INDEPENDENT MATERNITY SERVICES OVERSIGHT PANEL

Cwm Taf Morgannwg University Health Board

Thematic Neonatal Category Report
April 2022

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Foreword

This is the third in a series of thematic reports published by the Independent Maternity Services Oversight Panel about the maternity and neonatal care provided by the former Cwm Taf University Health Board.

This particular report focuses on the care of mothers and their babies who sadly died or required specialist neonatal care following birth. In particular, it summarises the key themes and issues which have emerged from the 70 clinical reviews of maternity and neonatal care provided by the Health Board at the Prince Charles and Royal Glamorgan Hospitals, mostly between 01 January 2016 and 30 September 2018.

The independent teams who conducted the reviews focused on establishing whether the care and treatment provided to the mothers and their babies was appropriate and of the standard expected. The teams also considered whether any adverse outcomes could have been avoided and if so, whether there are any lessons which can be learned by Cwm Taf Morgannwg University Health Board or the NHS more broadly, which would avoid the same happening again in the future.

The report considers the learning from the clinical reviews in the context of the Health Board's ongoing Maternity and Neonatal Improvement Programme. It explains whether the underlying causes of any deficiencies which have been identified were previously highlighted by the Royal Colleges or by the Panel through its 'deep-dive' review of the neonatal services provided at Prince Charles Hospital. If so, it sets out what the Health Board has done, is currently doing or still has to do, to put things right.

The women and families who were adversely affected by the deficiencies identified by the Royal Colleges lie at the heart of the clinical review process. The report explains how those women who wished to were able to contribute to the review of their care and provide insight into the personal impact for them and their families.

It is humbling that one of the things which women and families most often say when sharing their stories is that they do not want what happened to them to happen to others; they want their experience to make a difference for women and families using maternity and neonatal services now and in the future. It is with that important sentiment in mind, that the Panel presents this report.

Cwm Taf Morgannwg University Health Board

Independent Maternity Services Oversight Panel

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Contents

1 Background and Introduction 1
2 About this Report 2
3 What We Did 3
3.1 Clinical Review Programme 3
3.2 Clinical Review Methodology 4
3.3 Assessment Criteria 6
3.4 Quality Assurance 7
3.5 Health Board Response 8
4 What We Found 8
4.1 Maternity Care 9
4.1.1 What We Found 9
4.1.2 What Does This Mean? 11
4.2 Neonatal Care 12
4.2.1 Nature of Care Provided 12
4.2.2 Grading of Modifiable Factors 13
4.2.3 What We Found 13
4.2.4 What Does This Mean? 19
4.3 Joint Maternity and Neonatal Care 19
4.3.1 A Baby Being Born in the Most Appropriate Setting 20
4.3.2 Initial Neonatal Resuscitation and Early Stabilisation 20
4.3.3 Education and Training 20
4.3.4 MDT Review of Incidents 21
4.3.5 Support for Families 21
5 Women's Experience of Care 21
5.1 One Woman's Experience 22

5.2 The Key Themes ... 24

5.2.1 Failure to Listen to Women and Involve Them in Decisions ... 24

5.2.2 Empathy and Use of Language ... 25

5.2.3 Monitoring and Missed Opportunities ... 25

5.2.4 Neonatal Care ... 25

5.2.5 Impact of Women’s Experience, Raising Concerns and Influencing Change ... 26

6 What Does This Mean in the Current Context? ... 27

6.1 Putting the Findings into Context ... 28

6.2 Correlation of Findings against the Royal Colleges’ and Neonatal Deep-Dive Recommendations ... 29

6.2.1 Maternity Care ... 29

6.2.2 Neonatal Care ... 30

6.3 What Does This Mean for The Health Board’s Improvement Plans? ... 31

7 Conclusions and Recommendations ... 32

7.1 Recommended Areas for Specific or Continued Focus ... 33

7.1.1 Areas for Continued Focus – Previous Thematic Review Findings ... 33

7.1.2 Areas for Continued Focus – Neonatal Deep Dive Findings ... 34

7.1.3 Areas for Specific Focus – Joint Working and Learning from Reviews ... 34

7.2 What Happens Next ... 35

8 Appendix A – Technical Analysis ... 36

8.1 Maternity Care ... 36

8.2 Neonatal Care ... 42

9 Appendix B – Schedule of Royal College Recommendations ... 48

10 Appendix C - Schedule of Neonatal Deep-Dive Recommendations ... 49

1 Background and Introduction

This is the third in a series of thematic reports to be published by the Independent Maternity Services Oversight Panel (the Panel).

Cumulatively, the three reports identify the learning which has emerged from the Panel's programme of independent clinical reviews of the maternity and neonatal care historically provided by the former Cwm Taf University Health Board[1] (the Health Board) at the Prince Charles and Royal Glamorgan Hospitals.

It is essential that any learning which might help to improve the quality and safety of maternity and neonatal services is identified, shared and acted upon at the earliest opportunity, not only within the Health Board but also more widely across Wales. It is equally important that where further information becomes available which might provide answers to unresolved questions for women and families, it is shared with them at an appropriate time.

That is why the findings from the Clinical Review Programme have been published incrementally as they have emerged and why women and families have been informed of the outcome of their individual review before the wider findings have been made public.

The first report in the series, referred to as the Thematic Maternal Category Report, was published in January 2021. This report focused on the care of mothers who needed unplanned emergency treatment during childbirth.

The second, the Thematic Stillbirth Category Report, was published in October 2021 and focused on the care of mothers and their babies who sadly, were stillborn.

This third report, the Thematic Neonatal Category Report, focuses on the care of mothers and their babies who sadly died or required specialist neonatal care following birth. It identifies the key themes and issues which have emerged from the clinical review of the care and treatment provided to 70 mothers and 70 babies,[2, 3] mostly between 01 January 2016 and 30 September 2018.[4]

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[1] On 01 April 2019 Cwm Taf University Health Board was superseded by the newly established Cwm Taf Morgannwg University Health Board following NHS boundary changes.

[2] The care provided to one baby was not reviewed within this cohort as the baby was delivered outside of Cwm Taf University Health Board and did not receive any neonatal care or treatment from the Health Board.

[3] There were two sets of twins within this cohort. However, only three babies were reviewed as one baby did not meet the agreed inclusion criteria, resulting in a total number of 70 neonatal reviews.

[4] A small number of reviews were included from outside of this timeframe because they were self-referred by women or their families and fitted within the inclusion criteria.

Although the report focuses primarily on the analysis of the reviews of maternity and neonatal care, it also draws in other areas of the Panel's work which add further insights to the learning which has emerged. These are summarised below.

During earlier stages of the Clinical Review Programme, some concerns emerged about the Health Board's neonatal service, particularly in relation to:-

- the management and reporting of serious incidents;
- neonatal involvement in care where mothers required emergency treatment during childbirth or where babies were stillborn but resuscitation had been attempted.

The concerns about neonatal involvement related to the quality of care provided, the contribution of the neonatal service to serious incident investigations and the failure to identify poor care so that lessons could be learned and embedded into practice.

Those concerns, together with similar concerns which emerged from the Health Board's more recent Perinatal Mortality Review Tool (PMRT) reviews of its neonatal care, resulted in the Panel and the Health Board jointly commissioning a 'deep-dive' review of the neonatal service currently being provided at Prince Charles Hospital.

The report summarising the key findings from the deep-dive review was published in February 2022. It included analysis of a number of clinical case assessments which were identified using selection criteria similar to that used within the Clinical Review Programme. These provided valuable insights into the quality of the clinical care provided by the neonatal service at Prince Charles Hospital during 2020 and these have been reflected in the learning which is identified in this report.

The Panel also identified a number of episodes of care in the maternal and stillbirth categories of the Clinical Review Programme where it was felt important to review the neonatal care provided. This included, for example, instances where the baby was cared for or kept under observation on a neonatal unit whilst the mother received emergency treatment, or where a baby was born away from the hospital and attempts were made to resuscitate but sadly they were stillborn.

The learning from the review of the maternity aspects of the care provided in these instances was previously reflected in the relevant thematic category report. However, a summary of the key themes and issues which have emerged from the neonatal aspects of those reviews is provided in Section 4.2.3.8 of this report.

2 About this Report

It is important to emphasise that this report provides only a high-level summary of the learning which has emerged from the neonatal category. It is written very much with the women and families who have been most affected by the Health Board's previous failings in mind. For that reason, and in order to make the key messages as clear and concise as possible, the body of the report does not include detailed analysis, complex statistics or detailed clinical information.

For those who want to understand the evidence which lies behind the conclusions which are set out in the report, a detailed technical analysis, produced with the support of the NHS Wales Delivery Unit, is included at Appendix A.

The Panel has assumed that for the most part, those who will find this report of interest will be familiar with the events which led to the Royal Colleges' review and the recommendations which emerged from it. A broad understanding of the role of the Panel and its terms of reference, including the requirement to undertake a programme of retrospective clinical reviews, has also been assumed.

Likewise, the Panel has assumed that readers will be aware of the deep-dive review which the Panel undertook into the neonatal services provided at Prince Charles Hospital, as well as the key findings and recommendations which emerged.

For those less familiar, further information about the Panel's role, its terms of reference and all previously published reports can be accessed via the Welsh Government's website.

The Minister for Health and Social Services is also publishing the Panel's April 2022 Progress Report alongside this report. This provides a current assessment of the Health Board's progress in delivering its Maternity and Neonatal Improvement Programme and signposts to supporting documents which provide further background information.

In order to keep this report as concise as possible, only a brief overview of the background and a relatively succinct summary of the clinical review process has been included. However, links are provided to other documents which contain more detailed information for anyone who wishes to know more.

3 What We Did

3.1 Clinical Review Programme

As a key part of its terms of reference, the Panel is required to conduct a programme of independent clinical review of the maternity and neonatal care provided at the Royal Glamorgan and Prince Charles Hospitals.

The primary purpose of the Clinical Review Programme is to identify organisational learning which will help to improve the quality and safety of maternity and neonatal services now and into the future and to provide answers, where answers exist, for women and families who have questions or concerns about the care they received.

The programme is not intended to apportion blame, specifically seek out individual deficiencies or focus exclusively on error, omission or poor practice. Indeed, some areas of good practice have been observed in addition to the areas identified for improvement.

Further information regarding the wider Clinical Review Programme, its purpose and the approach taken can be found within the Panel's Clinical Review Strategy.

There are four discrete elements to the Clinical Review Programme, the most significant of which is a review of care provided between 01 January 2016 and 30 September 2018. For ease of reference, this element is referred to as the '2016-2018 Look-Back'.

In total, 161 reviews have been completed as part of the 2016-2018 Look-Back. The reviews were divided into three categories which have been undertaken consecutively in the order outlined in Table 1 below.

Table 1: Description of Clinical Review Categories

Category	Description
1. Maternal mortality and morbidity	Care of mothers, including those who needed admissions to intensive care
2. Stillbirths	Babies who sadly were stillborn
3. Neonatal mortality and morbidity	Babies who sadly died or needed specialist care immediately following their birth

The neonatal category, which involves 70 reviews of maternity and neonatal care, is the third to be completed. It is important to highlight that the review looks at the full 'clinical case' considering both mothers' and babies' care rather than specific episodes or attendances. Predominately the 'clinical cases' were selected for review by applying the Each Baby Counts inclusion criteria developed by the Royal College of Obstetricians and Gynaecologists (RCOG). Throughout the report there is reference to the 'maternity review' and 'neonatal review' to differentiate between the services provided throughout the 'clinical case'.

3.2 Clinical Review Methodology

A simplified flow chart or 'pathway' has been produced to enable women and families to more easily understand the clinical review process and this will aid understanding of the description which follows.

Although the process has been constantly evolving through practical experience, the clinical review methodology applied to the 70 maternity and neonatal reviews can be broadly summarised as follows:-

- individual reviews were allocated to one of six independent multidisciplinary teams (MDTs) which have been recruited and inducted to carry out the role;

- MDTs comprised of an Obstetrician, a Midwife, a Neonatologist, a Neonatal Nurse and where appropriate to the circumstances of each individual review, an Anaesthetist;

- in order to inform the review, the MDTs were provided with relevant clinical notes and where available, any previous local reviews, serious incident reviews or Root Cause Analysis which had been conducted by the Health Board;

- the MDTs applied a common review methodology, using standardised audit tools and reporting templates to ensure consistency;

- women and families were placed at the heart of the clinical review process; where they wished to be involved, they were able to tell their story and this was considered by the MDTs as part of the review, alongside the clinical notes.

The role of the MDTs was to review the clinical notes and any other supporting documentation to determine whether, in their professional opinion:-

- the care provided was appropriate in all circumstances;
- any deficiencies in care contributed to adverse outcomes for mothers or babies;
- any previous review or Root Cause Analysis was of an appropriate standard;
- any learning which emerged was acted upon and reflected in practice;
- there were any lessons learned (good or bad) which could be used to shape the service going forward.

The care of the mother during pregnancy and birth was assessed in the same twelve areas which were used as the basis for review in the maternal and stillbirth categories. These are set out in Table 2 below.

Table 2: Areas of Maternity Care Assessed

1. Pre-pregnancy care	2. Assessment and point of entry to care
3. Diagnosis and recognition of high-risk status	4. Referral to a specialist
5. Treatment	6. Clinical leadership
7. Education, knowledge and training	8. Documentation
9. Discharge or transfer from care	10. Communication
11. Policies and procedures	12. Women and family

There is a degree of continuity in the provision of maternity and neonatal care, particularly in terms of effective clinical leadership and the need to follow appropriate policies and procedures. However, there are also areas which are different and some which are specific to neonatal care.

For that reason, the neonatal care provided to the baby was assessed in a different but complimentary set of areas which are detailed in Table 3.

