National Women & Infants Health Programme

National Clinical Practice Guideline

Care and Management of Unstable Lie in Pregnancy

INSTITUTE OF OBSTETRICIANS & GYNAECOLOGISTS

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

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National Clinical Guideline
Care and Management of Unstable Lie in Pregnancy

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Care and Management of Unstable Lie in Pregnancy
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Short summary:
Evidence based recommendations for the care and management of unstable lie after 37 weeks' gestation. Promoting a safe standardised approach nationally across all maternity hospitals/units.
Description:
This national guideline provides evidence-based recommendations for the definition, diagnosis, risk stratification, and management of unstable lie after 37+0 weeks' gestation, including criteria for inpatient care, timing and mode of birth, and pathways for induction or caesarean birth. It emphasises multidisciplinary involvement, clear communication, informed consent, and explicit documentation of women's preferences, supporting standardised, trauma-informed maternity care.

[3] Records details of the document review or update, even if no changes are made.
[4] Records the document information required for publication on the HSE National Central Repository.

Table of Contents

Key Recommendations

1. We recommend defining unstable lie as a condition where the longitudinal axis of the fetus is changing repeatedly after 37+0 weeks' gestation. *Best practice.*
2. We recommend identifying risk factors for unstable lie in the antenatal period, including maternal and fetal risk factors, so that the necessary follow up is considered in the antenatal care pathway. *Best practice.*
3. We suggest performing abdominal palpation to make a clinical diagnosis of unstable lie after 37+0 weeks' gestation. *Grade 2C.*
4. We recommend using ultrasound to confirm suspected unstable lie and to investigate its cause. *Grade 1C.*
5. We recommend considering in-patient management of women with unstable lie between 37+0 – 38+0 weeks' gestation. This decision should be made on an individual basis. Earlier admission may be required in pregnancies with a higher risk of preterm labour. *Grade 1C.*
6. Women with suspected/diagnosed unstable lie who decline admission should be advised of the risk of complications associated with unstable lie, largely cord prolapse. *Grade 1B.*
7. We recommend advising women with unstable lie after 38+0 weeks' gestation who decline admission to contact the hospital once symptoms suggestive of labour commence and to immediately present to hospital if the membranes rupture. *Best practice.*
8. We recommend that women who are admitted with unstable lie undergo abdominal palpation by the healthcare team twice daily, morning and evening, for fetal lie and to include an auscultation of the fetal heart. *Best practice.*
9. We suggest should unstable lie correct to cephalic presentation for a minimum of 24 hours during the inpatient stay, women should either be given a choice of induction of labour, considering the gestation and a full assessment for suitability, or discharge home to await spontaneous onset of labour. *Best practice.*
10. We recommend offering induction of labour to women who are 41+0 weeks' gestation once unstable lie corrects. *Best practice.*
11. For women planning vaginal birth, and in otherwise uncomplicated pregnancy, we suggest it is reasonable to wait up to 41+0 weeks' gestation for correction of fetal lie prior to offering elective caesarean birth. *Best practice.*
12. We recommend a discussion with the woman on her care and birth preferences at the time of admission with regards to her expectations and mode of delivery. *Best practice*.
13. We recommend the need for clear communication, through interpretation if needed, to ensure informed decision making and consent. *Best practice.*
14. Clear documentation of the woman's preferences should be recorded in the medical notes. *Best practice.*

Chapter 1: **Initiation**

The National Clinical Effectiveness Committee (NCEC) and Health Information and Quality Authority (HIQA) define clinical guidelines as systematically developed statements, based on a thorough evaluation of the evidence, to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances, across the entire clinical spectrum.[1]

1.1 Purpose

The purpose of this Guideline is to develop and provide a comprehensive evidence-based guidance to provide quality of care and manage unstable lie in pregnancy.

1.2 Scope

Target Users

The Guideline is intended for all healthcare users (doctors, advanced midwifery practitioners[2], midwives, and general practitioners), particularly those involved in the provision of antenatal care.

Target Population

Women with unstable lie in pregnancy after 37+0 weeks' gestation.

1.3 Objective

To provide evidence based recommendations for the management of unstable lie as well as promoting a safe standardised approach nationally across all maternity hospitals/units.

1.4 Guideline development process

The Guideline Developers agreed to undertake this work under the direction of the Guideline Programme Team (GPT). An Expert Advisory Group (EAG) was commissioned by the GPT. Their role was to critically review the Guideline prior to submission to the National Women and Infants Health Programme (NWIHP) for final approval. See Appendix 1 for EAG membership and Appendix 2 for Guideline Programme Process.

1 National Clinical Effectiveness Committee (NCEC) and Health Information and Quality Authority (HIQA) (2015) National quality assurance criteria for clinical guidelines. Version 2. Dublin: NCEC and HIQA. https://assets.gov.ie/11533/2d070cb758a44fcb8b56f28784b10896.pdf

2 Nursing and Midwifery Board of Ireland (NMBI) (2018) Advanced Practice (Midwifery) Standards and Requirements. Dublin.www.nmbi.ie/NMBI/media/NMBI/Advanced-Practice-(Midwifery)-Standards-and-Requirements-2018-final.pdf

The Guideline Developers are as follows:

- Dr Icchya Gyawali, Obstetrics and Gynaecology Specialist Registrar
- Ms Aidene Rogers, Clinical Midwife Manager 2, Rotunda Hospital, Dublin.
- Dr Khadijah Ismail, Consultant Obstetrician and Gynaecologist, University Maternity Hospital Limerick

1.5 Stakeholder involvement

Stakeholders are people who have a common interest in improving health services. This includes persons that are responsible for delivering and those who receive services related to the clinical Guideline.

The EAG has representatives from a broad range of professional backgrounds. Relevant to this Guideline there are representatives from Obstetrics, Neonatology and Midwifery. A public patient representative is also included in the EAG from the Patient Advocacy Service Ireland and the Irish Neonatal Health Alliance.

The following additional stakeholders were consulted about this Guideline:

- Ms Carol Desmond, Midwifery Practice Development Coordinator, Assistant Director of Midwifery, University Maternity Hospital Limerick
- Ms Suzanne Jackman, Clinical Skills Facilitator for Midwifery, University Maternity Hospital Limerick
- Dr Mendinaro Imcha, Clinical Director, Maternal and Child Health Directorate, University of Limerick Hospital Group, Consultant Obstetrician and Gynaecologist, University Maternity Hospital Limerick

1.6 Disclosure of interests

Guideline developers and reviewers bring a range of experiences and perspectives to the work of the national Guideline Programme. It is likely that both Guideline developers and stakeholders/reviewers will have a variety of interests, arising from different contexts and activities done in a professional or personal capacity. These can include employment and other sources of income, speaking engagements, publications and research, and membership of professional or voluntary organisations. The involvement of individuals with relevant content expertise is essential for enhancing the value of Guideline recommendations, but these individuals may also have interests that can lead to conflicts of interest, as may peer reviewers, patient representatives and researchers.

All interests should be declared if, in the view of a reasonable person, they are relevant, or could be perceived to be relevant, to the work of the Clinical Practice Guideline in question.[3] Declaring an interest does not mean there is a conflict of interest.

