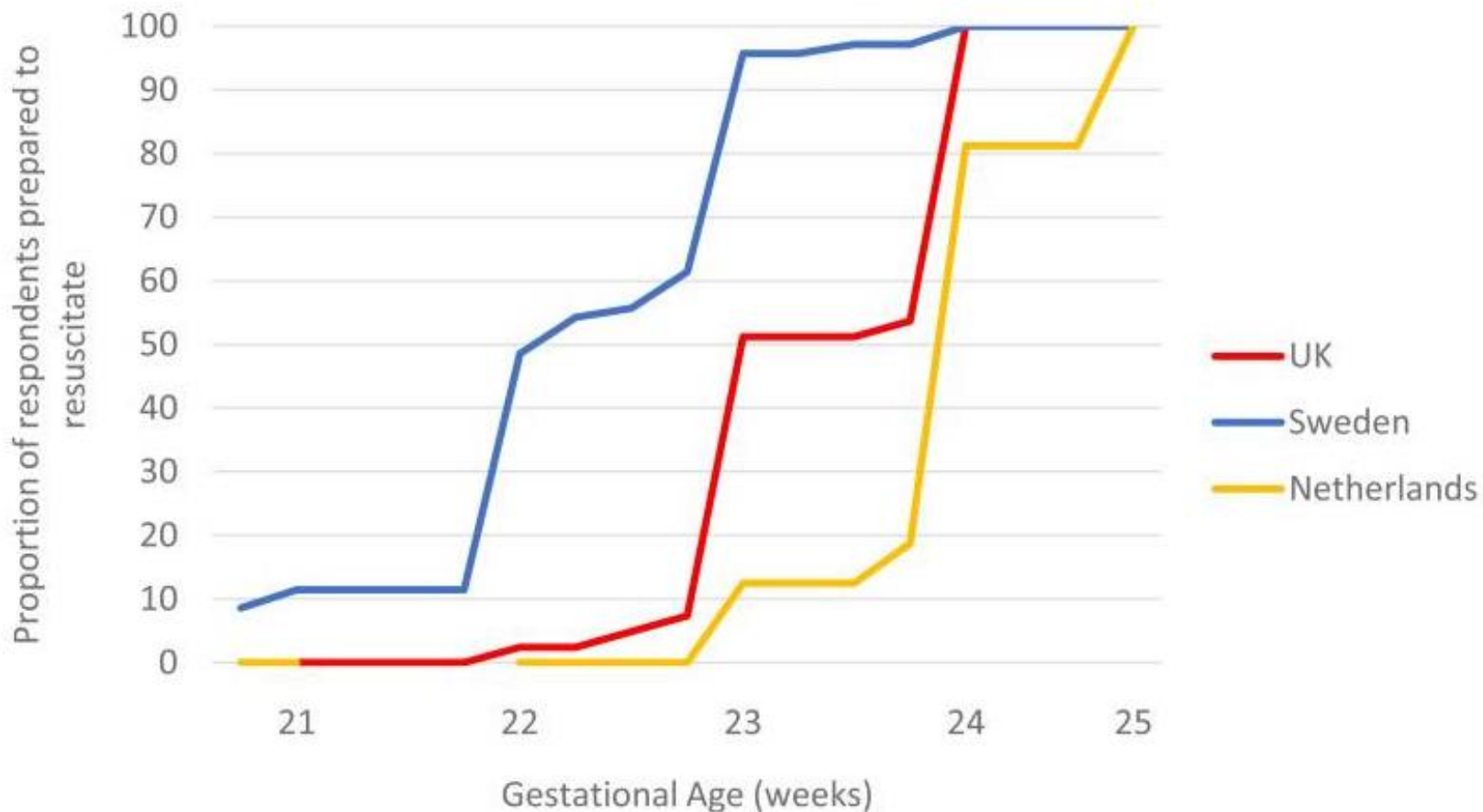
Pediatrics 2018

The figure indicates the proportion of respondents prepared to resuscitate at a given gestation if parents request active treatment. (n=158. Four respondents who indicated an 'other' free text response excluded)