Table 3: Areas of Neonatal Care Assessed

1. Supporting transition and resuscitation	2. Stabilisation and transfer to the neonatal unit
3. Admission and first hours	4. Ongoing treatment
5. Referral	6. Discharge or transfer from care
7. Clinical leadership	8. Education, knowledge and training
9. Documentation	10. Communication
11. Policies and procedures	12. Family

Where applicable, care was assessed against contemporaneous clinical practice guidelines or standards expected of health professionals.

3.3 Assessment Criteria

Where the care and treatment provided was found to have fallen below the standards expected, the clinical review teams recorded this as a 'modifiable factor'.

Each modifiable factor was then assessed to determine the extent to which it had an adverse impact on the outcome for mothers and babies. Each of the modifiable factors was then given one of three classifications as follows:-

- Wider Learning Factor;
- Minor Modifiable Factor;
- Major Modifiable Factor.

Where no issues were identified with the care provided, this was categorised as 'No Modifiable Factors'.

Given that the quality of the care provided to mothers might subsequently have had an impact on the outcome for their babies, by necessity, the definitions for modifiable factors used to assess the maternal and neonatal elements of each review differ slightly.

These differences may appear subtle but they are significant, particularly in terms of the inference which can be drawn about the relationship between the care provided and the outcome which followed.

The definitions are set out in Table 4 overleaf and are shown side by side to enable the differences to be identified.

Table 4: Definitions of Modifiable Factors

No.	Modifiable Factors	Maternal Definitions	Neonatal Definitions
0	**No Modifiable Factor**	No issues with care identified	No issues with care identified
1	**Wider Learning Factor**	Although lessons can be learned, the issue did not affect the overall outcome	Care issues identified which would have made no difference to the outcome for the baby
2	**Minor Modifiable Factor**	The issue was a contributory factor, but different management is unlikely to have changed the overall outcome	Care issues identified which may have made a difference to the outcome for the baby
3	**Major Modifiable Factor**	The issue contributed significantly to the poor outcome. Different management may have altered the outcome	Care issues identified which were likely to have made a difference to the outcome for the baby

It is important to emphasise that the use of the terms 'minor' or 'wider learning' in these categorisations is not intended to minimise the significance of the issues, nor should it be seen to disregard the impact that these issues may have had on the experience of mothers, babies and their families.

Instead, it seeks to make clear the extent to which, in the professional opinion of the review teams, each modifiable factor influenced the overall outcome. That important distinction is something which should be borne very firmly in mind when reading the key findings set out in Section 4 of the report.

In addition to identifying any modifiable factors, the clinical review teams also made an assessment of whether the overall care and specific elements within that care were appropriate and to the standard expected. A grading of 'poor', 'adequate' or 'optimal' was provided. Where there was 'insufficient detail' to make an assessment, this was also indicated. Further information can be found at Appendix A.

3.4 Quality Assurance

Once the review had been completed, a report was prepared in a standard format setting out the MDT's findings. This was then subject to a peer review conducted by a different team for quality assurance purposes.

Only then was the report considered by a Quality Assurance Panel which comprised the Panel's four Clinical Leads, together with a quality and safety specialist, a lay advisor and where the circumstances of the review required, an Anaesthetist with extensive previous experience in this area of work.

The Quality Assurance Panel provided a further layer of validation to the individual clinical reviews and drew out common themes and patterns from the wider programme which identified learning for the Health Board.

3.5 Health Board Response

Following quality assurance, the completed clinical review reports were shared with the Health Board. This initiated a comprehensive response by the Health Board designed to validate the factual accuracy of the Panel's findings and identify what action needed to be taken in response to the learning identified. This included careful consideration of the needs of the mother and any additional care and support which might be necessary as a result of the review findings.

A robust process has been put in place to ensure that all of the required actions which emerged from the reviews are tracked and monitored and the Panel continues to oversee this as part of its wider oversight role. Where appropriate, any significant actions have been incorporated into the Maternity and Neonatal Improvement Plan which is monitored by the Health Board's Maternity and Neonatal Improvement Board and the Quality and Safety Committee.

4 What We Found

The analysis and conclusions which follow are based upon the information obtained from the clinical review of the care provided to 70 women and 70 babies, combined with the themes which have emerged from the families' stories submitted as part of the clinical review process.

It is important to emphasise that whenever a review of sufficient depth and quality is undertaken, with the benefit of independent expert understanding, learning will be found. All clinicians should strive to learn from every episode of care provided in healthcare settings. In particular, where wider learning is identified as the most significant aspect, this should not be viewed negatively. Instead, it should be seen as a rich source of opportunities for continuous improvement which enables a positive learning culture to be developed and embedded throughout the organisation.

This report seeks to present the overall findings drawn from all of the reviews conducted. However, particular focus has been given to major and minor modifiable factors because different care provided in these areas may have changed the overall outcomes for mothers and their babies. Equally, the learning identified could improve outcomes for those using services now and into the future.

Given that maternity and neonatal care are predominantly provided by different teams, adhering to specific guidelines and practices appropriate to their respective disciplines, separate reviews of these elements of care have been conducted. For this reason, the sections which follow separately summarise the key themes and issues identified in the maternity and neonatal care provided.

That said, it is important to recognise the impact that poor care for mothers can have on the condition of their babies at birth and the extent to which this influences the care which subsequently needs to be provided to them; maternity and neonatal services should be viewed as a seamless pathway for the provision of care for mothers and their babies. For this reason, the Panel has also drawn the separate maternity and neonatal reviews together to provide an overall picture of the care provided to mothers, their babies and wider families. This is further explored in Section 4.3.

Behind the statistical analysis, at the heart of each of the reviews there is a mother and a family who at best endured a difficult and sometimes traumatic experience and at worst suffered an adverse outcome which has had a devastating and long-lasting impact on their lives. This should be kept firmly in mind whilst reading the sections which follow.

4.1 Maternity Care

4.1.1 What We Found

The reviews of the maternity care provided to the 70 women within this category identified 317 separate modifiable factors (where the care and treatment provided was found to have fallen below the expected standards). Of these:-

- just over a fifth were **major modifiable** factors (70/317 or 22%);
- a quarter were **minor modifiable** factors (80/317 or 25%);
- more than half identified opportunities for **wider learning** (167/317 or 53%).

In terms of the potential impact of those modifiable factors on the overall outcome for mothers and/or their babies:-

- in 23 of the maternity reviews (just under a third) **at least one major modifiable factor** was identified where different management may have altered the overall outcome;
- in 25 of the maternity reviews (just over a third) **the highest category identified was a minor modifiable factor**, meaning that different management is unlikely to have changed the overall outcome;
- in 21 of the maternity reviews (just under a third) there were no major or minor modifiable factors but **opportunities for wider learning** were identified, although these would have had no impact on the outcome.

Broadly speaking, that means that different maternity care or treatment may have resulted in a different outcome for the mothers and/or babies in around a third of the maternity reviews conducted. That is generally consistent with the key conclusions which emerged from the maternal and stillbirth categories.

More than one major modifiable factor was present in 20 of the 23 maternity reviews where a major modifiable factor was identified and the highest number of major modifiable factors identified in a single review was seven.

In only one maternity review were no modifiable factors or opportunities for wider learning identified.

The four areas where **major modifiable factors** were most frequently identified across the 70 maternity reviews were as follows:-

1. **Inadequate or inappropriate treatment** was identified as a major modifiable factor in just over a quarter (18/70 reviews or 26%);
2. **Diagnosis or recognition of high-risk status** was identified as a major modifiable factor in a sixth (12/70 reviews or 17%);
3. **Clinical leadership** was identified as a major modifiable factor in over one tenth (9/70 or 13%);
4. **Education, knowledge and training** was identified as a major modifiable factor in over one tenth (9/70 or 13%).

In those maternity reviews where **inadequate or inappropriate treatment** was identified as a major modifiable factor, this most frequently related to a failure to act on a high-risk situation, inappropriate treatment, a delay in treatment or no plan of care having been made.

Where **diagnosis and recognition of high-risk status** was identified as a major modifiable factor, this most frequently related to inadequate fetal monitoring during labour, a delay in making a diagnosis and a delay or failure in recognition of abnormal vital signs.

Of particular note, fetal surveillance was a major modifiable factor in a number of the maternal reviews conducted within this category. This predominantly related to:-

- inadequate monitoring of babies' growth in the antenatal period in the presence of fetal growth restriction (when a baby does not grow at the rate expected) or where the babies' growth is greater than expected;
- inadequate fetal surveillance during labour, failing to identify abnormal fetal heart rate patterns via Electronic Fetal Monitoring (EFM) within the context of the wider clinical picture;
- inappropriate management of medication used to improve the strength of contractions following induction of labour or when labour is delayed.

In those maternity reviews where **clinical leadership** was identified as a major modifiable factor, this most frequently related to a failure to consult a senior clinician or not having an appropriate grade of staff in attendance.

Where **education, knowledge and training** was identified as a major modifiable factor, this most frequently related to a lack of education and training in the management of high-risk pregnancies or labours.

As previously stated, maternity and neonatal services should be viewed as a seamless pathway for the provision of care for mothers and their babies; the clinical impact of the individual modifiable factors which are present will contribute to a baby's condition at birth. For example, a delay in expediting the birth of a baby can be a crucial factor in determining the baby's overall clinical condition at birth. Whilst this should not impact directly on the ability of neonatal clinicians to provide appropriate interventions such as neonatal resuscitation, it may have a detrimental impact on the effectiveness of those interventions and the subsequent plan of care for the baby.

In that context, it is important to note that overall, the care provided during pregnancy (antenatal care) was assessed as 'poor' in just over a third of the maternity reviews conducted (34%) and the care provided during labour (intrapartum care) was assessed as 'poor' in two fifths (40%).

4.1.2 What Does This Mean?

Each of the reviews within this cohort represents the experience of a mother and her family whose baby sadly either died or required specialist neonatal care. Those experiences, as well as any questions and concerns left unanswered, lie at the heart of the clinical review process.

In just under a third (23) of the 70 maternity reviews conducted, the independent teams concluded that different management may have resulted in a different outcome for mothers and/or their babies.

The review teams also concluded that whilst the outcome may not have been any different for mother or baby, there were lessons to be learned from most of the remaining two thirds of the reviews; in fact, in only one of the 70 did the independent teams conclude that they would not have done anything differently in the same circumstances.

In total, across the 70 maternity reviews, the independent reviewers identified 317 individual opportunities for learning which the Health Board has now analysed and evaluated in order to determine what needs to be done to improve or further improve its working practices moving forwards.

These findings will undoubtedly be of concern to the mothers and families involved and to their wider communities, particularly those who may need to use the Health Board's services now and in the future. They will also be of concern to the Health Board and the staff who work within it.

It is important to stress that not all of the modifiable factors identified were safety critical and not all of them would ultimately have had a detrimental impact on the outcome or on the quality of the care and treatment provided.

That said, significant issues were identified and in some instances, repeatedly identified, most notably those relating to poor clinical leadership, a failure to escalate in response to increased risk and poor judgement or ineffective decision-making in relation to the treatment provided. Poor communication was also identified as a recurring and underpinning theme.

These themes closely mirror those identified through the review of the maternity care provided in both the maternal and stillbirth clinical review categories. There is also notable similarity with the themes and issues identified through maternity service safety reviews conducted in various other areas across the UK, for example, Morecambe Bay, East Kent, Ayrshire & Arran and Shrewsbury & Telford.

4.2 Neonatal Care

This next section focuses on the learning which emerged from the neonatal element of the care provided. Before outlining the key themes and issues which emerged, it is important to provide some additional context from a neonatal perspective.

4.2.1 Nature of Care Provided

The majority of the neonatal care reviewed in this category was provided between 2016 and 2018 which was before the reconfiguration of maternity and neonatal services in 2019 and before the boundary changes that resulted in the establishment of Cwm Taf Morgannwg University Health Board.

At that time, the neonatal teams in the former Cwm Taf University Health Board were required to provide the basic fundamental elements of neonatal care across both the Prince Charles and Royal Glamorgan Hospital sites. A significant number of the neonatal reviews involved babies who were either transferred out to a neonatal intensive care unit (NICU) after a short period of local care (up to 48 hours) or sadly died within several hours of birth.

Their care involved support around the time of birth (resuscitation and stabilisation) and transfer to the neonatal unit, followed by a short period of intensive or high-dependency care. None of the babies whose care was reviewed received prolonged or complex intensive care at the former Cwm Taf University Health Board.

National guidance is available for many of the standard elements of neonatal care, so it was possible to assess the care given to the babies against these standards, including Newborn Life Support, use of therapeutic hypothermia (cooling treatment to treat suspected brain injury) and treatment of suspected infection.

It is also important to note that during the period within which care was provided, there was no dedicated 24/7 neonatal transport service in operation across Wales. At times, this was found to impact on the length of time a baby remained in the neonatal units at Prince Charles or Royal Glamorgan Hospitals following initial stabilisation, although referral for clinical advice was available via local NICU pathways.

4.2.2 Grading of Modifiable Factors

Neonatal outcomes are in many instances inextricably linked to maternity care; for example, brain injury may occur following difficulties before or during labour and delivery (known as hypoxic ischaemic encephalopathy). This in turn has a direct effect on how elements of neonatal care which are provided may be considered to have influenced the overall outcome for the baby.

Table 4 (on page 7 of the report) explains how any modifiable factors which were identified by the clinical review teams were categorised. It also shows that the categorisations for maternity care and neonatal care are subtly different and explains why that is so.

In order to grade an element of neonatal care as ‘major’, the clinical review teams required clear evidence that the outcome resulted directly from that aspect of neonatal care, as opposed to arising from maternity care. This may explain why there were almost three times as many major modifiable factors identified in the maternity reviews when compared to the neonatal reviews in this category.