It is important that interests are openly declared so they can be appropriately managed. Conflicts of interest can bias recommendations and ultimately be harmful to women and the health system. Disclosures of interests and appropriate management of conflicts of interest, when identified, are therefore essential to producing high-quality, credible health guidelines.[4]

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3 NICE (2019) Policy on declaring and managing interests for NICE advisory committees https://www.nice.org.uk/Media/Default/About/Who-we-are/Policies-and-procedures/declaration-of-interests-policy.pdf

4 Traversy G, Barnieh L, Akl EA, Allan GM, Brouwers M, Ganache I, Grundy Q, Guyatt GH, Kelsall D, Leng G, Moore A, Persaud N, Schünemann HJ, Straus S, Thombs BD, Rodin R, Tonelli M. CMAJ. 2021, 193(2):E49-E54. DOI: 10.1503/cmaj.200651 https://www.cmaj.ca/content/193/2/E49

The Guidelines International Network (GIN), a global network of Guideline developers that aims to promote best practices in the development of high-quality guidelines, developed a set of 9 principles to provide guidance on how financial and non-financial conflicts of interest should be both disclosed and managed. It is recommended that Guideline developers follow the GIN principles.[5]

For this National Clinical Practice Guideline, all Guideline developers are asked to complete a conflict of interest declaration form. The response to declared interests will be managed by the Guideline programme team, in accordance with GIN principles. Conflicts of interest may be reported in the published Guideline and declarations of interest can be made available.

The Guideline Developers have made no disclosures to the programme team in respect of this Guideline.

1.7 Disclaimer

These guidelines have been prepared to promote and facilitate standardisation and consistency of good clinical practice, using a multidisciplinary approach. Information in this Guideline is current at the time of publication.

The ultimate judgement regarding a particular clinical procedure or treatment plan must be made by the Clinician in light of clinical data presented by the woman and the diagnostic and treatment options available. Clinical material offered in this Guideline does not replace or remove clinical judgment or the professional care and duty necessary for each specific woman. Clinical care carried out in accordance with this Guideline should be provided within the context of locally available resources and expertise.

This Guideline does not address all elements of standard practice and assumes that individual clinicians are responsible for:

- Discussing care with women in an environment that is appropriate, and which enables respectful confidential discussion. This includes the use of interpreter services where necessary
- Advising women of their choices and ensure informed consent is obtained
- Provide care with professional scope of practice, meeting all legislative requirements and maintaining standards of professional conduct
- Applying standard precautions and additional precautions, as necessary, when delivering care
- Documenting all care in accordance with local and mandatory requirements.

5 Holger J. Schünemann, Lubna A. Al-Ansary, Frode Forland, *et al.*; for the Board of Trustees of the Guidelines International Network. Guidelines International Network: Principles for disclosure of interests and management of conflicts in guidelines. Ann Intern Med. 2015;163:548-553. doi:10.7326/M14-1885. https://www.acpjournals.org/doi/10.7326/m14-1885

1.8 Use of language

Within this guidance we use the terms 'woman' and 'women's health'. However, it is important to acknowledge that people who do not identify as cis-gender women are excluded from this descriptor, including people who identify as transgender, gender diverse and gender non-binary[6]. While there has been a trend to remove the word 'woman/women' and use 'gender neutral' language in policy and practice in relation to women's reproductive health and wellbeing, there is no evidence base to inform this change.[7] We also appreciate that there are risks to desexing language when describing female reproduction[8] [9].

Services and delivery of care must be appropriate, inclusive and sensitive to the needs of people whose gender identity does not align with the sex they were assigned at birth. This includes training and education regarding diverse pathways to pregnancy and the use of practices which affirm the sexual and gender identities of all people using Obstetrics and Gynaecology services. Finally, all those using maternal and reproductive healthcare and services should receive individualised, respectful care including use of the gender nouns and pronouns they prefer.[7]

Language use is key to effectively communicate options, recommendations, and respectfully accept a woman's fully informed decision[10]. With this in mind, the use of birth is preferable to the term delivery in all circumstances and is used consistently where possible throughout the guidelines. It is acknowledged that in some circumstances (e.g., in the case of a medically indicated intervention or surgery) and in some contexts, substituting with the term delivery is considered appropriate and this term may be used instead.

1.9 Adopting a trauma-informed approach to maternity care

Many women accessing maternity services may have experienced historical or current trauma prior to, or during pregnancy – including emotional, physical, sexual abuse, rape and torture. The perinatal period (pregnancy, birth and the postpartum) can be a time when previous trauma is triggered[11]. Maternity care procedures which may seem routine and 'non-invasive' to healthcare professionals (HCPs), e.g., abdominal palpation or providing breastfeeding support can be triggering for some women with a history of trauma, as can intimate procedures such as vaginal examinations[12].

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6 Moseson H, Zazanis N, Goldberg E, *et al.* The Imperative for Transgender and Gender Nonbinary Inclusion. Obstet Gynecol. 2020;135(5):1059-1068. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7170432/

7 Council of Deans of Health. Midwifery Network position paper: use of sexed language. May 2023. https://www.councilofdeans.org.uk/2024/02/midwifery-network-position-paper-use-of-sexed-language/

8 Brotto LA, Galea LAM. Gender inclusivity in women's health research. BJOG: An International Journal of Obstetrics & Gynaecology. https://obgyn.onlinelibrary.wiley.com/doi/full/10.1111/1471-0528.17231

9 Gribble KD, Bewley S, Bartick MC, *et al.* Effective Communication About Pregnancy, Birth, Lactation, Breastfeeding and Newborn Care: The Importance of Sexed Language. *Frontiers in Global Women's Health*. 2022;3. Accessed June 9, 2022. https://www.frontiersin.org/article/10.3389/fgwh.2022.818856

10 https://blogs.bmj.com/bmj/2018/02/08/humanising-birth-does-the-language-we-use-matter/

11 Horsche A., Garthus-Niegel S., Ayers S, Chandra P., Hartmann K., Caisbuch E., Lalor J (2024). Childbirth-related posttraumatic stress disorder: definition, risk factors, pathophysiology, diagnosis, prevention, and treatment. Am J Obstet Gynecol. 2024 Mar;230(3S): S1116-S1127. doi: 10.1016/j.ajog.2023.09.089

12 Montgomery E. Feeling safe: a metasynthesis of the maternity care needs of women who were sexually abused in childhood. Birth 40:88-95. Birth. 2013 Jun;40(2):88-95. doi: 10.1111/birt.12043

Trauma-informed care (TIC) is a developing approach to healthcare which recognises the importance of psychological safety, and the need to prevent or resist re-traumatisation of individuals[13]. It is based on 4 key principles (known as the 4Rs): (1) realisation of trauma; (2) recognition of trauma; (3) responding to trauma and (4) resisting re-traumatisation[14,]. A trauma-informed approach to maternity care means that all staff in an organisation have an understanding of the impact of trauma on individuals, families and organisations[15]. While a universal approach is yet to be agreed, within clinical practice and research, many organisations recognise the need to move towards becoming trauma-informed in the provision of maternity care[15, 16]. Such an approach requires commitment, investment and transformation within maternity services.

In simple terms, HCPs should recognise the impact of women's previous or current history of trauma (whether disclosed or not) and adopt a universally sensitive approach to care provision that recognises the impact of trauma on service users and HCPs. Examples of this include ensuring clear communication and consent is sought before any procedures/interventions, ensuring women are provided with dignity and respect at all times.

13 Vogel TM, Coffin E. (2021). Trauma-informed care on labor and delivery. Anesthesiol Clin. 2021 Dec;39(4):779-791. doi: 10.1016/j.anclin.2021.08.007

14 Substance Abuse and Mental health Services Administration. SAMHSA'a Concept of Trauma and Guidance for a Trauma-Informed Approach. HHS Publication No. (SMA) 14-4884. Rockville, MD: Substance Abuse and Mental Health Services Administration, 2014

15 Law C, Wolfenden L, Sperlich M, Taylor J. A (2021). Good practice guide to support implementation of trauma-informed care in the perinatal period. The centre for early child development (Blackpool, UK) commissioned by NHS England and NHS Improvement in 2021. https://www.england.nhs.uk/publication/a-good-practice-guide-to-support-implementation-of-trauma-informed-care-in-the-perinatal-period/

16 Ayers, S., Horsch, A., Garthus-Niegel, S., Nieuwenhuijze, M., Bogaerts, A., Hartmann, K., Karlsdottir, S. I., Oosterman, M., Tecirli, G., Turner, J. D., Lalor, J., & COST Action CA18211 (2024). Traumatic birth and childbirth-related post-traumatic stress disorder: International expert consensus recommendations for practice, policy, and research. *Women and birth: journal of the Australian College of Midwives*, *37*(2), 362-367. https://doi.org/10.1016/j.wombi.2023.11.006

Chapter 2: **Clinical Practice Guideline**

Background

The anatomical relationship of the fetus to the maternal pelvis is of importance during labour. The nearest anatomical part of the fetuses body to the maternal pelvis inlet is defined as fetal presentation [1]. Most commonly, the fetal head is presenting, a cephalic presentation [2]. Any non-cephalic presentations in a fetus at term is regarded as malpresentation [3]. Breech presentation is when the buttocks and/or feet is presenting instead of the head [2], and is the most common malpresentation affecting about 3% of the pregnancies [4]. Transverse lie represents about 0.03% of the births[5].