A. For an infant born in good condition (spontaneously breathing with a heart rate of 100)

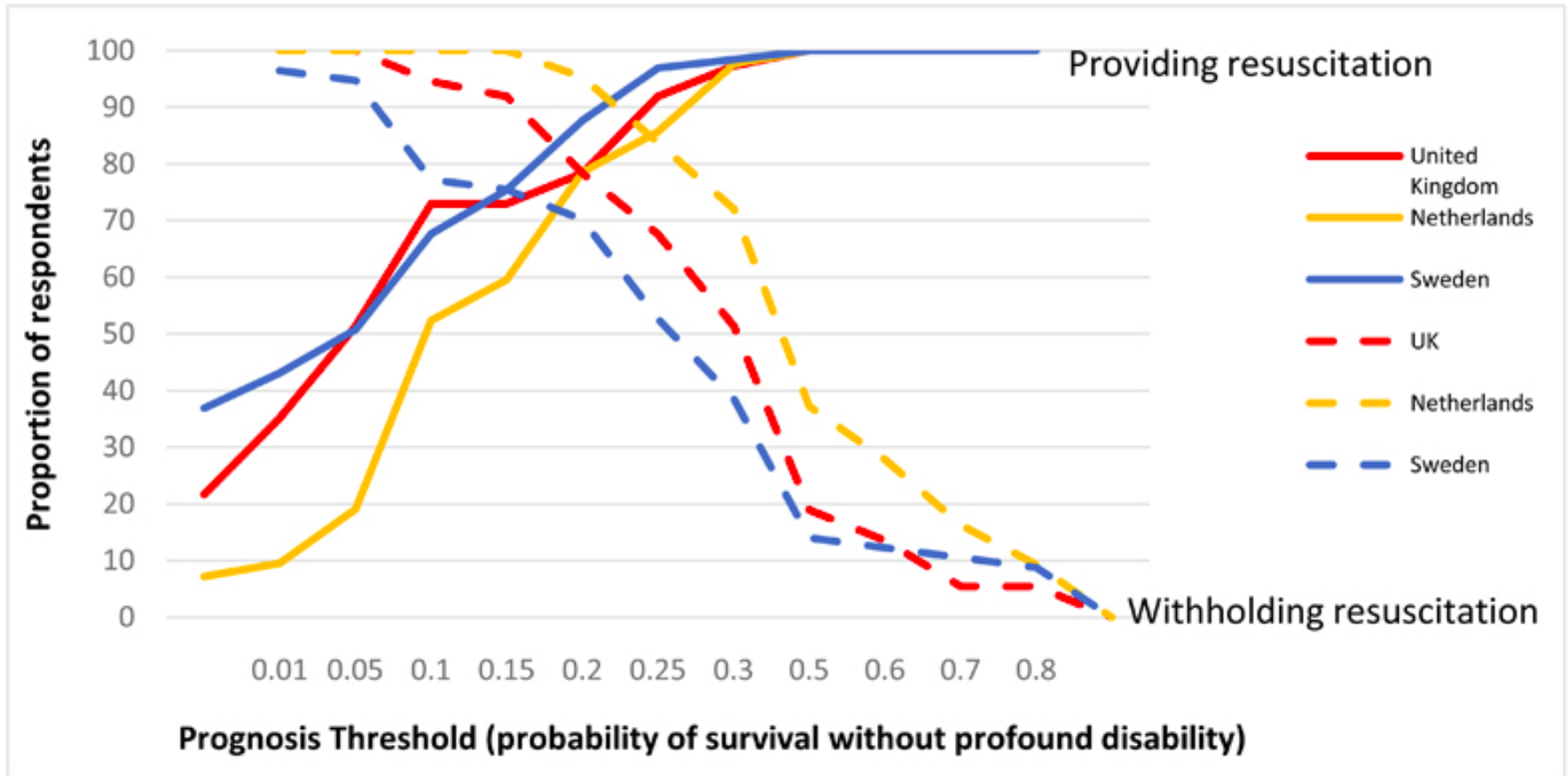
In 2016 survey, 40% UK neonatologists would actively resuscitate at parental request at 22w

