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# A Mini-Review of the BAPM Framework for Practice – Perinatal Management of Extreme Preterm Birth before 27 Weeks of Gestation

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## Abstract

The recent publication of a new framework for practice from the British Association of Perinatal Medicine has altered the management of babies born in the UK at the threshold of viability. A risk stratification is used to determine which infants will receive active management, and which receive palliative management. This is achieved through a combination of assessment of risk factors and discussion with parents. The most notable feature of the new framework is the recommendation to consider babies of 22 weeks gestation for active care. This has been the subject of much discussion amongst neonatal and obstetric teams. The framework also emphasises the importance of early transfer to a maternity unit with a co-located neonatal intensive care unit if active management is pursued. This new guidance has led to a change in the way the management of extreme prematurity is approached, and will continue to impact on neonatal, obstetric, and anaesthetic care.

## Introduction

The British Association of Perinatal Medicine (BAPM) published a new framework for practice in October 2019 – "Perinatal Management of Extreme Preterm Birth Before 27 Weeks of Gestation"[1]. Prompted by advances in care and subsequent improvement in survival rates in the UK[2] and overseas[3], a review of the evidence was performed, and consequently the framework written to outline changes in extreme preterm neonatal care.

The framework describes a risk-based approach to decision making for babies born from 22+0 to 26+6 weeks of gestation. For the purposes of this guidance, an "unacceptable" outcome is taken as death or severe disability, and the chance of these outcomes occurring is considered. Using a risk assessment, along with parental counselling, an appropriate management plan can be decided upon and implemented. This management is broken down into two arms – "active (survival focused)" and "palliative (comfort focused)" care. There is emphasis placed on optimisation of care, place of birth and the importance of delayed cord clamping and early colostrum expression, if active management is chosen.

This framework is the first time that active resuscitation of babies born before 23 weeks of gestation has been recommended in the UK. Unsurprisingly, this has led to some discussion and disagreement amongst neonatologists[4]. Below is a short summary of the framework and a discussion of the debate surrounding it.

## Overview of Framework

The BAPM framework uses a risk – based approach to establish

which babies would be most appropriate for active (survival-focussed) care, or palliative (comfort-focussed) care. The assessment strategy used in the framework is broken down into three parts, as outlined below.

### Risk Assessment

The gestational age (Table 1) is used in conjunction with the presence or absence of non-modifiable and modifiable risk factors (Table 2) to stratify the risk category of the foetus. The risk categories are "very high risk", "high risk", or "moderate risk". It is suggested that those in the "very high risk" category should not normally be considered for active management, based on the outcome data. A "moderate risk" foetus should usually receive active care, and the management of a "high risk" foetus should be decided on an individual basis, in conjunction with parental wishes.

### Counselling

The next stage of risk stratification involves consideration of parental views. The framework outlines the best way of presenting this information to parents, including an infographic (Appendix 4 of the framework). A senior midwife, obstetrician, and neonatologist should be involved, and if possible, these same individuals should continue any further discussions with parents. Risks should be explained appropriately, and parents counselled on what to expect during and after birth. There is a notable absence of nursing colleagues within this multi-disciplinary team in this discussion model, which perhaps needs to be considered.

It is important to describe what may happen when the baby is born: if palliative care is most appropriate, the parents need to be aware that the baby may survive for some time after birth. A scenario where the baby is born in an unexpectedly good or bad condition should also be discussed with parents as well as the possibility that the route of care may change from active to palliative, or vice versa.

### Agreement and Documentation

With parents and clinicians in agreement, an individualised plan should be clearly documented. Parents may request the presence of a neonatologist, even if care is to be comfort-focused. This should be accommodated. The framework emphasises that obstetric care will vary based on the care plan for the infant: if deemed for palliative care, interventions should only be carried out for maternal benefit. However, if for active care, full monitoring should be applied, and optimisation should occur which includes the administration of antenatal steroids and magnesium sulphate as well as delayed cord clamping and early expression and administration of colostrum.

The framework concludes with the recommendation that a lead clinician is appointed locally to ensure the correct implementation of the new guidance. It highlights the importance of network agreement to allow for the timely transfer of a mother antenatally to a centre with a co-located neonatal intensive care unit (NICU).