4.2.3 What We Found

The reviews of the neonatal care provided to the 70 babies within this category identified 403 separate modifiable factors (where elements of the care and treatment provided was found to have fallen below the standards expected). Of these:-

- one in twenty were **major modifiable** factors (21/403 or 5%);
- over a quarter were **minor modifiable** factors (107/403 or 27%);
- over two thirds identified opportunities for **wider learning** (275/403 or 68%).

In terms of the potential impact of those modifiable factors on the overall outcome for mothers and/or their babies:-

- in 12 neonatal reviews (around one sixth) **at least one major modifiable factor** was identified which was likely to have made a difference to the outcome for the baby;

- in 34 neonatal reviews (just under half) **the highest category identified was a minor modifiable factor**, meaning that issues were identified which may have made a difference to the outcome for the baby;
- in 22 neonatal reviews (just under a third) there were no major or minor modifiable factors but **opportunities for wider learning** were identified, although these would have had no impact on the outcome.

More than one major modifiable factor was present in seven of the 12 neonatal reviews where a major modifiable factor was identified and the highest number of major modifiable factors identified in a single review was four.

As highlighted in Table 5 below, the total number of reviews in which major modifiable factors were identified was lower from a neonatal perspective than it was from a maternity perspective. This is likely to be due to the impact that the maternity care may have had on the condition of the baby at birth.

Table 5: Number of Modifiable Factors Identified at Each Grade

Element	Major	Minor	Wider Learning
Maternity	71	83	170
Neonatal	21	107	275

Despite this difference, there were a number of neonatal reviews in which multiple major and minor modifiable factors were identified, demonstrating clear deficiencies in the neonatal care provided. The total number of modifiable factors identified by the neonatal element of the reviews will undoubtedly be of concern.

In the 12 neonatal reviews where at least one major modifiable factor was identified, the review teams considered that the neonatal care provided was likely to have made a difference to the outcome. Likewise, in the 46 reviews where at least one minor modifiable factor was identified, the neonatal care provided may have made a difference to the outcome.

The areas where **major modifiable factors** were most frequently identified across all the 70 reviews in relation to the neonatal element of care were as follows:-

- **Admission and First Hours** and **Ongoing Treatment** were the most frequently reported major modifiable factors, together accounting for almost half (10) of the total major modifiable factors identified;

- **Clinical Leadership** accounted for almost one fifth (4) of the total number of major modifiable factors identified across the 70 neonatal reviews.

In only two neonatal reviews there were no modifiable factors or opportunities for wider learning identified.

It is important to recognise that high risk situations can develop suddenly in perinatal care, where unfortunately things do go wrong or there are adverse outcomes which are outside of the control of those providing care. This situation is understandably devastating for families, but it is not unique to the Health Board and can potentially arise in any perinatal service.

In such instances, it is vital to reflect in detail on the care which has been provided, identify any lessons which can be learned and ensure that these lessons are used to inform practice going forward.

Within this category, 17 neonatal deaths were reviewed. In six of these, major modifiable factors were identified in relation to the neonatal care provided. This means that if different care and treatment had been provided by the neonatal teams, it is likely that these babies would not have died.

In a further six reviews, major modifiable factors were identified in relation to the maternity care provided. This means that if the mother's care had been managed differently by the maternity teams, these babies may also not have died.

Neonatal deaths are recorded nationally via MBRRACE. The former Cwm Taf University Health Board had neonatal mortality rates more than 5% higher than the comparator group average for neonatal mortality in 2017, 2018 and 2019. Whilst there are a range of complex factors which might account for this including population health and demographic issues, the number of major modifiable factors clearly indicate that the care and treatment provided had a significant role.

The fact is that the fundamentals of both maternity and neonatal care were often not carried out to the expected standard and this influenced the outcome for the babies receiving that care. This demonstrates a perinatal service which requires significant improvement in the delivery of clinical care.

Analysis of the modifiable factors across the 70 neonatal reviews identified a number of recurrent themes through the neonatal care pathway which are summarised in the following paragraphs.

4.2.3.1 Adherence to National Guidance around Neonatal Resuscitation, Stabilisation and Transfer to the Neonatal Unit

The ability to offer appropriate resuscitation and stabilisation when a baby requires it is the very foundation of neonatal care. Clear national guidance is available and local multidisciplinary education and training across the perinatal team is required to maintain skills and ensure safe practice.

Care provided during transfer is equally as important as that provided on the delivery suite or the neonatal unit and so must be of the same standard and supported by clinical expertise. Out of the 403 separate opportunities for learning identified, 77 (just under one fifth) were related to resuscitation or stabilisation and transfer to the neonatal unit.

4.2.3.2 Decision-Making, Timely Treatment, Escalation, Leadership and Recognition of a Deteriorating Baby

There was a lack of clinical leadership evident in many of the neonatal reviews undertaken which was also reflected in clinical decision-making and the provision of timely treatment.

Early senior medical and nursing input into the management of the sickest babies cared for by the neonatal service is essential. However, this was not consistently achieved in the reviews. When senior input was not sufficiently expert or available, this led to a delay in recognising babies who were deteriorating which in turn further delayed their timely and appropriate clinical management.

4.2.3.3 Management of Cooling Treatment, Blood Gases, Hypoglycaemia and Seizures

There were specific areas of clinical care which were below the expected standard and different management may have altered the outcome for the baby. Therapeutic hypothermia (cooling treatment) is provided to babies at risk of brain injury following complications during pregnancy, labour or delivery. Although there are clear guidelines around the management of babies who require cooling, in many instances these were not followed appropriately.

Respiratory management and particularly the management of low levels of carbon dioxide in the blood (hypocapnia), which is known to affect long-term neurological development, was noted as a theme in a number of the neonatal reviews. This indicated a need for increased expertise in the management of blood gases across the medical team.

There was learning identified in a number of reviews around the management of low blood glucose levels (hypoglycaemia) and fits (seizures), often linked to the need for senior clinical decision-making and timely treatment. In both conditions, timely treatment is paramount to avoid or reduce potential harm.

4.2.3.4 Family Communication and Access

The family experience is further explored in Section 5 of the report through the stories shared as part of the review process. However, the impact of a neonatal admission on a family cannot and should not be underestimated. Supporting the whole family as part of the baby's care is an expectation of neonatal services however this was not evident in all of the reviews undertaken.

Whilst it should be noted that some examples of regular and good quality family communication were identified as part of the review process, this was inconsistent. In other instances, it was considered to be poor, particularly in the period before their baby's transfer to the neonatal unit. Separation of a family from their baby may have long lasting consequences and this must be recognised and avoided wherever possible.

4.2.3.5 Prescribing and Other Documentation

An electronic prescribing system was in place at Royal Glamorgan Hospital during this period but not at Prince Charles Hospital; this resulted in different prescribing practices taking place across the Health Board's sites. Whilst electronic prescribing systems are available and intended to reduce the risk of human error, if the software is not designed for the complexities of neonatal prescribing, this allows poor prescribing practices to take place which were identified across the reviews. Where handwritten prescriptions were used, these were often below the expected standard with multiple errors identified.

Documentation standards within healthcare settings are clearly set out by both nursing and medical professional bodies (the Nursing and Midwifery Council and the General Medical Council). These standards were not met in 67 of the 70 neonatal reviews completed. The importance of accurate and complete documentation cannot be underestimated within healthcare settings; it should provide not only a record of what happened but also provide insight into how clinical decisions were made, allowing an understanding of what was done and why.

Recording of central line positioning and X-ray interpretation supports the provision of safe and effective care but this information was lacking in at least 13 of the reviews undertaken. This led to an inappropriate use of lines in incorrect positions which can increase the risk of line-associated complications. There was no documentation identified as part of the review process to justify any clinical decisions made to use incorrectly placed lines.

4.2.3.6 Multidisciplinary Review

The reviews indicated a tendency for the neonatal and maternity teams to work separately, with a lack of communication and connection between the services which impacted on the clinical care provided. When the care provided had been internally reviewed by both the Health Board's maternity and neonatal teams, this was often done separately which hindered the identification and taking forward of any 'joined-up' learning, creating the conditions through which similar deficiencies in care could continue to occur.

4.2.3.7 Learning from Serious Incidents

A positive review and learning culture is vital to ensuring the safe provision of care. The majority of the babies whose care was reviewed within this category required transfer out for a higher level of care or sadly died. These are the highest risk instances of care provided by a neonatal unit of this nature and as such, the expectation would have been for a significant majority to have received a local review conducted by the Health Board and from this, a proportionate level of investigation determined and carried out. This investigation should have identified learning which could have been taken forward to improve perinatal care at the time.

Of the 70 maternity and neonatal reviews in this category, 27 received a serious incident investigation. However, it was considered that nearly two thirds should have triggered a serious incident investigation based on nationally recognised criteria such as neonatal deaths and HIE (hypoxic ischaemic encephalopathy) requiring cooling treatment (therapeutic hypothermia).

Of the 27 serious incident investigations which had taken place, the following conclusions were drawn:-

- only five were conducted to an appropriate standard from both a maternity and neonatal perspective and found similar issues and areas of learning as those identified through the clinical reviews;
- just under a third (eight) were conducted to an appropriate standard from a maternity perspective but did not investigate the neonatal care provided;
- over a third (ten) were not conducted to an appropriate standard from a maternity perspective and did not investigate the neonatal care provided.

It was evident from the review process that the care provided to the baby was not sufficiently considered or explored routinely as part of internal incident management processes. The absence of joined up review and investigation between maternity and neonatal services hindered the identification of shared learning from the entire pathway of care for mothers and babies, meaning that any deficiencies in care were not identified and improved in a systematic way to ensure learning and prevent recurrence.

It is important to emphasise that this finding is not unique to the Health Board; indeed, it is recognisable from reviews and investigations conducted into the maternity and neonatal services provided elsewhere in the UK. To ensure continuous learning and improvement, it is vital that reviews take place and that these are multidisciplinary in nature, utilising the expertise of all specialities involved in providing that care.

4.2.3.8 Neonatal Reviews from Previous Categories

As noted previously, the Panel identified a number of instances from the previous two review categories (maternal and stillbirth) where it was felt important to review the neonatal care which had been provided. This included, for example, instances where the baby was cared for or kept under observation on a neonatal unit whilst the mother received emergency treatment, or where a baby was born away from the hospital and attempts were made to resuscitate but sadly they were stillborn.

In total, 13 neonatal reviews were conducted in the previous categories. Within these, minor was the highest grade of modifiable factor identified in four reviews, with wider learning for the Health Board identified in the remaining nine. There was broad consistency in terms of the themes and issues identified with the 70 neonatal reviews conducted as part of this final category. This included clinical leadership, education, knowledge and training, stabilisation and resuscitation, as well as documentation and communication.

4.2.4 What Does This Mean?

The findings which have emerged from the 70 neonatal reviews identify multiple clear themes where the care was below the expected standard.

In around one sixth of the 70 neonatal reviews conducted, the independent clinical review teams concluded that different neonatal care or treatment was likely to have resulted in a different outcome for the babies involved whilst in just under half of the reviews, they considered that different treatment may have resulted in a different outcome.

In all but two reviews there were either modifiable factors or opportunities for learning identified for the Health Board. In total, the reviewers identified 156 modifiable factors and 169 opportunities for wider learning which the Health Board has now analysed and evaluated in order to determine what needs to be done to improve or further improve its working practices moving forwards.

As with the maternity element of the review, these findings will undoubtedly be of concern to the mothers and families involved and to their wider communities, particularly those who may need to use the Health Board's services now and in the future. They will also be of concern to the Health Board and the staff who work in it.

Not all of the modifiable factors identified were safety critical and not all of them would ultimately have had a detrimental impact on the outcome.

However, significant issues were identified and in some instances, repeatedly identified, most notably those relating to poor clinical leadership and issues relating to admission, first hours and ongoing treatment. A number of recurring themes were identified through the neonatal pathway providing opportunities for the Health Board to further develop its ongoing improvement programme.

Those themes were similar to those identified through the case assessments conducted as part of the deep-dive review into the neonatal services provided at Prince Charles Hospital during 2020. This suggests that the service had either not identified or not appropriately taken forward the learning from any internal reviews conducted at the time.

4.3 Joint Maternity and Neonatal Care

As previously highlighted, maternity and neonatal services are inextricably linked and should not be viewed in isolation; they provide a single pathway for the care of mothers and babies. As a result, a number of the key themes and issues to emerge from this clinical review category are cross disciplinary and relate to ineffective or insufficient communication and coordination between the services. These areas have been explored in more detail below.

The Panel acknowledges that the Health Board has now recognised and responded to the need for more effective working between maternity and neonatal services. A number of improvement actions are starting to progress in response to recommendations from the Royal Colleges and the Panel, with plans either in place or under development for those outstanding actions. The learning presented in this report should further inform these plans.

4.3.1 A Baby Being Born in the Most Appropriate Setting

During the time period covered by the review, the Heath Board's neonatal services accepted babies at or above 28 weeks gestational age. Within the clinical reviews there were three babies born below 28 weeks gestation, two of whom sadly died; in both reviews major modifiable factors were identified. There were also four further babies born at less than 32 weeks gestation across the two sites, two of whom died with major modifiable factors identified.

Whilst the babies born between 28 and 32 weeks gestation were within the admission criteria in place at the time when the care was provided, these reviews demonstrate that, when caring for the most vulnerable group of babies, the necessary expertise was not available within the Health Board meaning that the care provided was below the expected standard.

This theme was also identified as part of the Panel's deep-dive review into care provided during 2020. Clear communication and a mutual focus on the need for women to deliver preterm babies in a service with NICU facilities requires effective team working between the maternity and neonatal services.