Fetal lie refers to the long axis of the fetus relative to the longitudinal axis of the uterus [6]. The long axis of the fetus can be longitudinal/parallel to the axis of the uterus or can be perpendicular. Longitudinal lie is when the fetal spine is parallel to the maternal spine. In contrast, transverse lie is when the fetal longitudinal axis is perpendicular to the long axis of the uterus. Approximately 1 in 300 fetus is in transverse lie at term [7]. A study reported that 83% of the fetuses that lie transverse at 37 weeks' gestation spontaneously correct themselves to longitudinal lie when presenting in labour [8]. Oblique lie is when fetal longitudinal axis is diagonal to the uterus. This lie usually is temporary and occurs during fetal conversion between other lies [1].

Pregnancies associated with non-longitudinal lie are associated with increased risk of maternal and perinatal morbidity as compared to pregnancies in which the fetus is in a longitudinal lie. These include cord prolapse, postpartum haemorrhage, fetal academia and fetal asphyxia [8 9]. While non-longitudinal lie is relatively uncommon, it is important to provide women with optimal care in order to negate the risks associated with it.

Recommendations relevant to this Guideline can also be found in:

National Clinical Practice Guideline: Umbilical Cord Prolapse: Prevention, Diagnosis and Management[17]

National Clinical Practice Guideline: Induction of Labour[18]

Antenatal care for Women on the Supportive Care Pathway (due 2026)

17 White M, McInerney V, Neary A, Ismail KI. National Clinical Practice Guideline: Umbilical Cord Prolapse: Prevention, Recognition and Management. National Women and Infants Health Programme and The Institute of Obstetricians and Gynaecologists. March 2026

18 Mitchell J.M, Nolan C, El Shaikh M, Cullinane, S, Borlase D. National Clinical Practice Guideline: Induction of Labour. National Women and Infants Health Programme and The Institute of Obstetricians and Gynaecologists. October 2023.

Clinical Question 2.1: **What is unstable lie?**

Evidence Statement

A number of theories have been proposed to explain fetal presentation and the eventual longitudinal lie that most fetuses reach at term. The lie of the fetus is governed by two laws – Pajot's law of adaptation/ accommodation of solid masses and the law of gravity [10] [11]. In early pregnancy, when the amniotic fluid volume is relatively large in relation to fetal volume, the fetus is less constrained by the size of the uterine cavity and is often in a non-cephalic presentation. As the pregnancy continues, the shape of the uterus, maternal pelvis and maternal abdominal musculature favours a longitudinal lie[4].

Furthermore, as the volume of amniotic fluid gradually diminishes in relation to the fetal size, the cephalic pole of the fetus is smaller in volume than its pelvic pole and therefore in conformity with Pajot's law, the fetal pelvic pole will be displaced towards the fundus of the uterus, which is more capacious. To assume this position, the fetus will undergo a summersault and this is aided by the law of gravity [10]. The longitudinal lie presents a position along the gravity with least constriction for the fetus [11].

In an article from 1969, Edwards and Nicholson defined unstable lie as a condition after 38 weeks' gestation when the fetal lie is oblique or transverse and the fetal presentation varies[12]. Currently, the definition remains unchanged and more recently, unstable lie is defined as a condition when the longitudinal axis of the fetus is changing repeatedly after 37 completed weeks of gestation [13]. This can be between longitudinal, transverse or oblique lie, and when in longitudinal lie, can be breech or cephalic presentation [14].

Clinical Practice

Unstable lie is defined as a condition in which the fetal longitudinal axis is changing repeatedly after 37+0 weeks' gestation.

Recommendations

1. **We recommend defining unstable lie as a condition where the longitudinal axis of the fetus is changing repeatedly after 37+0 weeks' gestation.**

Clinical Question 2.2: **What are the risk factors for unstable lie?**

Evidence Statement

Unstable lie is more likely to occur when there is extra space in utero fetal movement or when the fetal presenting part is restricted from engaging into the pelvis. The site of the placental implantation, uterine distortion by anatomic factors, and uterine distention are associated with risk factors which can modify the space within the uterine cavity. It is likely that fetal lie is affected by this mechanism [5] [15]. The risk factors can be divided into maternal and fetal factors.

MATERNAL CAUSES

Placenta praevia

As a consequence of placenta praevia, the fetal head is unable to engage normally into the pelvis [16].

Fibroids

Large submucosal fibroids (also referred as leiomyomas) can distort or obstruct the uterine cavity therefore resulting in fetal malpresentation[17]. In a population-based cohort of over 72,000 consecutive patients with singleton pregnancy in Washington State who underwent a routine second trimester anatomy scan, patients with a fibroid uterus were more likely to have fetal malpresentation at the time of birth compared with those without fibroids [18]. Other features associated with particularly high risk for fetal malpresentation are multiple fibroids, fibroid located behind the placenta or in the lower uterine segment [19].

Müllerian anomalies/uterine septum

Müllerian anomalies are associated with increased risk of fetal malpresentation because they have a smaller, uncharacteristic uterine cavity which inhibit the movement to cephalic presentation [20]. In a recent systematic review, uterus with Müllerian anomalies is at an increased risk for malpresentation compared to normal uterus-septate uterus (OR 13.76), bicorporeal (OR 10.41), hemi-uterus (OR 11.6).

Multipara

Pregnancy and post-natal muscle weakness as well as successive pregnancies have been implicated as factors that could compromise abdominal muscle strength[21]. The strain of the developing fetus puts stress of the abdominal musculature thereby causing it to stretch and lose its elasticity and slack [22]. Thus, a lax abdominal wall with minimal support from abdominal musculature would occasionally cause the fetus not to assume its longitudinal position.

FETAL CAUSES

Polyhydramnios

Potential consequence of polyhydramnios can lead to fetal malpresentation and unstable lie as the uterus is distended due to increased amniotic fluid and has more space for the fetus to move around freely [23] [24].

Preterm

In one study, 85% of the fetuses were found to be in transverse lie between 24 and 28 weeks' gestation[6]. At this gestation, the fetal lie is controlled by the size of uterus due to its weight and abundant space for movement [4]. Therefore, if labour occurs at this gestation, there is a high likelihood of fetal malpresentation.

Fetal neurologic deficit (anencephaly, tumours, hydrocephalus) or disorders with reduced tone such as Down syndrome

Fetuses with reduced tone secondary to chromosomal abnormalities or with a neurologic deficit attribute to unstable lie. As mentioned previously, the law of gravity along with the law of adaptation and accommodation of solid masses would promote hydrocephalic fetus, or fetuses with tumours to assume a non-cephalic presentation [10] [11]. These pathologies distort the anatomy of the uterus and its normal shape, therefore not encouraging a cephalic position.

Clinical Practice

Risk factors for unstable lie can be divided into maternal and fetal causes.