Poor condition at birth

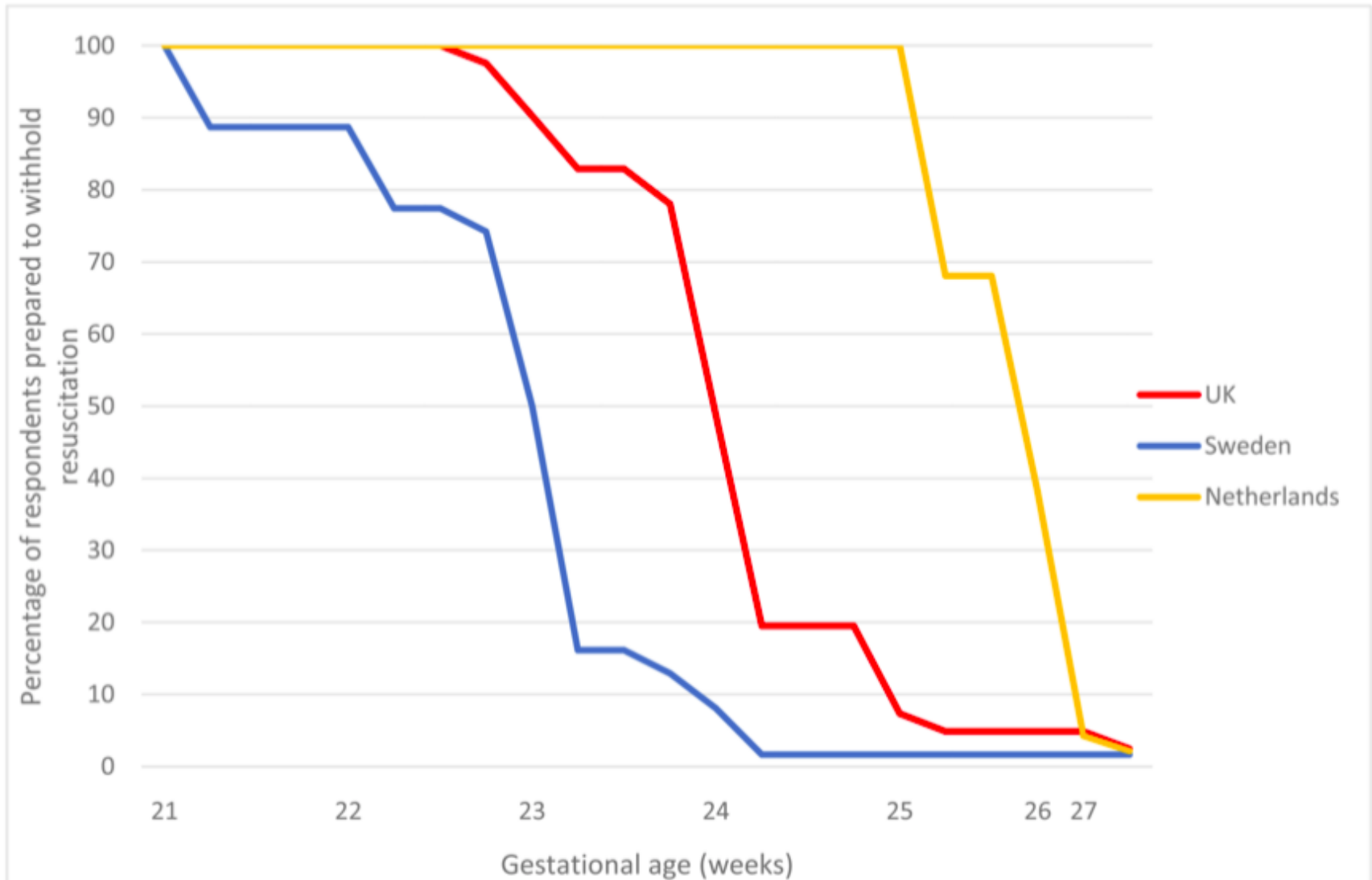


B. For an infant born in poor condition (poor tone, no respiratory effort, heart rate of 40)

Prognosis based thresholds

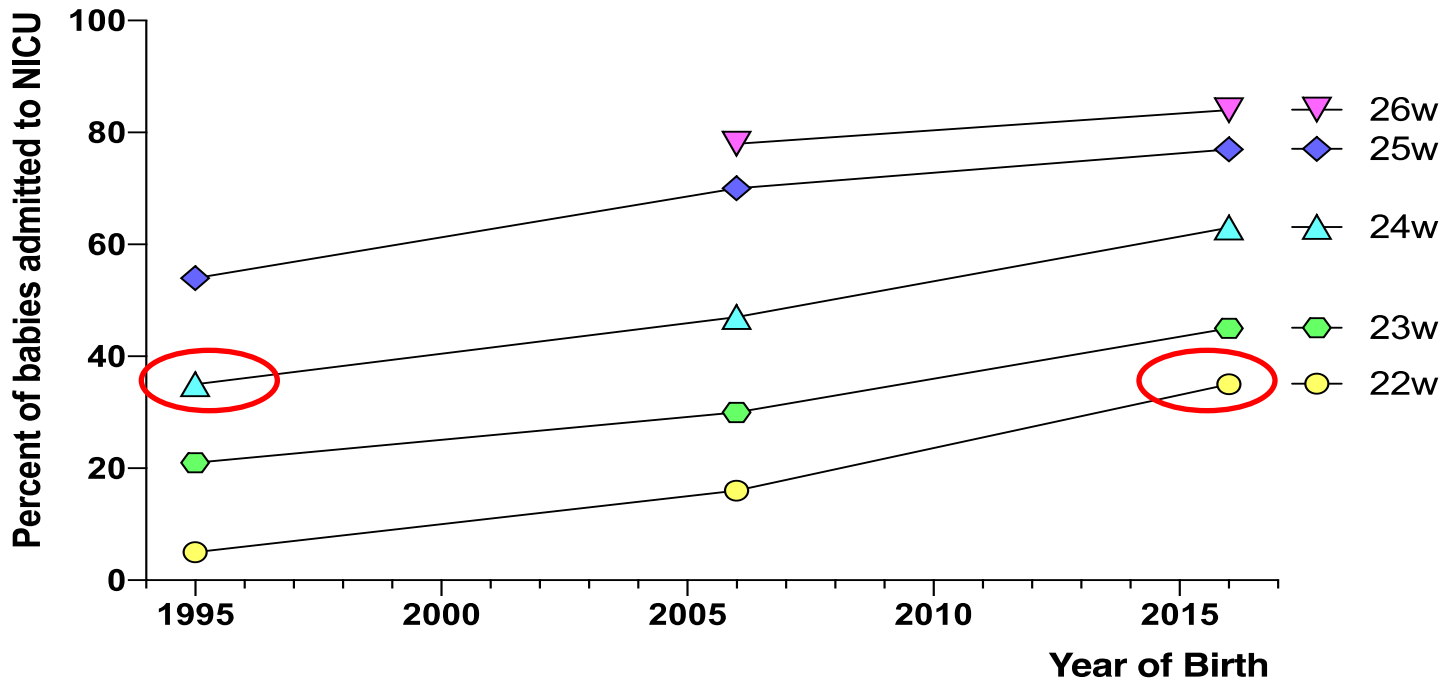


With holding resuscitation



Changing outcome

Epicure and MBRRACE UK



Santhakum

Survival to discharge for infants born 22–26 weeks of gestation and admitted to neonatal units in England in 1995 (EPICure)¹⁰, 2006 (EPICure 2)² and in the UK 2016 (MBRRACE-UK).³

Outcome for 22w in 2016 ~ outcome for 24w in 1995

Table 1: Number and percentage of births, including births where the fetus was alive at onset of labour, live births, births receiving active care, admissions for neonatal care and survival to 1 year of age for births in 2016 in the UK. Recording of active care on the MBRRACE-UK database commenced during 2016 and thus rates are inferred from recording of a total of only 292 deaths ⁽⁸⁾.

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% 57 to 69	83% 79 to 87	92% 90 to 94	96% 94 to 98	98% 97 to 99
Delivery room deaths	155	78	26	19	16
% deaths before admission	85% 80 to 90	26% 21 to 31	6% 4 to 8	4% 2 to 6	2% 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 care	28	223	430	467	646
% admitted for neonatal care (of births receiving active care)	65% 51 to 79	85% 81 to 89	96% 94 to 98	96% 94 to 98	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% 2 to 8	28% 23 to 33	54% 50 to 58	71% 67 to 75	80% 77 to 83
Of live births receiving active care	35% 21 to 49	38% 32 to 44	60% 55 to 65	74% 70 to 78	82% 79 to 85
Of those admitted to intensive care	54% 36 to 72	45% 38 to 52	63% 58 to 68	77% 73 to 81	84% 81 to 87

Current survival data from 2016

	22w	23w	24w	25w	26w
Of those alive in labour	5%	28%	54%	71%	80%
	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%
	21 to 49	32 to 44	55 to 65	70 to 78	79 to 85
Of admissions for intensive care	54%	45%	63%	77%	84%
	36 to 72	38 to 52	58 to 68	73 to 81	81 to 87

Table 4: Stillbirth, neonatal, and extended perinatal mortality rates (95% CIs) by gestational age at birth: United Kingdom and Crown Dependencies, for births in 2017