4.3.2 Initial Neonatal Resuscitation and Early Stabilisation

The initial management of newborn babies requires well-functioning neonatal and maternity services to support resuscitation and stabilisation. In instances where babies require extensive resuscitation, the two teams must work seamlessly allowing effective escalation, clinical management in line with national guidance, clear communication and appropriate documentation.

These areas were lacking in 16 of the neonatal reviews conducted. Documentation between the two teams often did not correlate and there appeared to be an absence of clear communication between the teams and importantly, with families.

4.3.3 Education and Training

There are areas of maternity and neonatal care where staff from both teams must come together and learn, particularly around resuscitation and early neonatal care to support keeping mothers and babies together. This was not evident in 13 of the neonatal reviews conducted, with learning identified regarding the need for joint simulation training around resuscitation to support effective team working.

4.3.4 MDT Review of Incidents

As explained in detail in Section 4.2.3.7, where internal reviews were conducted into the care which had been provided, this often did not involve both the maternity and neonatal teams. Where it did, the reviews had been conducted separately, hindering the ability to identify and take forward appropriate joint learning. This enabled care which was below the expected standard to continue to be provided.

4.3.5 Support for Families

Families whose babies require neonatal care need support from both the neonatal and maternity teams with clear and regular communication about, and access to, their baby. Teams must work together and communicate effectively between themselves to ensure the experience for families is optimised. This was not apparent within most of the reviews conducted and families were often left to navigate their distress without appropriate support and information.

The teams must work, train and learn together to ensure safe and effective care across the entire maternity and neonatal journey.

5 Women's Experience of Care

All of the women and families whose care was reviewed were invited to share their experience so that this could be considered by the clinical review alongside their clinical notes. Where specific questions or concerns were raised about the clinical care provided, the MDTs were asked to provide a response based on the information available. In instances where questions were non-clinical in nature, for example relating to the hospital environment, the Health Board was asked to provide a response. All answers were included in the individual review findings shared with women and their families.

Of the 70 women and families involved in this cohort of the Clinical Review Programme, nine shared their stories and questions about their care as part of the review process. Of those, five did so with the support of Cwm Taf Morgannwg Community Health Council's advocacy service. Although this is a relatively small proportion, there was a high degree of consistency in terms of the themes which emerged, as well as a strong correlation with the clinical findings in the corresponding reviews.

There is real value in undertaking a thematic analysis of women's stories because they cover the whole pregnancy journey and explore the total experience of the care provided. The stories emphasise the impact of moving between maternity and neonatal care, including the connections between the range of services needed to support the woman and her family, especially when things do not go as planned.

The women’s stories have been analysed and five consistent themes have emerged. Women shared their experience of good care and often praised staff who provided empathy and support but they remembered those aspects of care and communication which sometimes did not meet their needs. From the women’s perspective, these were the factors that had an adverse impact on the overall quality of their care and also contributed to the adverse outcomes they experienced.

The women’s stories identified themes remarkably similar to those which were identified in the ‘Listening to Women and Families Report’ which was published alongside the Royal Colleges’ report in 2019, as well as the key themes to emerge from the maternity and stillbirth clinical review categories. This is not surprising given that the reviews occurred during the same period – a time when we know that there were deficiencies in the care being provided.

The five key themes which emerged can be broadly summarised as follows:-

i. failure to listen to women and involve them in decisions;
ii. empathy and use of language;
iii. monitoring and missed opportunities;
iv. neonatal care;
v. impact of women’s experience, raising concerns and influencing change.

5.1 One Woman’s Experience

The Panel felt it important to share one woman’s story in more detail as it brings to life many of the themes which emerged from the women’s stories and the clinical reviews. Here she describes her journey within maternity and neonatal care, the way she tried to be heard and raise her concerns about her baby, alongside what happened after her baby was born prematurely.

From early in her pregnancy, she experienced concerns and visited hospital on a number of occasions. Following a routine blood test at 16 weeks she was called to the clinic with her partner and was told that her bloods had shown that the markers for Down’s Syndrome were high. “We were given the option of having an amniocentesis test and were asked if we wanted to consider terminating the pregnancy. We decided that we would proceed with the pregnancy regardless of all the risks.” She was diabetic and attended clinic every two weeks.

About halfway through her pregnancy her waters began to leak. “I went straight to the hospital and was taken to the ward where a doctor gave me a scan. The doctor was not very nice at all, he was very abrupt when explaining that the leakage was from my back waters. He went on to say, again very coldly and abruptly, that if the baby was born at that time it was unlikely that he would survive, and even if he did survive he would be extremely poorly…There were no options given of any further treatment and I was sent home being told that I would be seen in clinic.”

Several weeks later she began to have pains and to bleed. She again attended hospital and told the midwife that she was sure she was in labour. She was dismissed: "I did try to explain how I felt and repeated that I was sure I was in labour, but I was totally ignored and given some paracetamol. She left me in the room and said 'you will be checked again in a few hours and most likely be sent home'. I was upset. I knew something was not right and I knew that it was far too soon for the baby to be born."

When she continued to experience pains a different midwife examined her and recognised that she needed to go to the labour ward immediately, "this was around 4:00 in the afternoon. She also said that they were going to arrange for me to be sent to Cardiff because when the baby was born they did not have the facilities there that he would need. When I got to the labour ward I did not really settle as I was waiting to be transferred. I kept asking what was happening but was continually being told that they were in the middle of arranging an ambulance but they were not sure how long it would take."

"My labour was getting stronger and I knew as time went on that I would not be going to be transferred before the baby was born, which of course was worrying for me because I had already been told that they did not have the specialist care in the hospital that he would need."

Her son was born that evening, "he was not attached to the umbilical cord and I was also told that there was a large clot on my placenta that was detaching. My son was not Down's Syndrome as it was thought earlier in my pregnancy."

Her son was taken to the neonatal unit and "we kept asking if he was going to be OK but being told that they were still trying to resuscitate him and also that as soon as he was stabilised he would have to be transferred over to Cardiff. It was awfully upsetting, and we kept asking over and over if we could go and see him."

It was now two hours after he was born and the family were still being told that the team were trying to stabilise their son. "I asked when he would be going to Cardiff and at that point they told us it was very unlikely that he was going to be transferred to Cardiff that night because it was too late."

Eventually, the distressed parents were taken to see their son, "it was so upsetting for us, they were still working on him and he had tubes everywhere. We did not stay very long with him but after another hour or so we kept asking how he was and had he been stabilised. It was about six hours after he was born that we were told that some doctors had been brought up from Cardiff who had been able to stabilise, sedate and ventilate him."

In the early hours of the morning their son was stable enough to be taken to Cardiff. Several hours later the family were told that they could travel to see their son. “We got to Cardiff late that morning and saw a consultant who told us that he was extremely poorly and that it was very unlikely he was going to survive. It was said that even if he did survive it was likely that he would be severely brain damaged. This was due to the amount of time he was without oxygen following his birth.”

“We stayed with him all the time…unfortunately he then suffered a bleed on the brain and there was nothing further that could be done for him. It was 2 days later when we had to make the heart-breaking decision to turn his life support machine off.”

When reflecting she shared the consequences of her experience and treatment. “I was made to believe at the time and following the birth of my baby boy that I was to blame for his death. I have lived with that guilt and shame for all this time, wondering what I had done wrong. Deep down I knew that something was not right from being admitted to hospital to my baby passing away.

The IMSOP report has now proven that it really was not my fault, although in the beginning it was a big relief for me, it has now made me angry that I have lived with all of this unnecessarily and also angry about the impact it has had on me over the years. I am so glad that this review was done. I have received an apology from the Health Board which I accept, although nothing will ever bring my son back.”

5.2 The Key Themes

Family experiences of neonatal care are described comprehensively within the report summarising the findings from the deep-dive review. However, the key themes arising from this cohort of clinical reviews are set out in this section.

5.2.1 Failure to Listen to Women and Involve Them in Decisions

The most commonly used phrase in the stories analysed was **“I was not listened to”**. Women emphasised that they were not always taken seriously or believed when they raised concerns, or that their questions did not appear valued.

> “Every time I raised concerns I was told “it’s my job, I know what I’m doing.” I just felt like I was never asked anything or listened to at all.”

Women spoke about not feeling involved in decisions and felt discouraged from asking questions about their care.

> “I did not want to be induced but felt like I was pressured into it – no one took the time to explain any other options.”

5.2.2 Empathy and Use of Language

From the stories shared, women talk about the impact of off-hand remarks or poor attitudes from staff which made them feel undervalued or disregarded; they remember not just what was said, but how it was said.

> "Their responses were dismissive. I was made to feel like I didn't matter."

> "A midwife checked me over and told me that I was not in labour. I said that I was sure I was but she said straight back "how would you know, you have never been in labour before."

5.2.3 Monitoring and Missed Opportunities

A number of women and families emphasised a failure to monitor their progress during pregnancy despite them having raised concerns, reported their symptoms and shared their high-risk status.

> "I was sure there was something wrong with my baby. I had expressed these worries to numerous midwives, explaining that I had an overwhelming worry of a stillbirth…my concerns were labelled as imaginary."

> "I would like to know if she even documented my visit in my notes, but from what I remember, she didn't even ask my name. That evening I returned to the ward. I always wonder if she knew it was me that came back that evening and was blue lighted to Bristol."

5.2.4 Neonatal Care

5.2.4.1 Separation and a Lack of Communication

A particular issue for the women and families who shared their stories was the distress caused by separation from their babies. In some instances, staff did not appear to know what was happening to the baby or did not openly share this information and did not recognise the emotional needs of women and their families.

> "When he was about two days old a nurse came and took my son saying that he needed to be weighed or something, but they did not bring him back and we did not know where he was."

5.2.4.2 Breastfeeding Support

They wanted support and encouragement to breastfeed but found that this was not always forthcoming.

> "I wanted to breastfeed my son, but they gave him formula milk in SCBU without asking me."

5.2.4.3 Emotional and Bereavement Support

A number of the women and families who shared their stories felt the need for physical and emotional support after their baby was admitted to neonatal care but such was not always available. This unfortunately included bereavement support in instances where their baby sadly had died.

> "It would have been easier if I had just had more support afterwards."

5.2.5 Impact of Women's Experience, Raising Concerns and Influencing Change

One of the most powerful and significant themes emerging from the stories shared was the enduring impact of these experiences on their physical and emotional health.

> "I realise it was such a long time ago now, and over the years the memories leave wounds that never heal."

There was a sense that, for some of these women, raising concerns would not have made a difference in terms of their understanding of what had happened. More importantly, they felt disempowered from raising concerns whilst care was being provided.

> "I thought I was the problem, so I didn't think to complain."

Women and families who did raise a complaint shared their experiences of a lack of openness and honesty, insensitive locations for meetings, poor investigations and a lack of family involvement in the process.

"The meetings were held on the maternity ward of PCH. We could hear the heartbeats of unborn babies on monitors. I regret not mentioning at the time it was wrong!"

The stories shared as part of the review process are incredibly powerful and deserve to be heard. More than anything, the women and families want to influence change and ensure that the elements of care and compassion which they felt were missing from their experiences are now embedded in practice.

"The mother and baby should be at the centre. Looking back, I feel I was treated like a piece of meat. I should have been treated with respect, I should have known what was happening and what the implications were of what was happening to my baby."

The improvement work undertaken by the Health Board to date, as well as that which remains ongoing, goes a long way towards achieving that change and significant progress has been made since 2019 in improving the quality of women's and families' experiences of maternity services and addressing some of the underlying issues which historically contributed to poor outcomes.

That said, there remains more to be done, particularly in terms of staff culture and behaviours and there is much that the Health Board can learn from the stories which have been shared by women and families as part of the review process and continue to be shared as an integral part of ongoing engagement.

"The policies I assume were in place, but that midwife didn't follow them. Perhaps student midwives should be given more training regarding how to engage with mothers who are going through difficult pregnancies and neonatal deaths. This was so long ago I would like to think the training has improved since then."

6 What Does This Mean in the Current Context?

The findings which have emerged from the neonatal category of the Panel's Clinical Review Programme are similar in many respects to the findings which emerged from the maternal and stillbirth categories. However, they are slightly more complex given that this category necessarily involved separate but related reviews of both the maternity and the neonatal aspects of the care provided. The Panel's recently completed deep-dive review of the neonatal service at Prince Charles Hospital has also provided additional insights which have been factored into the analysis.

As set out in detail in Sections 4 and 5, a range of themes and issues were identified through the clinical reviews in relation to the maternity and neonatal care provided, some of which may have had an impact on the overall outcome.

There is also broad consistency between these clinical issues and those areas highlighted by the women and families who chose to share their stories as part of the clinical review process.

6.1 Putting the Findings into Context

Although these findings must never be downplayed or brushed aside, there are a number of important contextual factors that should be borne in mind when considering what they mean now and what the Health Board should do as a result.

The Panel made similar points in the first and second thematic reports but this context is important and so is repeated again:-

- There are inherent risks in the childbirth process - although the clinical review teams concluded that a different outcome may have been achieved in one third of the 70 maternity reviews conducted, it was considered unlikely that a different outcome could have been achieved for the remaining two thirds. Similarly, although two-thirds of the neonatal reviews revealed major or minor modifiable factors whereby different neonatal care was likely to or may have altered the outcome for the baby, the remaining third did not indicate that the care and treatment provided was a contributory factor. That in no way seeks to minimise the gravity of the findings or dismiss the impact for the women and families involved. It simply highlights that there are inherent risks associated with the childbirth process and that things can and do go wrong despite the best efforts of clinicians.