Maternal risk factors for unstable lie, including placenta praevia, uterine fibroids, Mullerian anomalies and multiparity should be identified in the antenatal period.

Fetal risk factors for unstable lie, including polyhydramnios, prematurity and fetal neurological deficits should be identified in the antenatal period.

Recommendations

2. **We recommend identifying risk factors for unstable lie in the antenatal period, including maternal and fetal risk factors, so that the necessary follow up is considered in the antenatal care pathway.**

Clinical Question 2.3: **How should unstable lie be diagnosed?**

Evidence Statement

Abdominal palpation using the Leopold manoeuvres is performed during a clinical examination to determine the fetal lie, presentation and engagement[25]. A large cross sectional analytic study of 1633 antenatal women was performed at a tertiary obstetric hospital in Australia[26] to examine the accuracy of abdominal palpation. This study included pregnancies between 35-37 weeks' gestation and provides the only source of evidence regarding accuracy of abdominal palpation in near term to term pregnancies. The results showed that sensitivity of clinical examination for detecting non-longitudinal lie and non-cephalic presentation was 70% (95% CI: 62% to 78%) with a specificity of 95% (94% to 96%). The positive predictive value and negative predictive value were 55% and 97%, respectively [26]. Nassar *et al.* (2006) found that clinical examination increased the probability of diagnosis from 8% (prior probability or prevalence) to 55% (posterior probability or positive predictive value) therefore proving the benefit of abdominal palpations, whilst also favouring the introduction of alternative testing to further investigate and confirm abnormal fetal presentations.

This study suggests that introduction of routine ultrasound improves diagnostic accuracy in determining fetal lie and presentation[14]. Nassar *et al.* [26] compared the sensitivity of clinical examination and ultrasonography in detecting unstable lie and found that when compared with ultrasonography; clinical examinations lacks the sensitivity[26 27]. Furthermore, ultrasound should be used in investigating the cause of unstable lie such as placenta praevia or fibroids as this can allow for timely management and clinical decision making.

Clinical Practice

The clinical diagnosis of unstable lie should initially be made by abdominal palpation utilising Leopold manoeuvres.

Ultrasound examination should be used if unsure about fetal lie and to investigate the cause of unstable lie.

At term (>37+0 weeks' gestation) all women should have an abdominal palpation to identify fetal lie. If previously documented as a longitudinal lie, and it is not at 37+0, they should be offered an ultrasound examination to confirm presentation.

Women who are on the Supported Care Pathway (SCP), and are found to have unstable lie, need a referral to an Obstetrician. General practitioners (GP) who suspect unstable lie should refer women to an maternity hospital/unit.

Recommendations

3. **We suggest performing abdominal palpation to make a clinical diagnosis of unstable lie after 37+ 0 weeks' gestation.**
4. **We recommend using ultrasound to confirm suspected unstable lie and to investigate its cause.**

Clinical Question 2.4: **What are the risks associated with unstable lie?**

Evidence Statement

There is no clear published evidence on the maternal and neonatal morbidities, however we know that there is a risk of umbilical cord prolapse with a presenting part above the pelvic inlet [13] [28] and unstable lie at the time of rupture of membranes.

Umbilical cord prolapse (UCP)

UCP is a rare but severe obstetric complication in the presence of ruptured membranes[28]. A non-engaged presenting fetal part at the time of rupture of membranes is a confirmed risk factor [28] [29]. A retrospective review in the UK by Cuffolo, *et al.* in 2017 looked at 205 cases from 2009 to 2012. Unstable lie complicated 0.78% of the pregnancies and only 2% (n=4) ruptured their membranes spontaneously, with no cases of cord prolapse or perinatal deaths [15].

Ruptured membranes in pregnancies with unstable lie, regardless of whether the woman is contracting, poses a significant risk of cord prolapse [13]. This is especially so if the fetal lie is transverse, oblique or if the presenting part is not engaged [13].

Uterine rupture

Uterine rupture from prolonged labour in a transverse lie may lead to severe maternal/perinatal morbidity and mortality [30]. If labour progresses, the fetal shoulders may get impacted in the maternal pelvis causing a pathological uterine contraction ring called the "Bandl's ring", which leads to a thin lower uterine segment that is prone to rupture [9].

Clinical Practice

When non-longitudinal lie is diagnosed prenatally, an elective in-patient management should be offered to women between 37+0- and 38+0-weeks' gestation for normal risk pregnancy. Women with previous history of preterm labour or preterm premature rupture of membranes should be considered for admission earlier, after discussion between the individual woman and lead clinician involved in her care.

Women should be informed about the reason for hospital admission, the risk of cord prolapse should membranes rupture and the risk of uterine rupture if they are contracting. This discussion should be clearly documented in the medical notes.

The team consultant should be made aware of all women who have been admitted with unstable lie.

Women with unstable lie after 38+0 weeks who declined admission, should be strongly advised to contact the hospital should membranes rupture spontaneously or if they are getting uterine contractions. The risk of cord prolapse should be discussed and documented.

Women should be informed that umbilical cord prolapse (UCP) is an obstetric emergency and should contact the hospital, and emergency services for prompt transfer to the hospital.

Recommendations

5. **We recommend considering in-patient management of women with unstable lie between 37+0 – 38+0 weeks' gestation. This decision should be made on an individual basis. Earlier admission may be required in pregnancies with a higher risk of preterm labour.**
6. **Women with suspected/diagnosed unstable lie who decline admission should be advised of the risk of complications associated with unstable lie, largely cord prolapse.**
7. **We recommend advising women with unstable lie after 38+0 weeks' gestation who decline admission to contact the hospital once symptoms suggestive of labour commence and to immediately present to hospital if the membranes rupture.**

Clinical Question 2.5: **What are the recommendations for inpatient management and the timing of birth for pregnancies complicated by unstable lie?**

Evidence Statement

The Royal College of Obstetrician and Gynaecology (RCOG) Umbilical Cord Prolapse Guideline recommends elective admission at term after 37+0 weeks however there is no further advice on mode and timing of delivery.[44] Birth planning for women with fetuses in unstable lie focuses on improving perinatal morbidity and mortality [14].

Cuffalo *et al.* reported that 47% of cases with unstable lie were corrected within 72 hours of admission after 37weeks' gestation. Furthermore, this cohort of women was either offered an immediate induction or allowed home. With the women that were discharged home, 25% were readmitted again with unstable lie and all prior to spontaneous rupture of membrane (SROM)[15]. There is guidance for waiting for 48-72 hours after stabilisation but there is no evidence to support this [13]. There was a 2% chance of SROM with non-longitudinal lie however Cuffalo *et al.* reported that none of them were associated with cord prolapse.

A similar study done by Szaboova *et al.* [31] showed that more than half of the study population were admitted before 38 weeks' gestation, with no case associated of cord prolapse or immediate caesarean section. 73% of the women had caesarean delivery at 39+1 weeks and almost half of these (41%) had cephalic presentation at the time of caesarean section.

If there is rupture of membranes or the patient is in active labour with transverse or oblique lie, a caesarean delivery is indicated [14]. The neonatal morbidity and mortality is significantly lower in women having immediate caesarean delivery [32]. Although uncommon, limb trauma of the presenting fetal part and maternal trauma, including rectal injury have been described, mostly as case reports in recent literatures [33] [34].

Clinical Practice

During the admission, abdominal palpation should be done twice daily to determine fetal lie. Fetal heart should be auscultated after abdominal palpation and in addition if there are any clinical concerns. If any uncertainty regarding fetal lie on abdominal palpation, a bedside ultrasound should be performed.

Women should have a full venous thromboembolism (VTE) risk assessment on admission in accordance with national guidelines. This should include compression stockings and appropriate venous thromboprophylaxis. Furthermore, Irish Maternity Early Warning Score (IMEWS) should be performed while admitted as per national guidelines.