Rate per 1,000 births [§]	Gestational age at birth (weeks)					
	22 ⁺⁰ -23 ⁺⁶	24 ⁺⁰ -27 ⁺⁶	28 ⁺⁰ -31 ⁺⁶	32 ⁺⁰ -36 ⁺⁶	37 ⁺⁰ -41 ⁺⁶ [°]	≥42 ⁺⁰
Stillbirths[†]	491.65	220.02	73.70	14.51	1.35	1.36
	(461.8 to 521.5)	(205.7 to 234.3)	(67.4 to 80.0)	(13.5 to 15.6)	(1.3 to 1.4)	(0.8 to 1.9)
Antepartum [†]	257.88	181.90	68.50	13.32	1.18	0.86
	(231.8 to 284)	(168.6 to 195.2)	(62.4 to 74.6)	(12.3 to 14.3)	(1.1 to 1.3)	(0.4 to 1.3)
Intrapartum [†]	164.19	30.06	2.60	0.72	0.13	0.43
	(142.1 to 186.3)	(24.2 to 36.0)	(1.4 to 3.8)	(0.5 to 1.0)	(0.1 to 0.2)	(0.1 to 0.8)
Unknown timing [†]	69.57	8.06	2.60	0.48	0.04	0.06
	(54.4 to 84.8)	(5.0 to 11.1)	(1.4 to 3.8)	(0.3 to 0.7)	(0.0 to 0.1)	(0.0 to 0.2)
Neonatal deaths[‡]	704.38	145.01	30.87	5.45	0.65	0.68
	(666.2 to 742.6)	(131.2 to 158.8)	(26.5 to 35.2)	(4.8 to 6.1)	(0.6 to 0.7)	(0.3 to 1.1)
Early neonatal deaths [‡]	629.44	94.16	21.95	3.85	0.41	0.49
	(579.8 to 661.1)	(82.8 to 105.6)	(18.3 to 25.6)	(3.3 to 4.4)	(0.4 to 0.5)	(0.2 to 0.8)
Late neonatal deaths [‡]	83.94	50.85	8.91	1.59	0.24	0.19
	(60.7 to 107.2)	(42.3 to 59.4)	(6.6 to 11.3)	(1.2 to 2.0)	(0.2 to 0.3)	(0.0 to 0.4)
Perinatal deaths[†]	807.05	293.46	94.04	18.31	1.76	1.85
	(783.5 to 830.6)	(277.8 to 309.2)	(87.0 to 101.1)	(17.1 to 19.4)	(1.7 to 1.9)	(1.2 to 2.5)
Extended perinatal deaths[†]	849.72	333.13	102.29	19.88	2.00	2.04
	(828.4 to 871.1)	(316.9 to 349.4)	(95.0 to 110.0)	(18.7 to 21.1)	(2.0 to 2.1)	(1.3 to 2.7)

[§] excluding terminations of pregnancy, births

[°] births with missing information for gestational ages were excluded (n=22,914)

[†] per 1,000 total births

[‡] per 1,000 live births

Data sources: MBRRACE-UK, PDS, ONS, NRS, ISD, NIMATS, States of Guernsey, States of Jersey

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Gestation specific mortality for births in 2017

Table 3: Number of births, stillbirths, neonatal deaths, and extended perinatal deaths by gestational age at birth: United Kingdom and Crown Dependencies, for births in 2017

Number [§]	Gestational age at birth (weeks)					
	22 ⁺⁰ -23 ⁺⁶	24 ⁺⁰ -27 ⁺⁶	28 ⁺⁰ -31 ⁺⁶	32 ⁺⁰ -36 ⁺⁶	37 ⁺⁰ -41 ⁺⁶ [°]	≥42 ⁺⁰
Total births	1,078	3,227	6,540	50,296	660,980	16,212
Live births	547	2,517	6,058	49,566	660,086	16,190
Stillbirths	531	710	482	730	894	22
Antepartum	279	587	448	670	782	14
Intrapartum	177	97	17	36	84	7
Unknown timing	75	26	17	24	28	1
Neonatal deaths	385	365	187	270	428	11
Early neonatal deaths	339	237	133	191	272	8
Late neonatal deaths	46	128	54	79	156	3
Perinatal deaths	870	947	615	921	1,166	30
Extended perinatal deaths	916	1,075	669	1,000	1,322	33

[§] excluding terminations of pregnancy

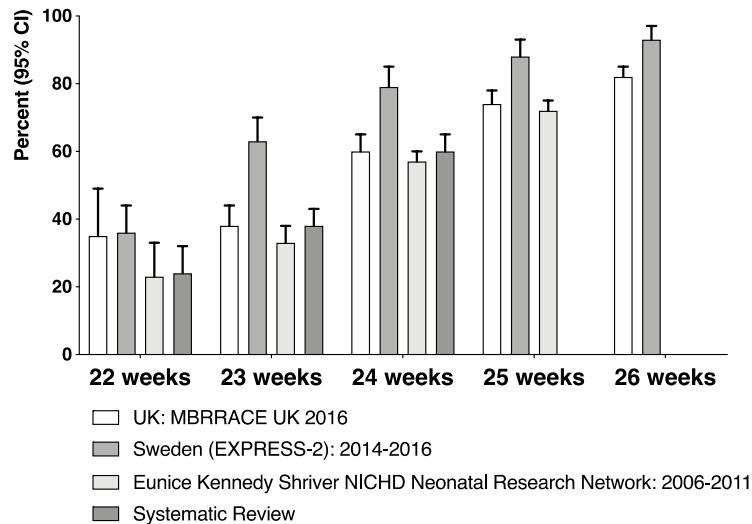
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International comparisons