- The findings are precisely what the Royal Colleges predicted and what the neonatal 'deep-dive' review found - most of the reviews in this category were provided between January 2016 and September 2018, a period in which it is already evident that there were significant deficiencies in the maternity and neonatal services which the Health Board was providing. As such, what the clinical review process has subsequently identified is precisely what the Royal Colleges suggested would be found when it recommended that further clinical review work should be undertaken. It has also provided further evidence, if any was needed, that the concerns which were highlighted in the Royal Colleges' report, were entirely justified. Similarly, the key themes and issues which have emerged from the neonatal category reviews are broadly consistent with the learning which emerged from the Panel's neonatal deep-dive review which examined the neonatal care which was provided in 2020 and should be viewed in that context.

- There are fresh insights but nothing fundamentally new has emerged - although the clinical review process has identified a significant amount of learning and in some instances, has provided new insights or added weight to the Health Board's understanding of the improvements they must make, there is nothing which has emerged from the third cohort of clinical reviews which was not broadly covered by the 70 recommendations made by the Royal Colleges or the 42 recommendations contained within the Panel's neonatal deep-dive report.

- Substantial improvements have already been made in the maternity service and work has commenced to deliver improvements in the neonatal service - it is important to recognise that over the past three years, many of the maternity related deficiencies which were identified by the Royal Colleges have already been addressed, in whole or in part, through the Health Board's ongoing Maternity and Neonatal Improvement Programme. Some important elements remain to be delivered and the Clinical Review Programme has provided further insights which the Health Board will find valuable in shaping the next steps in its improvement journey. The neonatal service is less advanced in its improvement journey but some early progress has been made and plans are currently being developed to address all of the recommendations which emerged from the neonatal deep-dive review.

The latter two points are particularly significant in terms of understanding the implications of the findings of the neonatal category of the Clinical Review Programme and are explored in further detail in Sections 6.2 and 6.3 below.

6.2 Correlation of Findings against the Royal Colleges' and Neonatal Deep-Dive Recommendations

The Health Board is evaluating all of the detailed observations made by the clinical review teams in order to determine what has already been done, what is currently being done and what remains to be done to address the issues which have been identified. If there is any significant new learning which has not previously been identified, there is an agreed mechanism for including that within the longer-term Maternity and Neonatal Improvement Plan which the Panel is overseeing.

6.2.1 Maternity Care

In order to provide an indication of the significance of the findings from this phase of the clinical review process for the purposes of this report, the Panel has conducted its own high-level analysis in order to establish the degree of correlation between the key themes and issues which have emerged from the maternity element of the neonatal reviews and the 70 recommendations made by the Royal Colleges in April 2019. The results of this analysis are set out in the table in Appendix B.

The four key themes which emerged from the clinical review process and women's stories (inadequate or inappropriate treatment, failure to recognise and respond to high-risk situations in a timely manner, failings in clinical leadership and oversight and education, knowledge and training) correlate significantly with the Royal Colleges' recommendations. As set out in the Panel's April 2022 Progress Report, all of these recommendations have either been delivered in full or have elements which are being addressed through the longer term improvement plans.

On that basis, the Panel is reasonably assured that there is nothing significant which has emerged from the maternity aspects of this third element of the Clinical Review Programme which was not previously identified by the Royal Colleges and is therefore not already reflected within the Health Board's Maternity and Neonatal Improvement Plan.

The analysis of the review findings has identified a number of new insights and has added further weight to the importance of the longer-term improvement work which the Health Board is currently undertaking.

6.2.2 Neonatal Care

As previously identified, the Health Board's neonatal service improvement journey is less advanced than that of the maternity service. A range of neonatal-specific issues identified in the Royal Colleges' review included aspects of clinical care (leadership and expertise) and clinical governance (serious incident investigations, audit and team-working). However, these were less prominent than the maternity related themes which for understandable reasons, took precedence in the Health Board's early improvement activities.

For reasons which have been explained in some detail in Section 4, a deep-dive review of the neonatal service at Prince Charles Hospital was commissioned, the findings of which were reported in February 2022.

The purpose of the deep-dive review was to consider current neonatal service provision, particularly in view of the Health Board's ongoing Maternity and Neonatal Improvement Programme. The report made 42 recommendations for improvement for the Health Board and others to consider. A number of clinical case assessments were conducted as part of its methodology based on the same inclusion criteria used for the neonatal category reviews.

The clinical case assessments within the deep-dive review identified a range of themes similar to those identified as part of this category of clinical reviews, namely:-

- documentation;
- prescribing;
- clinical leadership and decision-making;
- communication with families;
- risk management.

The fact that the same deficiencies which were present during the service in 2016-2018 were still largely present in 2020, is indicative of a lack of appropriately directed investigation into clinical incidents within the Health Board with a consequent failure to learn from incidents and change clinical care.

However, the recommendations made by the Panel through the deep-dive review have enhanced the improvement focus of the neonatal team and steps are consequently being taken to improve the ways in which the maternity and neonatal teams work together in current practice.

On that basis, the Panel is reasonably assured that there is nothing significantly new or different which has emerged from the neonatal aspects of this third element of the Clinical Review Programme which was not previously identified either by the Royal Colleges or through the Panel's deep-dive review into the neonatal service at Prince Charles Hospital and is therefore not already reflected within the Health Board's Maternity and Neonatal Improvement Plan.

There remains much to do in order to embed change and demonstrate a sustainable improvement in the care provided within the neonatal clinical setting. Key changes are already in place around consultant cover, tertiary unit support and clear escalation for advice, standards and improved nurse leadership and as such, the Health Board now has a valuable opportunity to create meaningful improvements to the neonatal service going forward.

That said, the analysis of the clinical review findings has identified a number of new insights and has added further weight to the importance of the longer-term neonatal improvement work which the Health Board is currently undertaking.

6.3 What Does This Mean for The Health Board's Improvement Plans?

In summary, whilst the emerging findings from the neonatal category of the Clinical Review Programme do provide cause for concern, those concerns need to be kept very firmly in context.

The clinical review teams have essentially identified what the Royal Colleges predicted they would find when they recommended that a further programme of clinical review be undertaken. In other words, the issues which have emerged from the Clinical Review Programme are broadly the same issues which were previously reported and debated in a very public way when the Royal Colleges' report was published in 2019. They are also broadly the same issues which were identified by through Panel's neonatal deep-dive review conducted in 2021.

These issues are currently being addressed in a structured and publicly accountable way through the special measures arrangements which have been put in place by the former Minister for Health and Social Services as well as the Health Board's ongoing Maternity and Neonatal Improvement Programme.

It is evident that the Health Board has made significant progress in improving its maternity services over the past two and a half years. As such, many of the issues which have been identified retrospectively through the clinical review process have already been addressed, either wholly or in part and there are realistic plans in place to address any outstanding issues going forward. Improvements in the neonatal service are less well advanced but early progress is being made and credible plans are now being developed for longer-term improvement.

The significance of this is that from a service improvement point of view, the findings of the neonatal element of the Clinical Review Programme are largely confirmatory in nature and do not necessitate any significant adjustments or substantial additions to the improvement plans which are currently in place.

They do however identify some new dimensions which require further consideration and in some cases, action by the Health Board and serve to emphasise the need for continued focus and attention to ensure that the remainder of the Royal College and neonatal deep-dive recommendations, particularly the transformational elements around leadership and staff culture and behaviours, are fully delivered.

This involves the development of a number of work packages which are underpinning the design and development of a Five-Year Strategic Plan for the maternity and neonatal service which will be published towards the end of 2022.

7 Conclusions and Recommendations

This is the third in a series of thematic reports prepared by the Independent Maternity Services Oversight Panel.

Its purpose is to share the themes and issues which have emerged from the third and final element of the ongoing programme of independent clinical reviews of the maternity and neonatal care provided by the former Cwm Taf Morgannwg University Health Board.

The detailed findings and conclusions which can be drawn from the review are set out in detail in Section 4 and 5 of the report.

The findings from the maternity reviews conducted as part of this category of the Clinical Review Programme both reflect and reinforce the identified learning from the previous two categories (maternal and stillbirth), as well as the conclusions drawn from the Royal Colleges' review.

Likewise, there is broad alignment between the issues and themes identified through the neonatal reviews conducted in this category and the findings from the Panel's deep-dive review of the neonatal services provided at Prince Charles Hospital in 2020, albeit that further insights have been gained which will add to the Health Board's understanding of the improvements which need to be made.

In the Panel's view, the findings do not necessitate any significant adjustments in the Health Board's improvement plans nor in the oversight arrangements which sit alongside them.

However, the findings do provide a number of additional insights which require continued or specific focus by the Health Board and these are set out below.

7.1 Recommended Areas for Specific or Continued Focus

Taking forward and embedding in practice the separate opportunities for learning identified through the maternity and neonatal reviews will need to remain a continued focus for the Health Board.

The value of this clinical review category is that it has provided an opportunity to review the entire pathway of care provided to mothers and babies, exploring how maternity and neonatal services interface with one another and importantly, the ways in which the quality of maternity care can impact on a baby's condition at birth or the care which subsequently needs to be provided.

The clinical reviews have identified a number of ways in which more integrated working between maternity and neonatal services is required to ensure that safe and effective care is provided. This relates to areas such as closer team working, enhanced communication, as well as jointly reviewing the care which has been provided to identify and systematically take forward opportunities for learning.

Regular review of all aspects of healthcare is key to improving the service provided: it is mandatory when outcomes have not been as expected. The clinical reviews have demonstrated a failure to recognise where service improvement is required and as a consequence to institute appropriate changes in practice. This must be a specific focus for the Health Board moving forwards.

7.1.1 Areas for Continued Focus – Previous Thematic Review Findings

As highlighted above, the findings from the review of maternity care within this category are broadly consistent with the findings presented in the Thematic Maternal Category Report (January 2021) and Thematic Stillbirth Category Report (October 2021). These findings are also broadly consistent with those of other reviews conducted across the UK in recent years.

Although the Panel does not believe that it is necessary to make further specific recommendations from a maternity perspective, the analysis of the findings from this category has identified the need for continued focus in a number of key areas, most notably:-

i. reviewing and where necessary, strengthening the approach to smoking cessation in pregnancy based on successful programmes elsewhere in Wales and other parts of the UK;

ii. review its use of the Perinatal Mortality Review Tool (PMRT) to ensure that there are systems and processes in place to ensure that it is used for all incidences of stillbirth and neonatal deaths (these reviews must be multidisciplinary including external peer input. Parental input should be encouraged);
iii. ensuring that staff involved in the antenatal and intrapartum care of mothers adhere to national guidance on fetal growth in the antenatal period in order to detect evidence of fetal growth restriction and where there is evidence of accelerated fetal growth;
iv. ensuring that staff involved in the intrapartum care of mothers adhere to national guidance regarding maternal and fetal monitoring in labour.
v. ensuring that staff involved in the antenatal and intrapartum care of mothers fully comply with annual mandatory training programmes, for example PROMPT, GAP/GROW and all-Wales intrapartum fetal surveillance standards.

These issues are already reflected in the Health Board's improvement plans which the Panel continues to oversee in order to ensure that all of the necessary actions are implemented and embedded in day-to-day practice.

Further information about the Health Board's progress in addressing these are other issues can be found in the April 2022 Progress Report which has been published alongside this report.

7.1.2 Areas for Continued Focus – Neonatal Deep Dive Findings

The recommendations for improvements within the Health Board to emerge from the Panel's deep-dive review and more specifically, the case assessments, were extensive and covered all areas of the neonatal service currently being provided at Prince Charles Hospital.

Given the similarities between the findings from the deep-dive review and the themes and issues emerging from the neonatal element of the 70 reviews conducted within this category, there is unsurprisingly a degree of correlation in terms of the areas towards which the Health Board needs to specifically focus its attention.

Work is already ongoing via the Health Board's improvement programme to address the identified deficiencies but the Panel felt it important to re-emphasise these areas for focus. As these are not new recommendations, in order to avoid duplications, the 15 overlapping areas are presented in a schedule which is attached at Appendix C. The fact that these issues are presented as an appendix should not be seen as diminishing their significance.

7.1.3 Areas for Specific Focus – Joint Working and Learning from Reviews

The Panel has identified additional areas requiring specific focus to address issues which were not covered in full by the recommendations which emerged from previous two thematic reports or the deep-dive review.

The Panel believes it important that these are progressed by the Health Board in addition to those areas where continued focus is required within its existing improvement plans. These are as detailed overleaf.

i. review of neonatal deaths occurring within the Health Board or following the death of a baby cared for within the Health Board but dying elsewhere must follow PMRT guidance and have the external presence of a neonatologist and where possible a neonatal nurse, as well as an external obstetrician and a midwife;
ii. all internal reviews must be multidisciplinary. Reviews of serious incidents should consider external neonatal expertise to ensure that all learning is identified and appropriate actions are set;
iii. learning from reviews must be disseminated through the entire team and link to education, quality improvement and training programmes available;
iv. parents must be involved in serious incident reviews and mortality reviews with a contact person identified to keep them involved in the process and a clear feedback loop to ensure they understand the learning which has been identified. Any debrief for families following a neonatal admission should be jointly obstetric and neonatal.

In addition, the Panel has identified the following areas for consideration by other stakeholder bodies and organisations:-

i. the Wales Maternity and Neonatal Network should support oversight of serious incident and mortality reviews as well as monitoring pathways to ensure that care is provided in the most appropriate setting;
ii. reflective practice should be strongly encouraged both within the clinical notes and the review process. The General Medical Council (GMC) may wish to consider supporting all medical staff to feel confident that reflection as part of the clinical record in challenging cases is essential and useful, rather than something which may be used punitively.

7.2 What Happens Next

From the Panel's perspective, work on the 2016-2018 element of the Clinical Review Programme is now complete although for the Health Board, the process of assessing and delivering against the findings continues.