Midwives and Obstetricians should review women at admission to ensure there is adequate support while in patient and at home. Social work referral should be made after assessment and after gaining consent from the women.

Women should be encouraged to attend antenatal education classes for risk factors and red flags around unstable lie.

Should unstable lie correct to cephalic presentation for 48 hours during the inpatient stay, women should either be given a choice for induction of labour or discharge home to await spontaneous onset of labour.

Induction of labour between 38-40 week's gestation should be determined on; a case-by-case basis and in discussion with the women and her preferences. If they are post-dates, i.e., 41+ 0 weeks' gestation, induction of labour should be offered as per the NWIHP Induction of labour guideline.[19]

Given low sensitivity with clinical examination, an ultrasound examination should be encouraged prior to discharge.

For women planning a vaginal birth, it is encouraged to wait up to 41+0 weeks for correction of fetal lie before offering elective caesarean birth.

In cases with SROM or suspicion of same, continuous fetal monitoring is recommended. If the lie is non cephalic, emergency lower segment caesarean birth is recommended.

A discussion with the woman regarding her preferences should be had at the time of admission in regard to her expectations and mode of birth.

19 Mitchell J.M, Nolan C, El Shaikh M, Cullinane, S, Borlase D. National Clinical Practice Guideline: Induction of Labour. National Women and Infants Health Programme and The Institute of Obstetricians and Gynaecologists. October 2023.

Recommendations

8. We recommend that women who are admitted with unstable lie undergo abdominal palpation by the healthcare team twice daily, morning and evening, for fetal lie and to include an auscultation of the fetal heart.
9. We suggest should unstable lie correct to cephalic presentation for a minimum of 24 hours during the inpatient stay, women should either be given a choice for induction of labour, considering the gestation and full assessment for suitability, or discharge home to await spontaneous onset of labour.
10. We recommend offering induction of labour to women who are 41+0 weeks' gestation once unstable lie corrects.
11. For women planning vaginal birth, and in otherwise uncomplicated pregnancy, we suggest waiting up to 41+0 weeks' gestation for correction of fetal lie prior to offering elective caesarean birth.
12. We recommend a discussion with the woman on her care and birth preferences at the time of admission with regards to her expectations and mode of delivery.

Clinical Question 2.6: **What is the role of healthcare professionals regarding communication with women experiencing unstable lie?**

Evidence Statement

The Institute of Medicine (IOM) states that in order to provide patient-centred care, one must respect and respond to individual women's needs, preferences and values in all clinical decisions [35]. Henly also noted that patient centred communication is fundamental to ensuring optimal health outcomes and imperative in clinical interactions [36]. This aligns with the HSE Consent Policy (2022) which outlines the ethical and legal obligation we as healthcare professionals (HCP) must ensure that women provide voluntary, informed, and competent agreement prior to any medical intervention, e.g. term unstable lie being offered induction of labour vs. discharge home to await labour. Women are legally entitled to clear, comprehensive information about the nature, risks, benefits, and alternatives of the proposed intervention. Consideration for capacity is also forefront, as informed consent is closely linked to the Assisted Decision-Making (Capacity) Act 2015.[20] This act states that capacity must be established, whereby in the absence of capacity, HCPs must provide appropriate supports or decision-making arrangements.

Communication with the woman

The goal of any communication with the woman is for the physician to learn the patient's choices and experiences and facilitate their well-being [37]. Good communication skills have been shown to improve patient satisfaction, adherence to plans and reduce likelihood of malpractice[38].

Oliveros *et al.* [37] reiterates the importance of clear communication – including overcoming language barriers. Using professional interpreters, translation services, or culturally appropriate materials help ensure informed decision-making and enhances trust between women and HCPs.

20 Assisted Decision-Making (Capacity) Act 2015. www.irishstatutebook.ie

HCPs also have a legal obligation to have a 'Children's First' approach based on the Children First Act (2015)[21] and consideration must be given to pregnant women who may have existing responsibilities at home. It is the responsibility of all HCPs to ensure arrangements are in place for childcare and emotional support while the mother is hospitalised, and if not, social support networks are mobilised. Henly[36] reports that pregnant women benefit greatly from emotional and psychological support during hospitalisation, whether it be from family, community organisations, or hospital-based services.

Communication between healthcare professionals (HCP)

Clinical handover is defined as "the exchange between health professional of information about a patient accompanying either a transfer of control over, or of responsibility for the patient [39]. Performed well, clinical handover should ensure that lapses in continuity of patient care, errors and harm are reduced in hospital setting[40]. Evidence suggests the use of structured, standardised frameworks for handover improves information transfer and patient outcomes [41].

One of the most widespread and well-studied frameworks is "ISBAR". The ISBAR framework, endorsed by the WHO provides a standardised approach to communication which can be used in a wide range of clinical contexts[42]. The purpose of the tool is to make communications more efficient and complete through patient identification, clinical situation, background medical history, assessment and recommendation by the team [43].

Clinical Practice

The diagnosis of unstable lie should be conveyed to the woman in an empathetic manner. Clear non-medical terms should be used to explain the risks associated with unstable lie. A professional interpreter must be utilised in the absence of a good understanding of English.

The woman's preference with regards to timing and mode of birth should be considered provided it is within safe clinical practice.

There should be clear documentation in the medical notes of the above to ensure continuation and transparency of care.

Team consultant and consultant on call should be aware of all women with unstable lie admitted to the hospital/unit.

HCPs should be aware of the woman's wishes for mode of birth and this should be communicated and documented.

Recommendations

13. **We recommend the need for clear communication, through interpretation if needed, to ensure informed decision making and consent.**
14. **Clear documentation of the woman's preferences should be recorded in the medical notes.**

21 Children First Act 2015, c. 36. www.irishstatutebook.ie

Chapter 3: Development Of Clinical Practice Guideline

3.1 Literature search strategy

A comprehensive literature review was undertaken between October 2023 and January 2025 which included national and international publications. PUBMED, EMBASE and Cochrane Library were searched using terms related to unstable lie in pregnancy including 'non longitudinal lie', 'malpresentation', 'transverse lie', 'oblique lie' and 'cord prolapse'. Searches were limited to English language articles, and no time restriction was applied as there was limited evidence and literature. Guidelines from other international professional bodies, namely the Royal College of Obstetrics and Gynaecology (UK) were consulted.

3.2 Appraisal of evidence

Following a comprehensive literature review the quality, validity and relevance of the evidence gathered were critically appraised by the Guideline developers under the following headings:

- Study design
- Relevance of primary and secondary outcomes
- Consistency of results across studies
- Magnitude of benefit versus magnitude of harm
- Applicability to practice context

A number of evidence-based recommendations for management of unstable lie in pregnancy were agreed upon. They have been adapted to reflect care in the Irish healthcare setting.

3.3 AGREE II process

While being developed, the Guideline was assessed using the AGREE II checklist (Appendix 3) as recommended by the Department of Health in the 'How to Develop a National Clinical Guideline: a manual for guideline developers', 2019 [22].

The purpose of AGREE II is to provide a framework to:

1. Assess the quality of guidelines;
2. Provide a methodological strategy for the development of guidelines; and
15. Inform what information and how information ought to be reported in guidelines

22 Department of Health (2019). How to develop a National Clinical Guideline: a manual for guideline developers. Available at: https://www.gov.ie/en/collection/cd41ac-clinical-effectiveness-resources-and-learning/

3.4 Literature review

Details of supportive evidence-based literature for this Guideline are reported in chapter two. The following steps were undertaken to ensure a comprehensive review of the literature on unstable lie. A list of clinical questions was agreed by the Guideline Development Group early in the process.

The literature search to answer the clinical questions was conducted by Dr Icchya Gyawali, Ms Aidene Rogers and Dr Khadijah Ismail, there was no time restriction place on the evidence searched.. The evidence reviewed comes from both national and international studies and has been adapted to fit the Irish context. Literature was used when the evidence was relevant and applicable to the Irish context and omitted when this was not the case.