Survival following active care



Disability in survivors

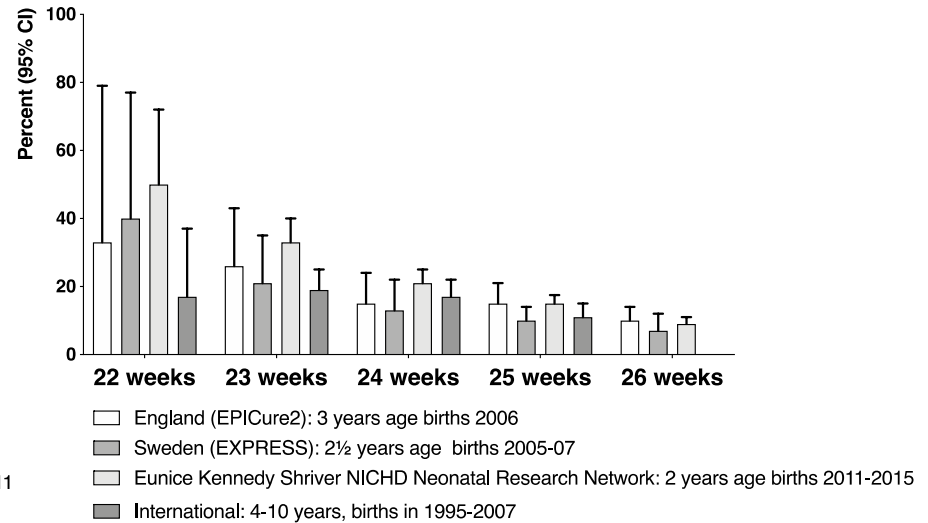
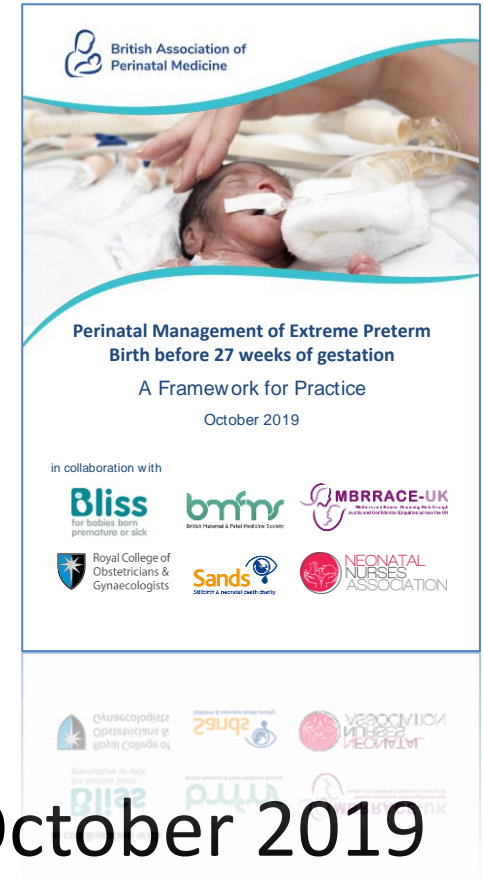


Figure 4 – Prevalence of severe neurodevelopmental impairment in England (2006) compared with rates reported in recent international publications using similar classifications ^(7,54-56); note that data from reference 55 were kindly reanalysed by the NICHD NRN to match the UK classification.

BAPM Framework

- Working Group set up late 2018
 - Several drafts
- Consultation mid 2019
 - Finished August
 - 50 responses; all addressed
- Revised Framework for Practice October 2019



Executive Summary

1. This Framework has been developed by a multidisciplinary working group in the light of evidence of improving outcomes for babies born before 27 completed weeks of gestation, and evolving national and international changes in the approach to their care.
2. Management of labour, birth and the immediate neonatal period should reflect the wishes and values of the mother and her partner, informed and supported by consultation and in partnership with obstetric and neonatal professionals.
3. Whenever possible extreme preterm birth should be managed in a maternity facility co-located with a designated neonatal intensive care unit (NICU).
4. Neonatal stabilisation may be considered for babies born from 22⁺⁰ weeks of gestation following assessment of risk and multiprofessional discussion with parents. It is not appropriate to attempt to resuscitate babies born before 22⁺⁰ weeks of gestation.
5. Decision making for babies born before 27 weeks of gestation should not be based on gestational age alone, but on assessment of the baby's prognosis taking into account multiple factors. Decisions should be made with input from obstetric and neonatal teams in the relevant referral centre if transfer is being contemplated.
6. Risk assessment should be performed with the aim of stratifying the risk of a poor outcome into three groups: extremely high risk, high risk, and moderate risk.
7. For fetuses/babies at extremely high risk, palliative (comfort focused) care would be the usual management.
8. For fetuses/babies at high risk of poor outcome, the decision to provide either active (survival focused) management or palliative care should be based primarily on the wishes of the parents.
9. For fetuses/babies at moderate risk, active management should be planned.
10. If life-sustaining treatment for the baby is anticipated, pregnancy and delivery should be managed with the aim of optimising the baby's condition at birth and subsequently.
11. Conversations with parents should be clearly documented and care taken to ensure that the agreed management plan is communicated between professionals and staff shifts.
12. Decisions and management should be regularly reviewed before and after birth in conjunction with the parents; plans may be reconsidered if the risk for the fetus/baby changes, or if parental wishes change.