Both the Panel and the Health Board will continue, as they have previously done, to focus on the needs of women and families and staff arising from the publication of the review findings.

Further detail about the next steps of the Clinical Review Programme can be found in the April 2022 Progress Report which has been published alongside this report and can be accessed here.

8 Appendix A – Technical Analysis

8.1 Maternity Care

Figure 1: Modifiable Factors Present in Maternity Reviews

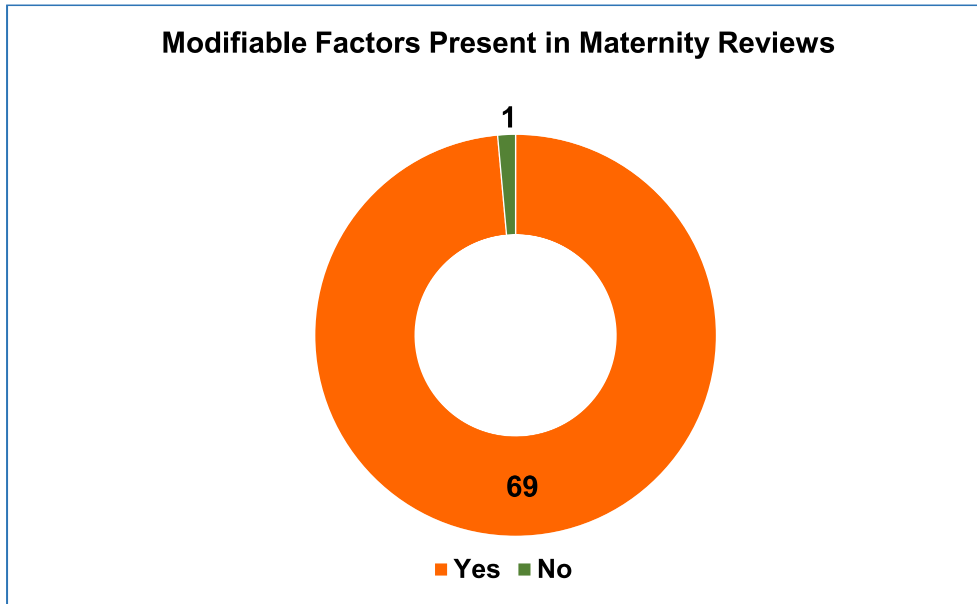
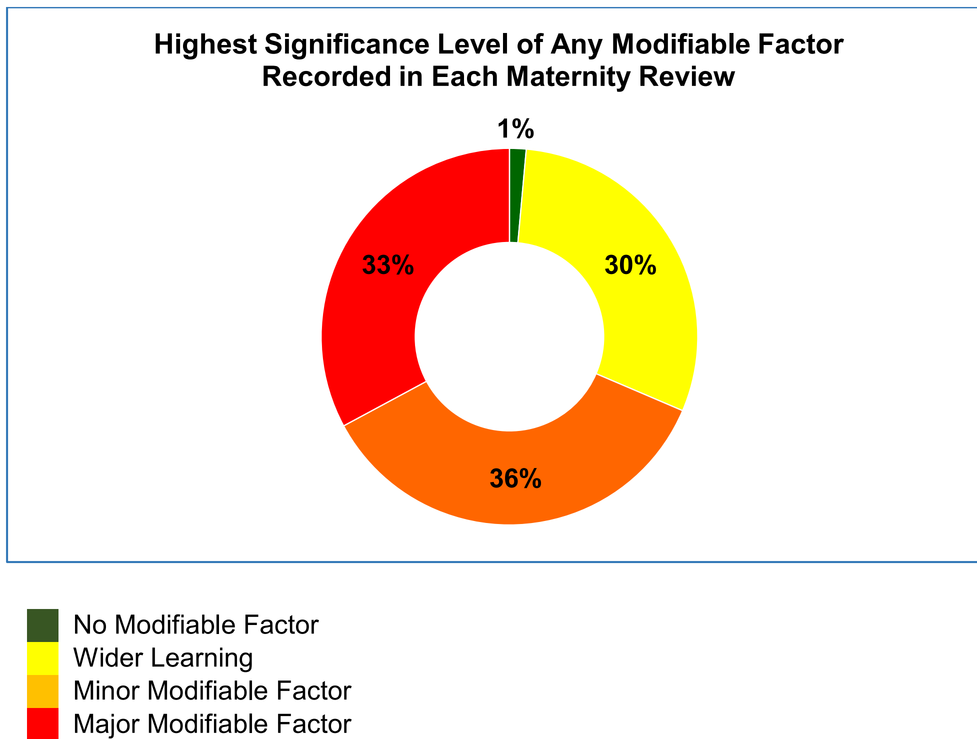
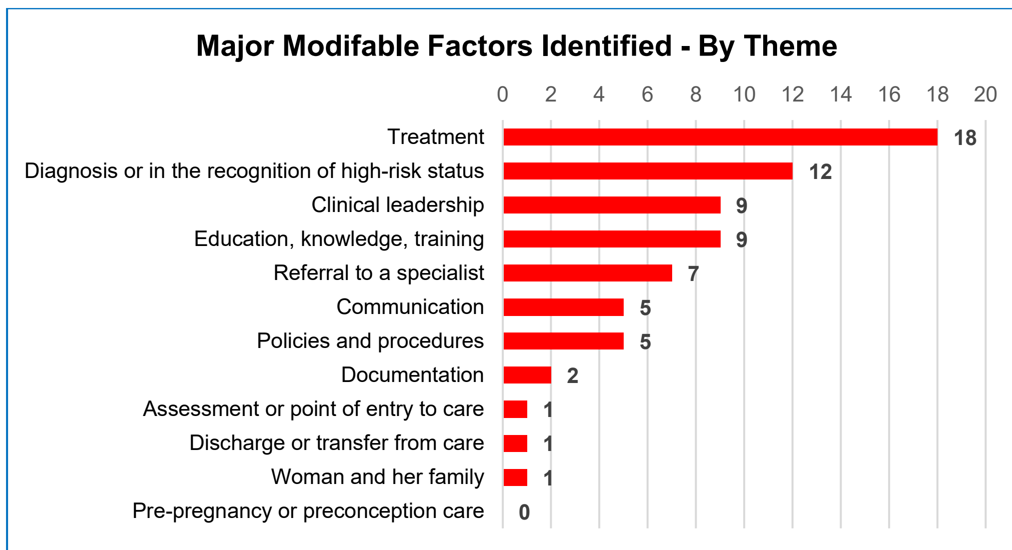


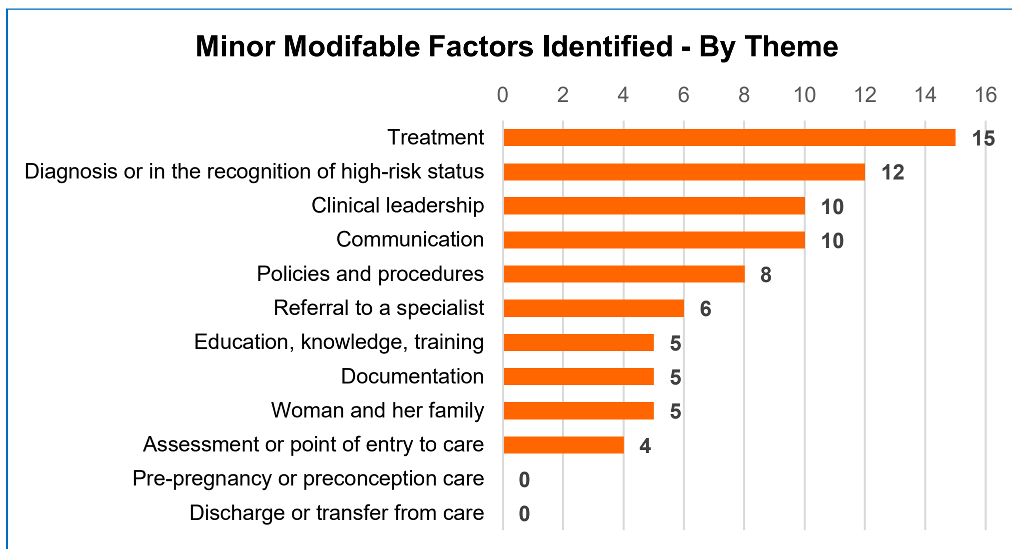
Figure 2: Highest Level of Significance of Modifiable Factor Identified



No Modifiable Factor
Wider Learning
Minor Modifiable Factor
Major Modifiable Factor

Figure 3: Frequency of Modifiable Factors by Level of Significance





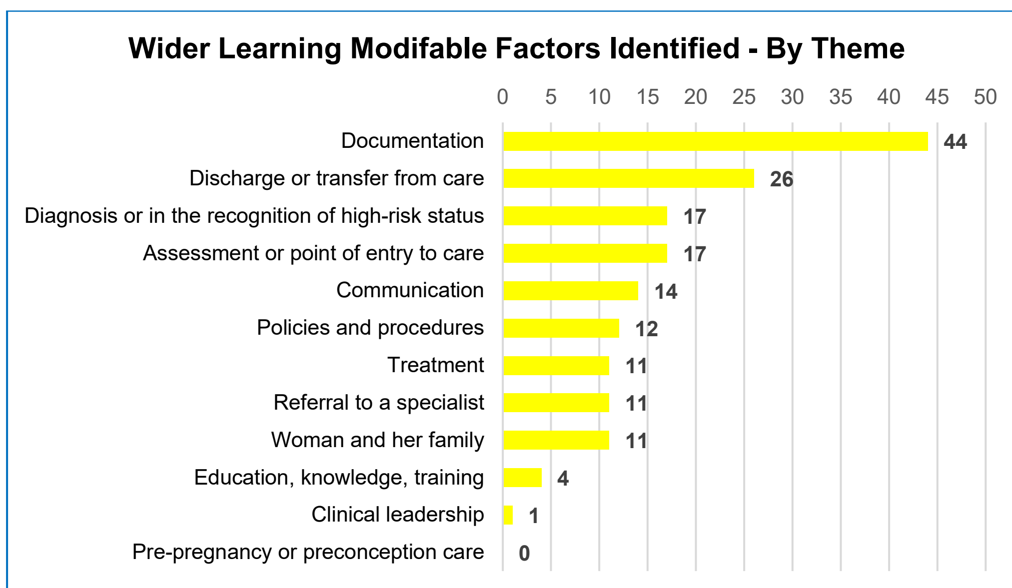
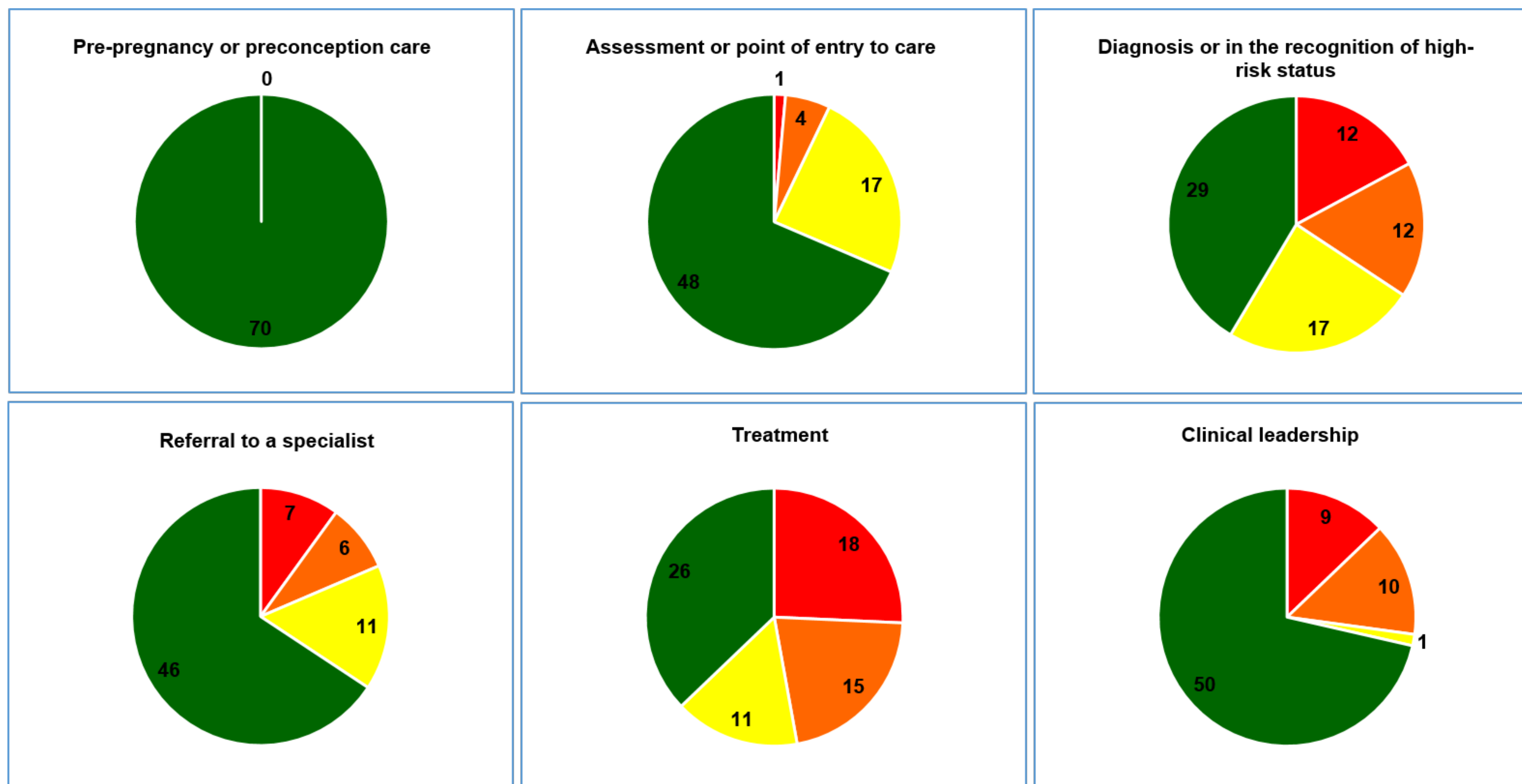