3.5 Grades of recommendation

GRADE offers a transparent and structured process for developing and presenting evidence summaries and for carrying out the steps involved in developing recommendations.[23]

While we acknowledge that for this particular work an extensive GRADE approach is not possible, we have used the suggested language set out in the GRADE table when making recommendations.[24] (Appendix 4)

3.6 Future research

An important outcome of the Guideline development process is in highlighting gaps in the evidence base. The questions of relevance to this Guideline include;

1. A large multi-centred and observational cohort study to show similarity in morbidities between inpatient and outpatient care, should unstable lie be monitored as an outpatient setting?
2. The use of cervical length and fetal fibronectin in predicting onset of labour for outpatient management
3. Qualitative research of unstable lie for suggestions regarding fetal monitoring and safety in an outpatient setting.

23 Guyatt, Gordon, *et al.* "GRADE Guidelines: 1. Introduction – GRADE Evidence Profiles and Summary of Findings Tables." *Journal of Clinical Epidemiology*, vol. 64, no. 4, 2011, pp. 383-94, https://doi.org/10.1016/j.jclinepi.2010.04.026.

24 SMFM adopts GRADE (Grading of Recommendations Assessment, Development, and Evaluation) for clinical guidelines. Society for Maternal-Fetal Medicine (SMFM), Chauhan SP, Blackwell SC. Am J Obstet Gynecol. 2013 Sep;209(3):163-5. doi: 10.1016/j.ajog.2013.07.012. PMID: 23978245 https://pubmed.ncbi.nlm.nih.gov/23978245/

Chapter 4: Governance and Approval

4.1 Formal governance arrangements

This Guideline was written by the Guideline developers under the direction of the Guideline Programme Team (GPT). An Expert Advisory Group was formed to review the Guideline prior to submission for final approval with the National Women and Infants Health Programme. The roles and responsibilities of the members of each group and their process were clearly outlined and agreed.

4.2 Guideline development standards

This Guideline was developed by the Guideline Developer Group (GDG) within the overall template of the HSE National Framework[25] for developing Policies, Procedures, Protocols and Guidelines (2023) and under supervision of the Guideline Programme Team.

A review was conducted by a group of experts, specialists and advocates (the EAG) prior to approval by the Clinical Advisory Group (CAG) of the National Women and Infants Health Programme (NWIHP) with final sign off for publication by CAG Co-Chairs, the Clinical Director of NWIHP and the Chair of the IOG. See appendix 5 for list of CAG members.

25 Health Service Executive (HSE), National 3PG Working Group, How to Develop HSE National Policies, Procedures, Protocols and Guidelines –A Practical Guide, Strategy and Research Directorate, December 2023.

Chapter 5: **Communication and Dissemination**

A communication and dissemination plan for this Guideline has been developed by the GPT and endorsed by NWIHP.

Effective ongoing clear communication is essential in explaining why the Guideline is necessary and securing continued buy-in. It provides an opportunity to instil motivation within staff, helps overcome resistance to change and gives an opportunity for feedback[26].

The Clinical Guideline will be circulated and disseminated through the Guideline Programme Team as well as through the professional networks who participated in developing and reviewing the document.

Senior management within the maternity units are responsible for the appropriate dissemination of new and updated guidelines. Local hospital groups including Guideline committees are also instrumental in the circulation of new and updated guidelines and promoting their use in the relevant clinical settings.

The HSE will make this Guideline and supporting documents available to all employees through standard networks. Electronic versions available on the https://www2.healthservice.hse.ie/organisation/national-pppgs/ and RCPI websites https://www.rcpi.ie/faculties/obstetricians-and-gynaecologists/national-clinical-guidelines-in-obstetrics-and-gynaecology/ and other communication means can be used to maximise distribution.

In the case of this Guideline, we will disseminate it to the Institute of Obstetricians and Gynaecologists (IOG) and Nursing and Midwifery Board of Ireland (NMBI) and ask that it be made easily accessible to their members.

26 Department of Health (2018). NCEC Implementation Guide and Toolkit. Available at: https://www.gov.ie/en/collection/cd41ac-clinical-effectiveness-resources-and-learning/?

Chapter 6: **Implementation**

6.1 Implementation plan

Implementation was considered at the beginning, and throughout the Guideline development process. The local multidisciplinary clinical team, senior executive and clinical management in each maternity and gynaecology unit are ultimately responsible for the appropriate structured adoption and implementation of the Guideline within their area of responsibility. They must ensure that all relevant personnel under their supervision have read and understood the Guideline and monitor both its effectiveness and adoption.

Within each site, local multidisciplinary teams are responsible for the clinical implementation of Guideline recommendations and ensuring that their local clinical practices and processes reflect and are aligned with the Guideline recommendations.

In the case of this Guideline dissemination by the HSE Acute Hospitals Directorate to all acute hospitals and maternity units ensures it is rolled out nationwide. Additionally, direct distribution to members of the Institute of Obstetricians and Gynaecologists (IOG) and to other interested parties and professional bodies will be facilitated by access to the Guideline on both HSE and RCPI websites.

The following have been put in place to help facilitate the implementation of this Guideline.

- Quick Summary Document (QSD) for clinical staff (includes key recommendations, auditable standards, algorithms and recommended reading)
- Clinical Guideline mobile application
- Plain language summary

6.2 Education plans required to implement the Guideline

It is acknowledged that this Guideline should be complemented by ongoing education, training and assessment where required.

This Guideline's education plan includes implementing the recommendations in the local units and ongoing reviews and audits of the managements and outcomes of unstable lie in pregnancy.

6.3 Barriers and facilitators

To ensure successful implementation of guidelines, it is first necessary to look at potential barriers and facilitators. Taking these into account when developing the implementation plan should improve levels of support from relevant users. (DOH 2018, 2019)

Barriers may be categorised as internal (specific to the Guideline itself) or external (specific to the clinical environment).

The Guideline Development Group has aimed to address any internal barriers during the development of this Guideline. This Guideline has been developed with the aim of being applicable to all healthcare workers. As women may present to any healthcare facility seeking antenatal care, this Guideline has been written to provide guidance to healthcare workers regardless of their familiarity with unstable lie and its management.

Potential external barriers include:

- Structural factors (e.g. budget or service redesign)
- Organisational factors (e.g. lack of facilities or equipment)
- Individual factors (e.g. knowledge, skills, training)
- Woman's perceptions

In the case of this Guideline, it will be necessary to examine possible barriers and consider implementation strategies to address them. By example, this may include discussion with relevant management groups with regards budgetary impact or providing training to the relevant staff.

Some maternity hospitals/units with limited beds would pose a significant barrier in admitting women from 37+0 weeks' gestation.

Furthermore, national shortage of sonographers could also delay in diagnosis the cause of unstable lie as there is limited access to the department. With the growing prevalence of obesity, abdominal palpation would not always be sufficient and need for regular bedside ultrasound to diagnose fetal lie.

For multiparous women one should anticipate resistance for prolonged hospital stay secondary to childcare concerns.

6.4 Resources necessary to implement recommendations

The implementation of this Guideline should be undertaken as part of the quality improvement of each hospital. Hospitals should review existing service provision against this Guideline, identifying necessary resources required to implement the recommendations in this Guideline.

In the case of this Guideline, hospitals should look at their current policies, and education among healthcare professionals about unstable lie. Knowledge of possible complications and management of these complications should be a part of training.

Chapter 7: Audit and Evaluation

7.1 Introduction to audit

It is important that both implementation of the Guideline and its influence on outcomes are audited to ensure that this Guideline positively impacts on the care of the woman. Institutions and health professionals are encouraged to develop and undertake regular audits of Guideline implementation. Personnel tasked with the job of conducting the audit should be identified on receipt of the most recent version of the Guideline.