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BAPM Framework

- Active care (survival focused)
- Palliative care (comfort focused)
- **Risk based approach to decision making**
- Gestation-based risk assessment , including mortality and survival with severe impairment
- Modified risk assessment
 - Fetal factors
 - Clinical conditions
 - Therapeutic strategies
 - Clinical Setting

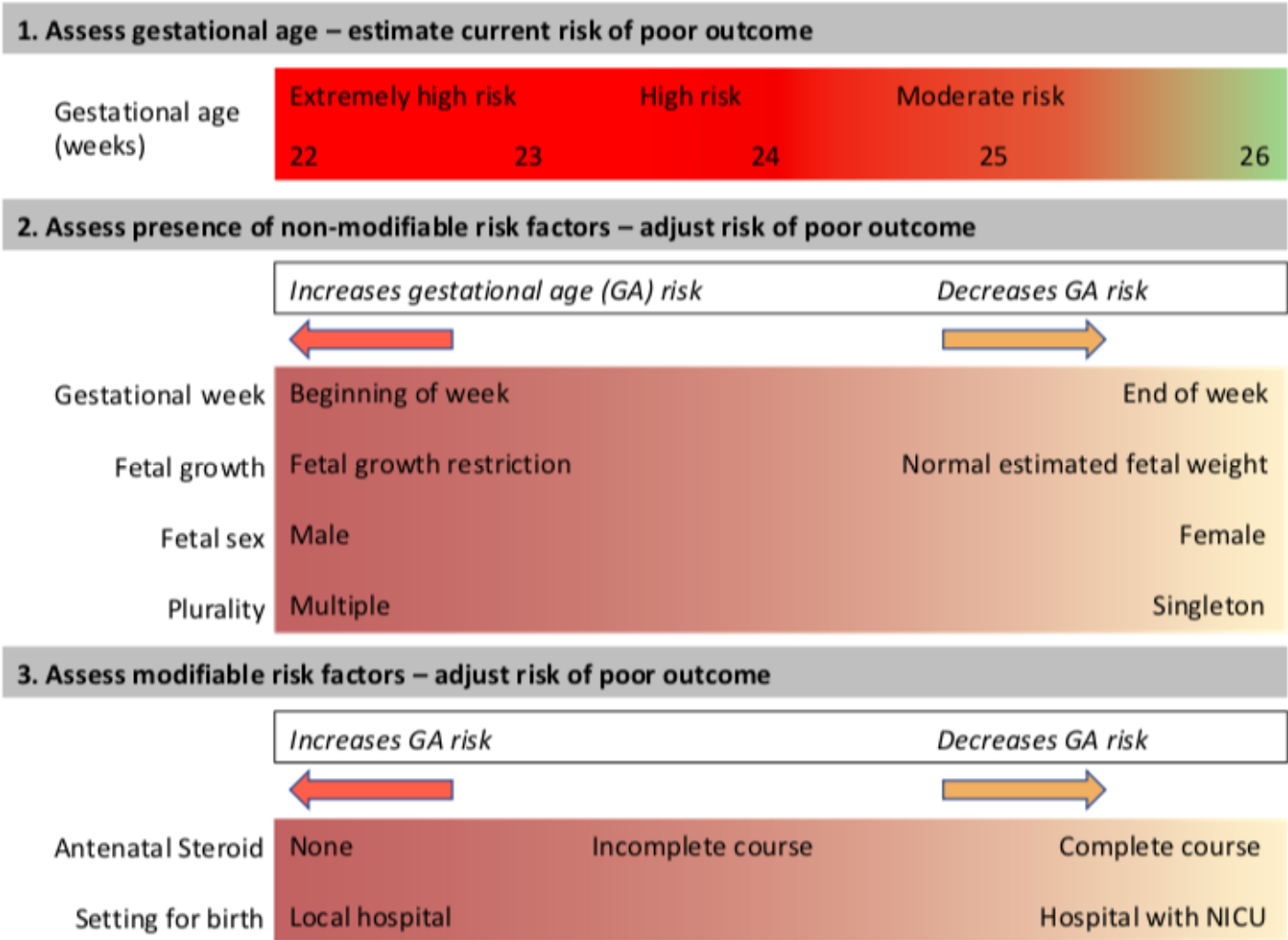


Figure 1: Proposed visual tool for refinement of risk

BOX 1

Extremely high risk: The Working Group considered that babies with a > 90% chance of either dying or surviving with severe impairment if active care is instigated would fit into this category. For example, this would include:

- 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

High risk: The Working Group considered that babies with a 50-90% chance of either dying or surviving with severe impairment if active care is instituted would fit into this category. For example, this would include:

- 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: The Working Group considered that babies with a < 50% chance of either dying or surviving with severe impairment if active care is instituted would fit into this category. For example, this would include:

- most babies \geq 24⁺⁰ weeks of gestation
- some babies at 23⁺⁰ - 23⁺⁶ weeks of gestation with favourable risk factors.

Box 1 represents the consensus of the Working Group in regard to risk categories for the purposes of this framework.

BAPM Framework

- Counselling parents and decision making
- Agreeing and documenting a management plan
- Obstetric management
- Neonatal management