Table 1: Breakdown of Modifiable Factors According to Assessment Area

Modifiable Factors Identified % of Maternity Reviews with Modifiable Factors	**Major**	**Minor**	**Wider Learning**	**None**	**Total Maternity Reviews**
Pre-pregnancy or preconception care	0%	0%	0%	100%	70
Assessment or point of entry to care	1%	6%	24%	69%	70
Diagnosis or in the recognition of high-risk status	17%	17%	24%	41%	70
Referral to a specialist	10%	9%	16%	66%	70
Treatment	26%	21%	16%	37%	70
Clinical leadership	13%	14%	1%	71%	70
Education, knowledge, training	13%	7%	6%	74%	70
Documentation	3%	6%	63%	29%	70
Discharge or transfer from care	1%	0%	37%	61%	70
Communication	7%	14%	20%	59%	70
Policies and procedures	7%	11%	17%	64%	70
Woman and her family	1%	7%	16%	76%	70

Figure 4: Summary Charts for Modifiable Factors by Significance Level



Education, knowledge, training

9
5
4
52

Documentation

2
4
20
44

Discharge or transfer from care

1
0
26
43

Communication

5
10
14
41

Policies and procedures

5
8
12
45

Woman and her family

1
5
11
53

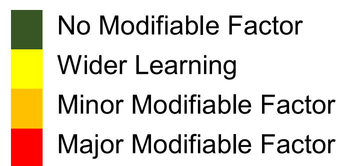
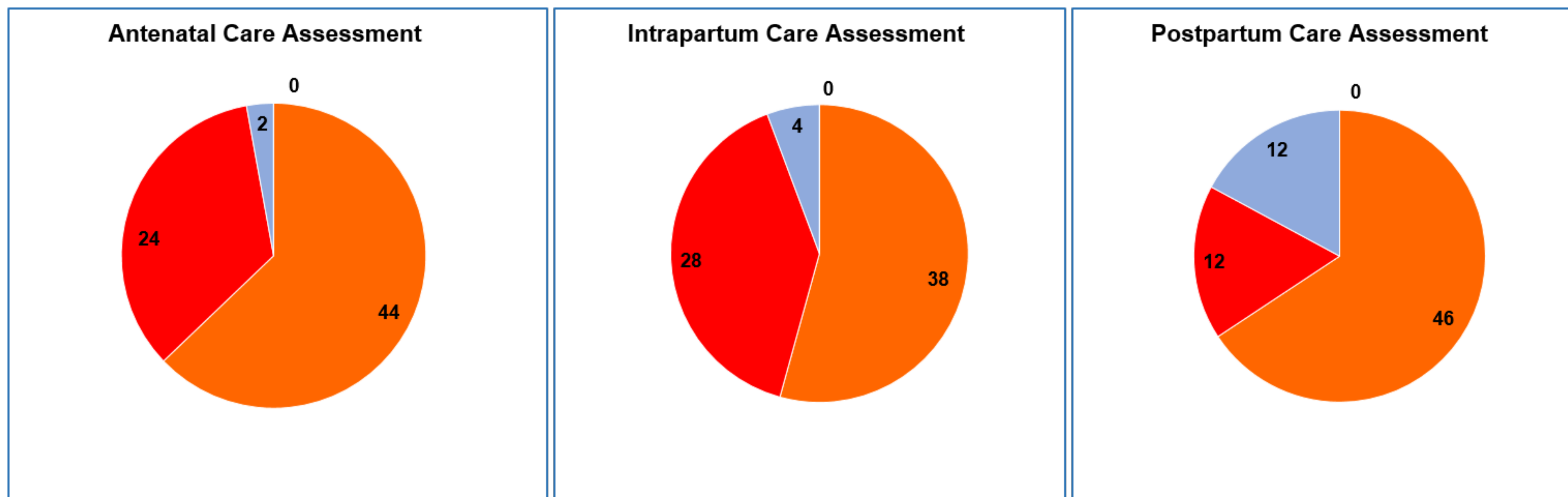


Figure 5: Overall Assessment of Maternity Care



8.2 Neonatal Care

Figure 6: Modifiable Factors Present in Neonatal Reviews

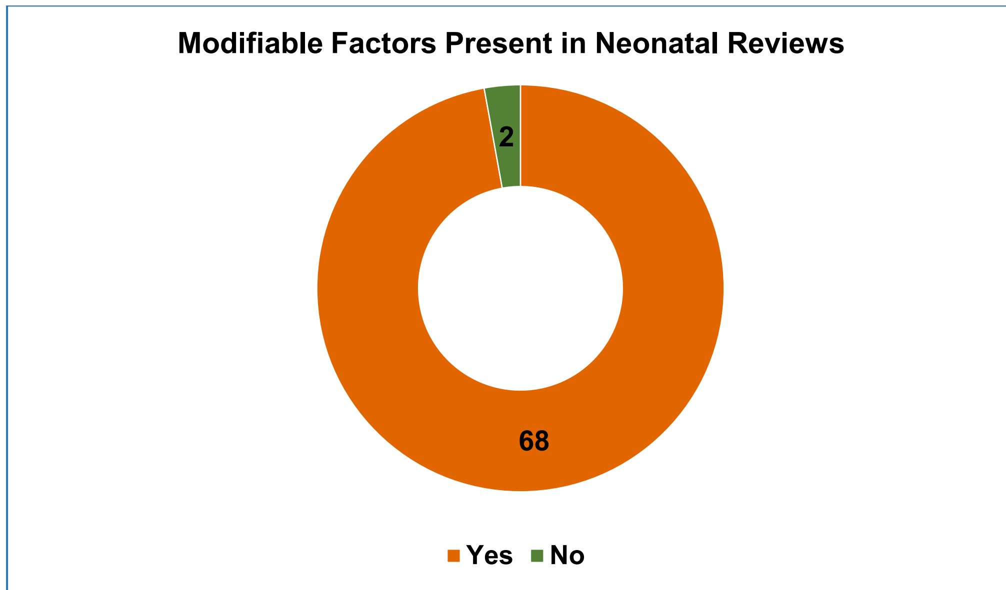


Figure 7: Highest Level of Significance of Modifiable Factor Identified

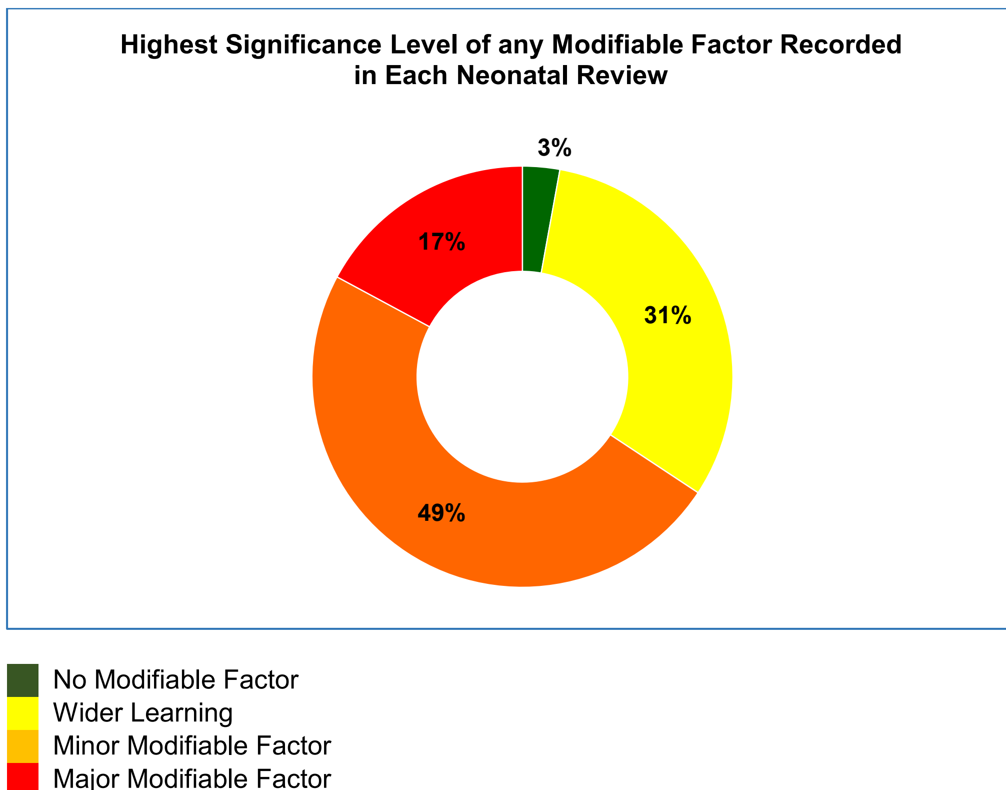
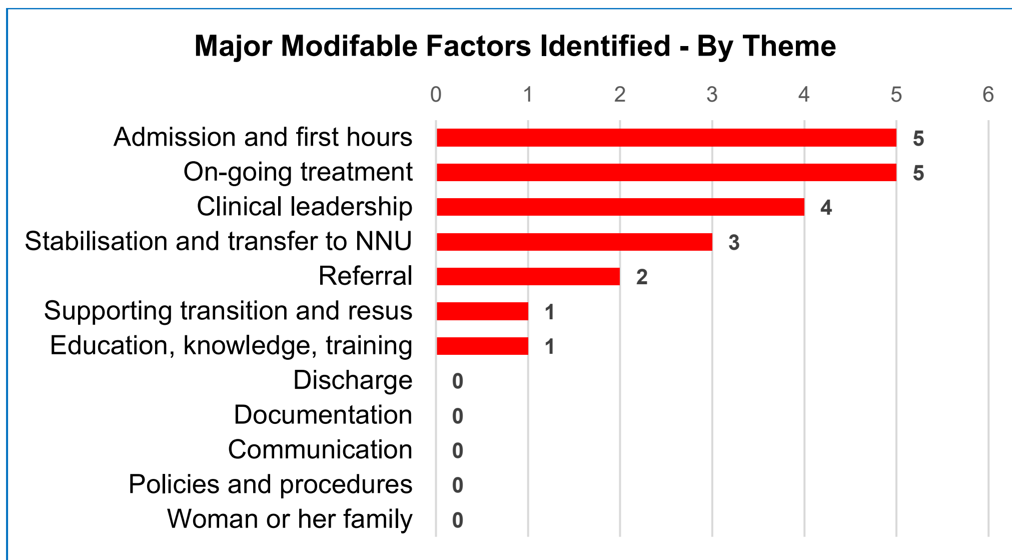
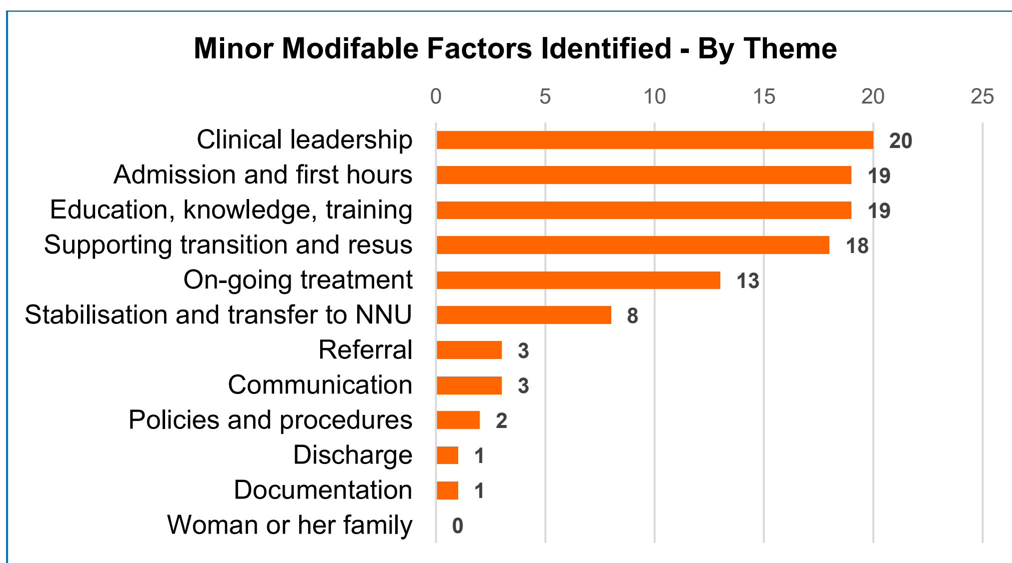