7.2 Auditable standards

Audit using the key recommendations as indicators should be undertaken to identify where improvements are required and to enable changes, as necessary. Audit should also be undertaken to provide evidence of continuous quality improvement initiatives.

Auditable standards for this Guideline include:

1. Number of women admitted to hospital after 37+6 weeks' gestation with unstable lie and the length of their hospital stay, and mode of delivery and gestation at birth.
2. Number of women with spontaneous rupture of membrane with unstable lie and the incidence of cord prolapse.
3. Maternal and neonatal complications following rupture of membranes and emergency CS birth.
4. Number of women with outpatient management of unstable lie, and their outcomes.

7.3 Evaluation

Evaluation is defined as a formal process to determine the extent to which the planned or desired outcomes of an intervention are achieved[27].

Implementation of this Guideline will be audited periodically at national level, with standards for this set by the NWIHP. Evaluation of the auditable standards should also be undertaken locally by senior hospital clinical management to support implementation.

27 Health Information Quality Authority (2012). National Standards for Safer Better Healthcare [Internet]. Available from: https://www.hiqa.ie/reports-and-publications/standard/national-standards-safer-better-healthcare

Chapter 8: **Revision Plan**

8.1 Procedure for the update of the Guideline

It may be a requirement to amend, update or revise this Guideline as new evidence emerges. This Guideline will be reviewed at national level every three years, or earlier if circumstances require it, and updated accordingly.[28]

The Guideline Development Group will be asked to review the literature and recent evidence to determine if changes are to be made to the existing Guideline. If the Guideline Development Group are unavailable, the GPT along with the NWIHP senior management team will select a suitable expert to replace them.

If there are no amendments required to the Guideline following the revision date, the detail on the revision tracking box must still be updated which will be a new version number and date.

The recommendations set out in this Guideline remain valid until a review has been completed.

8.2 Method for amending the Guideline

As new evidence become available it is inevitable that Guideline recommendations will fall behind current evidence based clinical practice. It is essential that clinical guidelines are reviewed and updated with new evidence as it becomes available.

In order to request a review of this Guideline one of the following criteria must be met:

a) 3 years since the Guideline was published

b) 3 years since last review was conducted

c) Update required as a result of new evidence

Correspondence requesting a review of the Guideline should be submitted to the National Women and Infants Health Programme. Any such requests should be dealt with in a timely manner.

28 Health Service Executive (HSE), National 3PG Working Group, How to Develop HSE National Policies, Procedures, Protocols and Guidelines –A Practical Guide, Strategy and Research Directorate, December 2023.

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Supporting Evidence

GRADE: http://www.gradeworkinggroup.org/

AGREE: http://www.agreetrust.org/agree-ii/

Glossary

AGREE Appraisal of Guidelines for Research and Evaluation

ACOG American College of Obstetricians and Gynaecologists

CAG Clinical Advisory Group

DOH Department of Health

EAG Expert Advisory Group

GIN Guidelines International Network

GP General Practitioner

GPT Guideline Programme Team

GRADE Grading of Recommendations, Assessments, Developments and Evaluations

HCP Health Care Professionals

HIQA Health Information and Quality Authority

HSE Health Service Executive

IMEWS Irish Maternity Early Warning Score

IOG Institute of Obstetricians and Gynaecologists

FIGO International Federation of Gynaecology and Obstetrics

NICE The National Institute for Health and Care Excellence

NCEC National Clinical Effectiveness Committee

NWIHP National Women and Infants Health Programme

PPPG Policy, Procedures, Protocols and Guidelines

QSD Quick Summary Document

RCOG Royal College of Obstetricians and Gynaecologists

RCPI Royal College of Physicians of Ireland

SCP Supportive Care Pathway

SROM Spontaneous Rupture of Membranes

TIC Trauma Informed Care

Appendix 1:
Expert Advisory Group Members 2021-

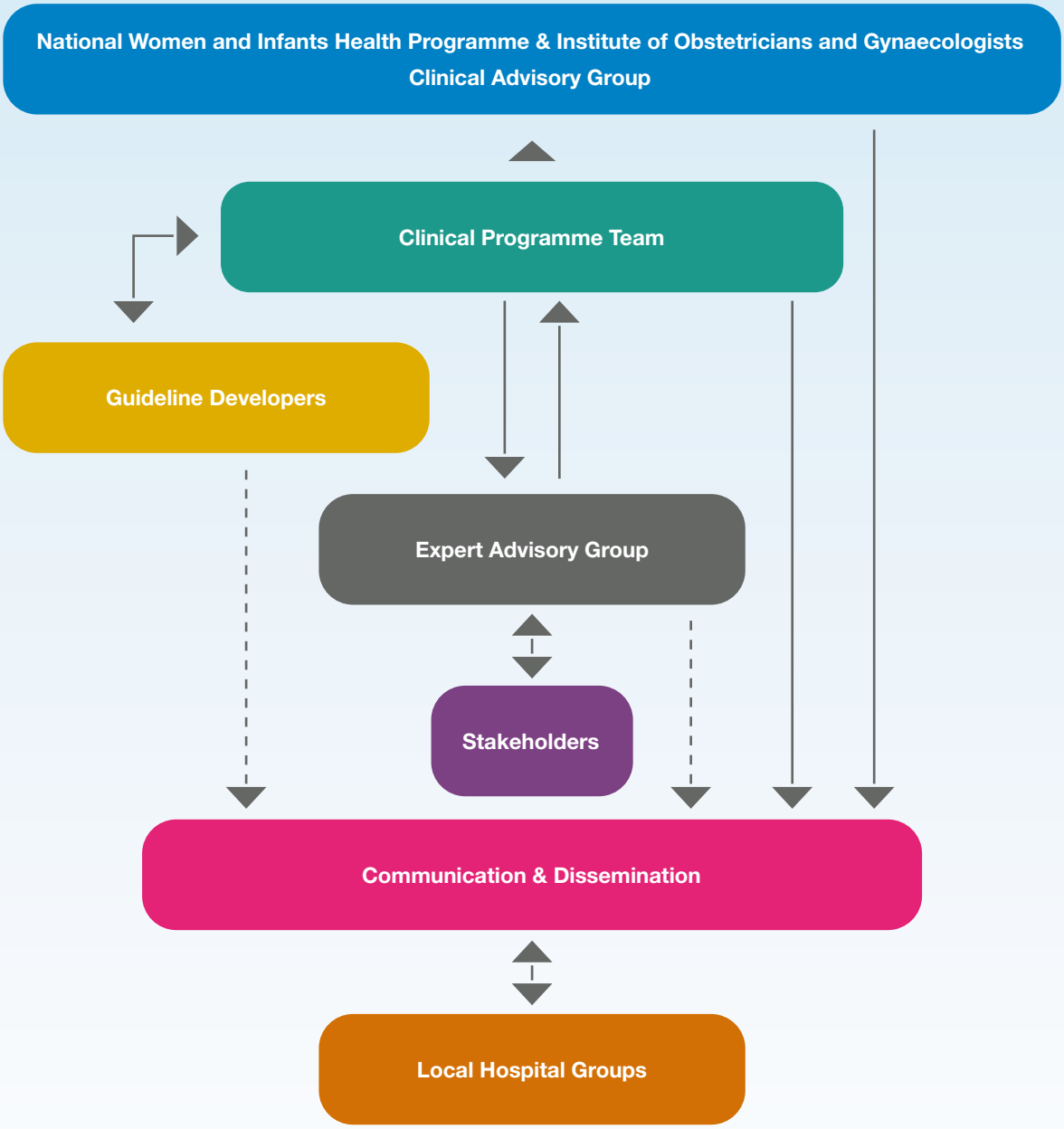
Member	Profession	Location
Dr Mairead Butler	Consultant Obstetrician and Gynaecologist	University Hospital Waterford
Dr Nicholas Barrett	Consultant Anaesthesiologist, Lead for Obstetric Anaesthesiology services	Limerick University Hospital
Dr Venita Broderick	Consultant Obstetrician and Gynaecologist	National Maternity Hospital Dublin
Ms Siobhan Canny	Group Director of Midwifery	Saolta University Health Care Group
Ms Triona Cowman	Director of the Centre for Midwifery Education	Centre for Midwifery Education, Coombe Women & Infants University Hospital
Ms Marie Culliton	Lab Manager/Chief Medical Scientist	National Maternity Hospital Dublin
Ms Niamh Connolly-Coyne and Ms Mandy Daly	Board of Directors Members *(Shared nomination)*	Irish Neonatal Health Alliance
Ms Jennifer Dempsey	Clinical Tutor in Midwifery	University College Dublin
Ms Sinéad Curran	Dietician Manager	National Maternity Hospital
Dr Niamh Conlon	Consultant Histopathologist	Cork University Hospital
Ms Georgina Cruise	National Manager	Patient Advocacy Service
Dr Orla Donohoe	Specialist Registrar, Obstetrics and Gynaecology and SWEC Fellow	St George Hospital, Sydney, Australia
Ms Alana Dineen	Senior Clinical Pharmacist	Cork University Maternity Hospital
Prof Maeve Eogan	Consultant Obstetrician and Gynaecologist National Clinical Lead SATU (HSE)	Rotunda Hospital Dublin
Dr Brendan Fitzgerald	Consultant Perinatal Pathologist	Cork University Hospital