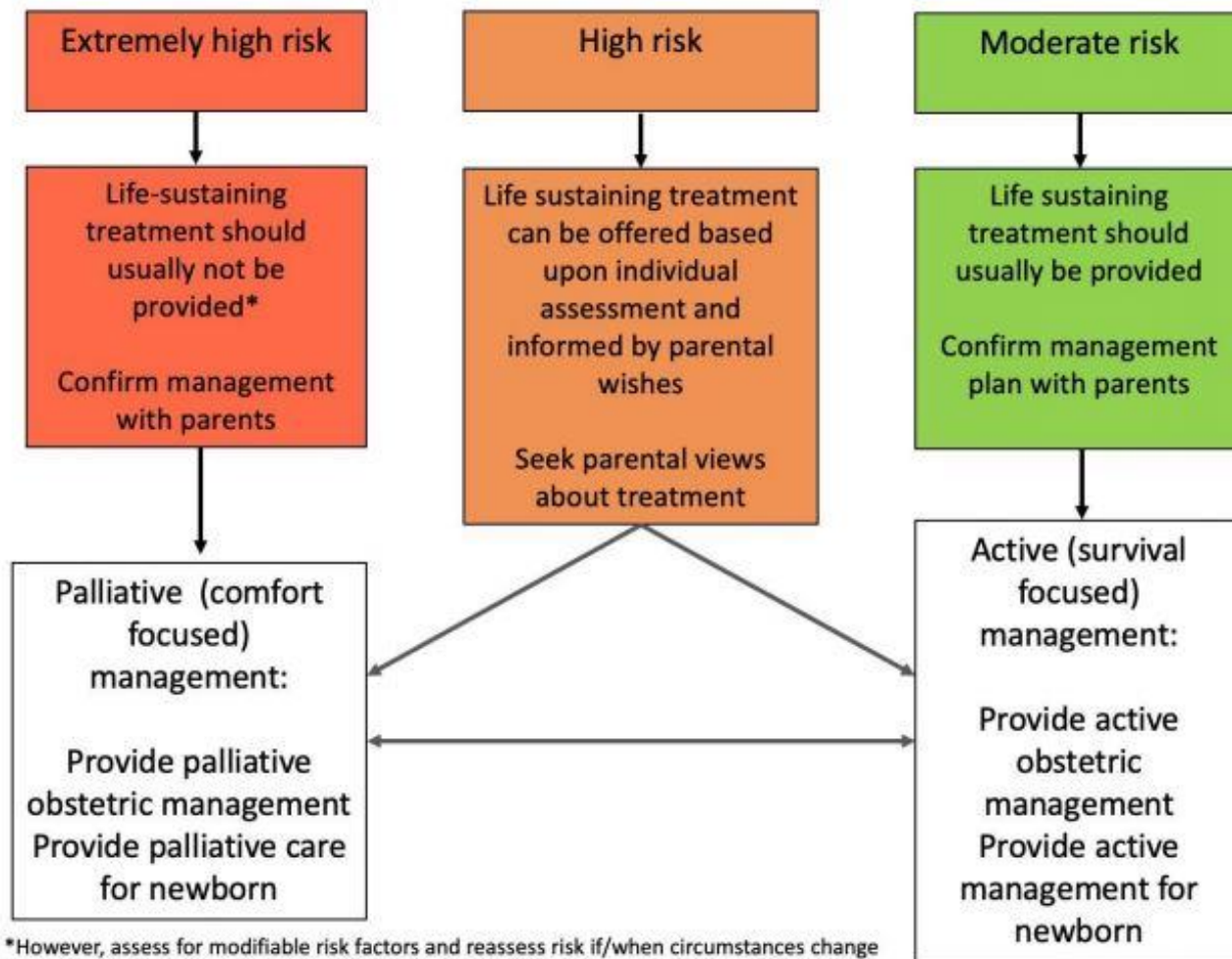


Figure 2. Decision-making around management of delivery, following risk assessment and after consultation with parents.

Neonatal Management Plan

- Active survival focused
 - Stabilisation and support , direct supervision senior clinician
 - Deferred cord clamping , thermal care, skin integrity
 - Facemask ventilation, intubation, surfactant , resuscitation if appropriate
 - Redirection if appropriate
- Parents present for stabilisation/ resuscitation
 - Palliative comfort focused
 - Individualized care plan , comfort focused , parents wishes

What else ?

Appendix 1: Outcomes for extremely preterm babies

Appendix 2: Situations of uncertainty and potential conflict

Appendix 3: Communication: Guidance for professionals consulting with families at risk of extreme preterm delivery.

Appendix 4: Helping parents to understand extreme preterm birth.

Appendix 5: Example scenarios

Appendix 2: Situations of uncertainty and potential conflict

- Uncertain gestational age
- Rapid birth without time for counselling
- Baby born in unexpectedly good condition
- Baby born in unexpectedly poor condition
- Parents request a 2nd opinion
- Threatened birth before 22 + 0 weeks gestation

Appendix 3: Communication: Guidance for professionals consulting with families at risk of extreme preterm delivery.

- Conveying risk : Extremely high risk, high risk, moderate risk
- Right time
- Who should be involved ? **Joint discussion**
- Structure of consultation
 - Exploring parents prior knowledge and understanding
 - Balanced information
 - Conveying risk
 - Discussing outcomes
 - Discussing palliative care
 - Decision making
 - Parental involvement
 - Documentation

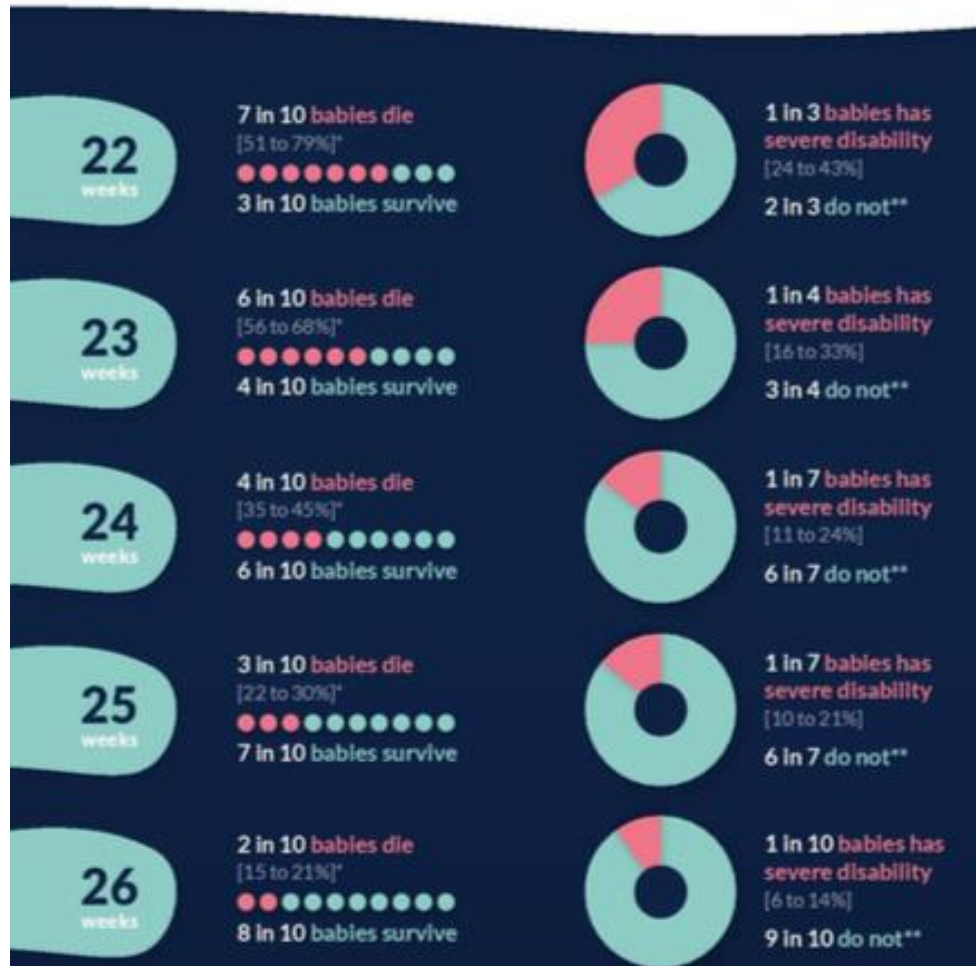
Outcome for babies born alive between 22 & 26 weeks' gestation†