Figure 8: Frequency of Modifiable Factors by Level of Significance





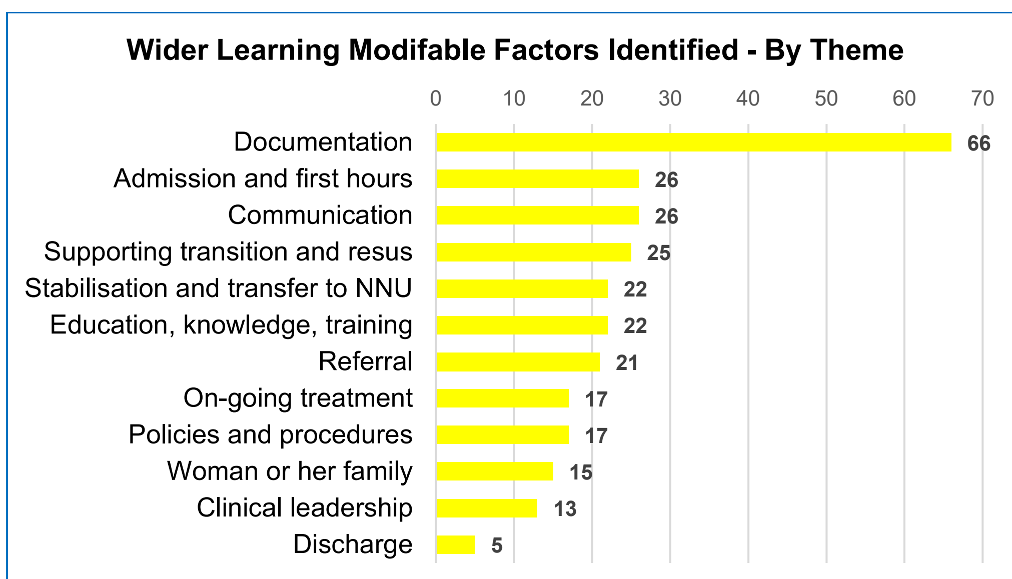
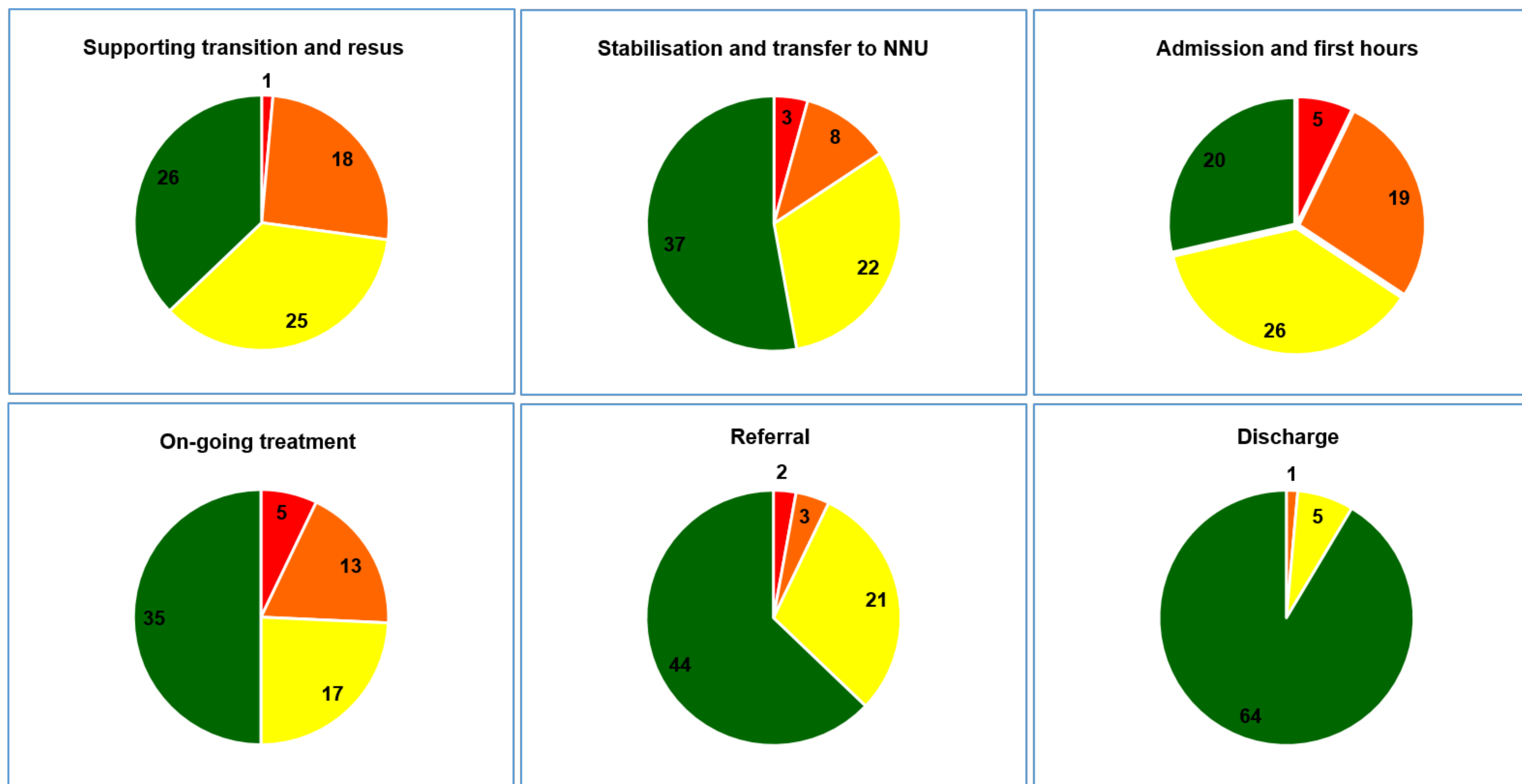


Table 2: Breakdown of Modifiable Factors According to Assessment Area

Modifiable Factors Identified % of Neonatal Reviews with Modifiable Factors	**Major**	**Minor**	**Wider Learning**	**None**	**Total Neonatal Reviews**
Supporting Transition and Resus	1%	26%	36%	37%	70
Stabilisation and Transfer to NNU	4%	11%	31%	53%	70
Admission and First Hours	7%	27%	37%	29%	70
On-Going Treatment	7%	19%	24%	50%	70
Referral	3%	4%	30%	63%	70
Discharge	0%	1%	7%	91%	70
Clinical Leadership	6%	29%	19%	47%	70
Education, Knowledge, Training	1%	27%	31%	40%	70
Documentation	0%	1%	94%	4%	70
Communication	0%	4%	37%	59%	70
Policies and procedures	0%	3%	24%	73%	70
Woman or her family	0%	0%	21%	79%	70

Figure 9: Summary Charts for Modifiable Factors by Significance Level



Clinical leadership

4
20
33
13

Education, knowledge, training

1
19
28
22

Documentation

1
3
66

Communication

0
3
26
41

Policies and procedures

2
17
51

Woman or her family

15
55

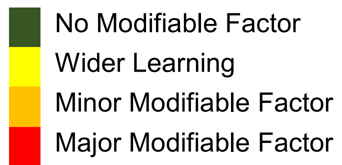
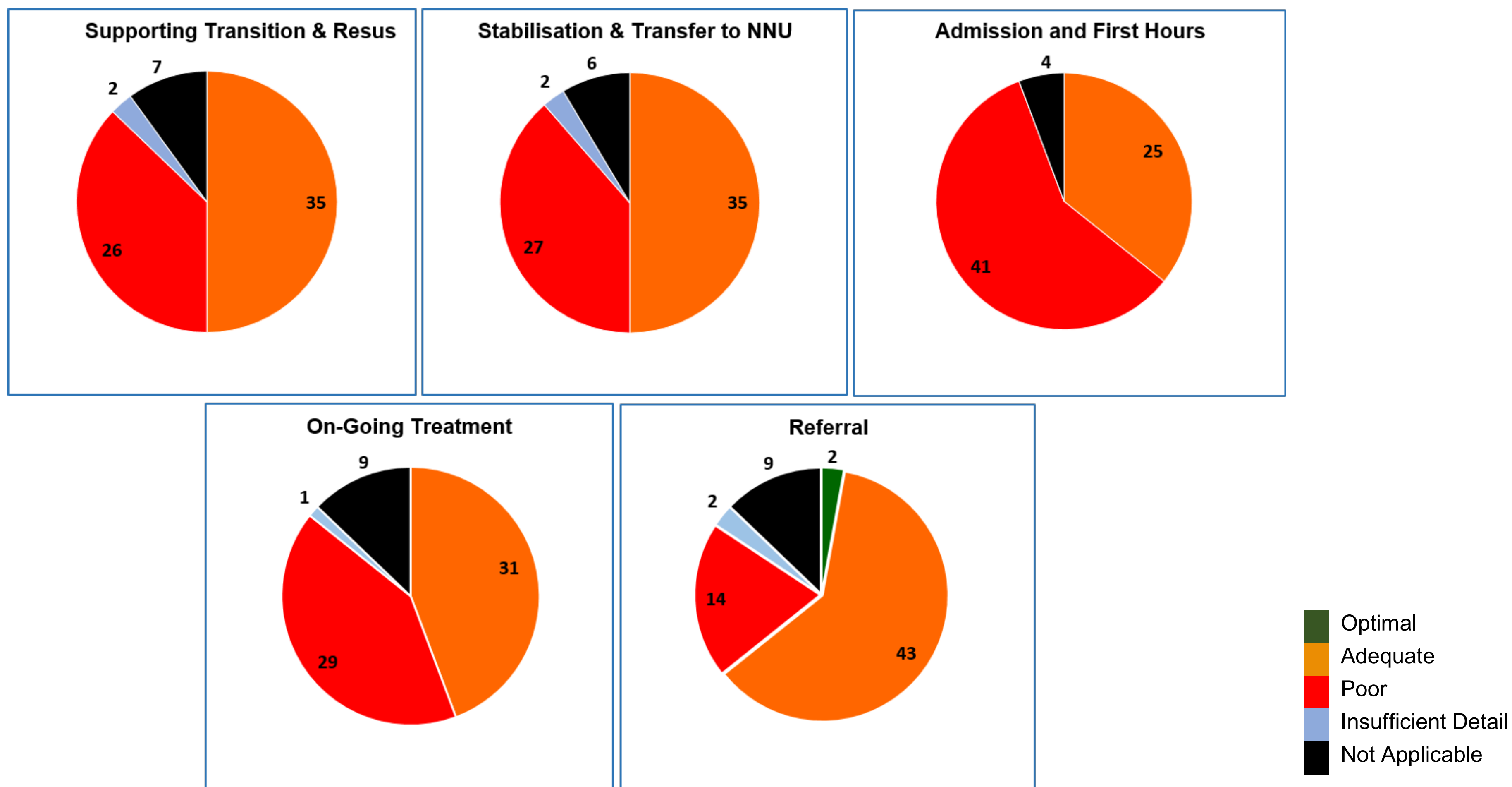


Figure 10: Overall Assessment of Neonatal Care



9 Appendix B – Schedule of Royal College Recommendations

Theme	Identified by RCOG/RCM	Closed	Closed with outstanding elements*
Diagnosis or recognition of high-risk status	Yes	7.2, 7.3, 7.4, 7.8, 7.9, 7.15, 7.16, 7.17, 7.19, 7.20, 7.21, 7.22, 7.23, 7.32, 7.36, 7.37, 7.40	7.35
Treatment	Yes	7.3, 7.4, 7.5, 7.8. 7.9, 7.16, 7.17, 7.19, 7.20, 7.22, 7.23, 7.32, 7.36, 7.37, 7.38, 7.40	7.35
Clinical Leadership	Yes	7.1, 7.2, 7.3, 7.8, 7.9, 7.10, 7.15, 7.17, 7.19, 7.20, 7.22, 7.23, 7.32, 7.36, 7.37, 7.40	7.31
Education, knowledge, training	Yes	7.4, 7.8, 7.36, 7.37, 7.38	7.35

The Panel's April 2022 Progress Report provides further information on the agreed transition of the Royal Colleges' recommendations into the Health Board's longer term improvement programme plans.

10 Appendix C - Schedule of Neonatal Deep-Dive Recommendations

Neonatal deep-dive recommendations which require continued focus as a result of learning which has emerged from the neonatal review category:

Area for continued focus	Corresponding action
Communication with families on the Neonatal Unit must be timely, open and honest and comprehensively documented.	Recommendation 7.1
Support is required from tertiary neonatal services to support immediate clinical decision making in cases where infants require short term stabilisation and intensive care. There should be clear escalation processes in place and a trigger list to support early recognition of the need to refer.	Recommendation 7.2
Prescribing standards must be improved with a continued focus at identifying, resolving and minimising prescription errors. There needs to be clear accountability for all staff involved in prescribing and administering medicines and should be supported through the additional pharmacy support on a daily basis.	Recommendation 7.3
Management of therapeutic hypothermia should be supported with robust guidance in line with national best practice frameworks.	Recommendation 7.4
Standards of formal radiology reporting pertaining to the neonatal services should be audited.	Recommendation 7.5
Documentation standards must be improved in line with GMC/NMC requirements and there must be senior medical oversight of discharge summaries.	Recommendation 7.6
The incident reporting trigger list should be followed to ensure reporting and subsequent multidisciplinary review of all significant events, for example babies requiring therapeutic hypothermia.	Recommendation 7.7
There are several areas of focus for local quality improvement projects including reducing unplanned extubation and optimising perinatal care. National toolkits should be used locally, and multidisciplinary involvement is required for success in these areas.	Recommendation 7.8

Area for continued focus	Corresponding action
External support should be used to ensure standards of robust review that support local learning and improvement.	Recommendation 7.9
The Health Board must ensure consultant cover for the neonatal service is safe and effective.	Escalation 3
The Health Board must continue to show an improvement in the working relationship with maternity services in numerous areas.	Escalation 2
The Health Board must undertake an immediate documentation review and introduce supportive documents to assist in improving documentation standards.	Escalation 10
The Health Board should consider actions to support working with families to understand the impact of the listening to families and improving family involvement in the service.	Escalation 11
The Health Board must introduce a clear audit structure to monitor improvement and evidence the effectiveness of the service.	Escalation 14
The Health Board must ensure clinical incident reviews, SI reviews and PMRT/Mortality reviews are carried out as an MDT with external support from colleagues within the local NICU to provide clinical expertise and questioning.	Escalation 7