**Table 1:** Gestation-Based Risk Factors

| | Very High Risk | | High Risk | Moderate Risk | |
|---|---|---|---|---|---|
| Gestational Age (weeks) | 22 | 23 | 24 | 25 | 26 |

**Table 2:** Non-modifiable and modifiable risk factors

| Non-modifiable risk factors | Modifiable risk factors |
|---|---|
| Born at beginning of GA week | Birth in unit with NICU co-located |
| Growth Restricted | No magnesium sulphate |
| Male sex | No antenatal steroids |
| Multiple pregnancy | |
| PROM before 24 weeks | |
| Chorioamnionitis | |

## Change in Clinical Practice

Crowley and Fox (2020) outline the practical changes this means for obstetric and neonatal teams[5]. Most conspicuously, resuscitation of infants from 22 weeks gestation should now be considered. Pregnant women who may deliver from 22+0 – 26+6 weeks gestation should be transferred to a centre with a NICU and if active treatment is decided upon, optimisation is essential to ensure the baby is born in the best condition possible. Furthermore, the parents should be consulted with accurate, up to date information, and the situation should be reassessed regularly if the pregnancy continues. Finally, a senior neonatologist should be present at all cases, to ensure excellent care is provided, whether active or palliative.

## Ethical Considerations

Several issues surrounding the BAPM framework have been discussed since its publication. Firstly, it has further stimulated an ongoing debate around the threshold of viability among the international neonatal medicine community. Many experienced clinicians feel it is not appropriate to provide active care for extremely premature infants. Reasons for this include an association with high rates of disability, higher burden on healthcare services, and increased burden on parents to look after children with high levels of need. While none of these issues can be disputed, it is worth considering that with more experience of caring for extremely premature infants, rates of disability will fall. This trend has been seen already[2].

Additionally, some, including Resuscitation Council UK (RCUK) suggest that the framework should include the statistics around moderate disability when discussing outcomes parents, as opinions on the definition of an "acceptable" outcome may vary[6]. The framework accounts for this with more detailed data outlined in Appendix 1, laid out in a patient-friendly infographic in Appendix 4.

However, the onus of fully explaining different levels of disability falls on the clinician. In Appendix 3, a suggested outline for consultation with parents, this is touched upon with some suggested phrases, but is not comprehensive. It also fails to mention the possibility of behavioral difficulties such as Attention Deficit Hyperactivity Disorder seen as a consequence of preterm birth[7], although this would be considered a less significant outcome.

Healthcare burden is an issue starting before delivery, continuing throughout the whole lifetime of the individual. In theory, resuscitation of infants over 22 weeks gestation might greatly increase workload for clinicians, both in time taken to discuss with parents, and in terms of management of the baby. However in reality, the volume of pregnant women who may deliver between 22 and 23 weeks gestation is very small: in England and Wales in 2019; there were 206 live births with a gestational age between 22+0 and 22+6 weeks[8]. Further care into childhood and beyond might also be significant; however, even in large obstetric centres numbers remain low.

Some concern has been expressed surrounding the "oversimplification" of the risk factors described, with no quantification of the significance of each. Although the framework briefly mentions the possibility of a risk calculator, with such low overall numbers of babies, the confidence intervals would be large, and it would be very challenging to implement an accurate calculator. Furthermore, the concept of a "calculator" suggests a degree of automation, removing the individualised approach that the framework is striving for. The danger is that a risk calculator in inexperienced hands may lead to upset and confusion for parents, and removes the nuance that can only be provided by an experienced clinician.

Finally, Fox (2020)[4] has suggested a more widespread use of fetal fibronectin to anticipate premature delivery and act on inter-centre transfer when necessary, as is briefly described in the Saving Babies Lives Care Bundle[9]. This is not highlighted within the BAPM framework, despite being the most accurate method to predict preterm delivery[10].

## Summary

The new BAPM framework for practice around delivery of extremely premature infants combines individualised risk stratification with parental views to determine the best management for each infant. The factors determining risk are clearly laid out, as is the data used to compile the guidance. The guidance encourages active participation of the parents in the decision-making process and highlights the importance of clear documentation. The most critical update is the consideration of resuscitation of infants from 22 weeks gestation. It also places further emphasis on the transfer of pregnant women to a centre with a NICU whenever possible[11]. The new guidance on gestational age, along with other aspects, is currently widely debated among neonatologists and obstetricians. Ultimately, the focus going forward should be uniformity between all units in the UK, to allow for the best possible care for babies born extremely preterm.

## Conflicts of Interest

The authors have no conflicts of interest to declare.

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