Survival
In babies who receive intensive treatment

● Died ● Survived

Severe disability
In survivors**

● Severe disability ● No severe disability**



The survival percentages are for babies who are born alive and receive active stabilisation.

†Some babies born this prematurely cannot survive labour and birth

* The lower and upper figures indicate how certain we are of the true survival rate.

** Up to a quarter of children without severe disability may nonetheless have milder forms of disability such as learning difficulty, mild cerebral palsy or behavioural problems.

Example – 22+3

1. Assess gestational age – estimate current risk of poor outcome

	Extremely high risk	High risk	Moderate risk		
Gestational age (weeks)	22 X	23	24	25	26

2. Assess presence of non-modifiable risk factors – adjust risk of poor outcome

	<i>Increases gestational age (GA) risk</i>		<i>Decreases GA risk</i>	
Gestational week	Beginning of week		End of week	
Fetal growth	Fetal growth restriction		Normal estimated weight	
Fetal sex	Male		Female	
Plurality	Multiple		Singleton	

3. Assess modifiable risk factors – adjust risk of poor outcome

	<i>Increases GA risk</i>		<i>Decreases GA risk</i>	
Antenatal Steroid	None	Incomplete course	Complete Course	
Setting for birth	Hospital without a NICU		Hospital with NICU	

Example – now 22+5

1. Assess gestational age – estimate current risk of poor outcome

	Extremely high risk	High risk	Moderate risk
Gestational age (weeks)	22	X 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 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
Setting for birth	Hospital without a NICU	Hospital with NICU

Example – 24+3

1. Assess gestational age – estimate current risk of poor outcome

	Extremely high risk	High risk	Moderate risk	
Gestational age (weeks)	22	23	24	25
			X	
				26

2. Assess presence of non-modifiable risk factors – adjust risk of poor outcome

	<i>Increases gestational age (GA) risk</i>		<i>Decreases GA risk</i>	
Gestational week	Beginning of week			End of week
Fetal growth	Fetal growth restriction			Normal estimated weight
Fetal sex	Male			Female
Plurality	Multiple			Singleton

3. Assess modifiable risk factors – adjust risk of poor outcome

	<i>Increases GA risk</i>		<i>Decreases GA risk</i>	
Antenatal Steroid	None	Incomplete course		Complete Course
Setting for birth	Hospital without a NICU			Hospital with NICU

Example – 23+6

1. Assess gestational age – estimate current risk of poor outcome

	Extremely high risk		High risk		Moderate risk	
Gestational age (weeks)	22	23	X	24	25	26

2. Assess presence of non-modifiable risk factors – adjust risk of poor outcome

	<i>Increases gestational age (GA) risk</i>		<i>Decreases GA risk</i>	
Gestational week	Beginning of week			End of week
Fetal growth	Fetal growth restriction			Normal estimated weight
Fetal sex	Male			Female
Plurality	Multiple			Singleton

3. Assess modifiable risk factors – adjust risk of poor outcome

	<i>Increases GA risk</i>		<i>Decreases GA risk</i>	
Antenatal Steroid	None	Incomplete course		Complete Course
Setting for birth	Hospital without a NICU			Hospital with NICU

Summary BAPM

Conclusions

- Revised framework builds on improvements in neonatal care
- It is a refinement – not a radical change
- Active treatment appropriate – on a case by case basis for some babies <23 weeks
 - Aligns UK with international practice
 - Matches guidance to practice in many UK neonatal units
- Encourages an **individualized approach**
- Importance of communication and consultation with parents
- Importance of working in partnership with obstetric colleagues to achieve the best outcome for babies and families

TV & Wessex Neonatal ODN

- Policy for Transfer of infants to a NICU/LNU
- Parent information leaflets
 - Patient Information Booklet Extremely High Risk or 20 – 21 weeks gestation
 - Patient Information Booklet High Risk or 22- 24 weeks gestation
 - Patient Information Booklet Moderate risk of 25 weeks gestation
- Extremes of prematurity Parent Information source UHS

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MBBRACE –UK Signs of life

- Births included in the guidance < 24 weeks
 - Babies before 22+0 weeks of few survive labour and birth. Active survival-focused neonatal care is not appropriate.
 - Around half of babies born at 22+0 to 22+6 weeks of gestational age are likely to show signs of life and the likelihood of this increases at 23+0 to 23+6 weeks of gestational age.
- Assessment of signs of life
 - Easily visible heartbeat seen through the chest wall
 - Visible pulsation of the cord
 - Breathing or sustained gasps
 - Definite movement of arms and legs

Persistent, readily evident visible physiological responses, auscultation and palpation not necessary

Short lived reflex activity can be observed within the first minute of life of babies that have died shortly before birth, not classified as signs of life