Dr Daniel Galvin	Specialist Registrar, Obstetrics and Gynaecology	Cork University Maternity Hospital
Ms Stacey Grealis	Patient Research Partner	Independent Living Movement Ireland
Ms Fiona Hanrahan	Director of Midwifery and Nursing	Rotunda Hospital Dublin
Ms Laura Harrington	Principal Medical Social Worker	National Maternity Hospital Dublin
Dr Caroline Joyce	Principal Clinical Biochemist, Cork University Hospital	Adjunct Clinical Lecturer, University College Cork.
Dr Chaitra Jairaj	Consultant Perinatal Psychiatrist	Coombe Women & Infants University Hospital, Dublin Midland Regional Hospital Portlaoise
Dr Cathy Monteith	Consultant Obstetrician and Gynaecologist	Our Lady of Lourdes Hospital Drogheda
Oana Marian	PhD, Post-Doctoral Researcher	Pregnancy Loss Research Group, INFANT Centre, University College Cork
Prof John Murphy	Consultant Neonatologist Clinical Lead for the National Clinical Programme for Paediatrics and Neonatology	National Women and Infants Health Programme
Ms Janet Murphy	Advanced Midwifery Practitioner	University Hospital Waterford
Dr Jill Mitchell	Specialist Registrar, Obstetrics and Gynaecology	Cork University Maternity Hospital
Dr Aisling McDonnell	Specialist Registrar, Obstetrics and Gynaecology	Mater Misericordiae University Hospital Dublin
Dr Ciara McCarthy	General Practitioner ICGP and NWIHP Women's Health Lead	Irish College of General Practitioners
Ms Orla McCarthy	Clinical Specialist Physiotherapist in Pelvic Health	Cork University Maternity Hospital
Dr Sarah Nicholson	Locum Consultant Obstetrician and Gynaecologist	Sligo University Hospital
Dr Donough J. O'Donovan	Director Neonatal Intensive Care Unit Consultant Neonatologist/Paediatrician	University College Hospital Galway

Mr Fergal O' Shaughnessy *And* Dr Brian Cleary *(Shared nomination)*	Senior Pharmacist, Honorary Lecturer *And* Chief Pharmacist, Honorary Clinical Associate Professor and Medications Lead, Maternal & Newborn Clinical Management System	Rotunda Hospital Dublin Royal College of Surgeons in Ireland
Dr Gillian Ryan	Consultant Obstetrician and Gynaecologist	University Hospital Galway
Ms Nora Vallejo	Advanced Midwife Practitioner	Coombe Women & Infants University Hospital, Dublin

Member 2021-2025	Profession	Location
Dr Katherine Astbury	Consultant Obstetrician and Gynaecologist	University Hospital Galway
Dr Richard Duffy	Consultant Perinatal Psychiatrist	Rotunda Hospital Dublin
Ms Clare Farrell	Physiotherapy Manager	Coombe Women & Infants University Hospital, Dublin
Ms Marie Finn	Medical Social Work Counsellor	Saolta University Health Care Group
Prof Declan Keane	Consultant Obstetrician, Gynaecologist, Professor of Obstetrics and Gynaecology	National Maternity Hospital Dublin, Royal College of Surgeons in Ireland
Ms Áine Kelly	Physiotherapy Manager	Coombe Women & Infants University Hospital, Dublin
Dr Fergus McCarthy	Consultant Obstetrician, Gynaecologist	Cork University Maternity Hospital, University College Cork
Dr Sarah Petch	Specialist Registrar, Obstetrics and Gynaecology	National Maternity Hospital Dublin
Ms Margaret Quigley	National Lead for Midwifery	Office of Nursing and Midwifery Services Director
Prof Valerie Smith	Chair of Midwifery	University College Dublin
Ms Marita Hennessy	Post-Doctoral Researcher	Pregnancy Loss Research Group, INFANT Centre, University College Cork

Appendix 2:
Guideline Programme Process



Appendix 3: AGREE II Checklist[29]

AGREE Reporting Checklist 2016

This checklist is intended to guide the reporting of Clinical Practice Guidelines.

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA	Page #
DOMAIN 1: SCOPE AND PURPOSE		
1. OBJECTIVES *Report the overall objective(s) of the guideline. The expected health benefits from the guideline are to be specific to the clinical problem or health topic.*	☐ Health intent(s) (i.e., prevention, screening, diagnosis, treatment, etc.) ☐ Expected benefit(s) or outcome(s) ☐ Target(s) (e.g., patient population, society)	
2. QUESTIONS *Report the health question(s) covered by the guideline, particularly for the key recommendations.*	☐ Target population ☐ Intervention(s) or exposure(s) ☐ Comparisons (if appropriate) ☐ Outcome(s) ☐ Health care setting or context	
3. POPULATION *Describe the population (i.e., patients, public, etc.) to whom the guideline is meant to apply.*	☐ Target population, sex and age ☐ Clinical condition (if relevant) ☐ Severity/stage of disease (if relevant) ☐ Comorbidities (if relevant) ☐ Excluded populations (if relevant)	
DOMAIN 2: STAKEHOLDER INVOLVEMENT		
4. GROUP MEMBERSHIP *Report all individuals who were involved in the development process. This may include members of the steering group, the research team involved in selecting and reviewing/ rating the evidence and individuals involved in formulating the final recommendations.*	☐ Name of participant ☐ Discipline/content expertise (e.g., neurosurgeon, methodologist) ☐ Institution (e.g., St. Peter's hospital) ☐ Geographical location (e.g., Seattle, WA) ☐ A description of the member's role in the guideline development group	

29 AGREE Reporting Checklist is available on the AGREE Enterprise website, a free and open access resource to support the practice guideline field (www. agreetrust.org)

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA	Page #
5. TARGET POPULATION PREFERENCES AND VIEWS *Report how the views and preferences of the target population were sought/considered and what the resulting outcomes were.*	☐ Statement of type of strategy used to capture patients'/publics' views and preferences (e.g., participation in the guideline development group, literature review of values and preferences) ☐ Methods by which preferences and views were sought (e.g., evidence from literature, surveys, focus groups) ☐ Outcomes/information gathered on patient/public information ☐ How the information gathered was used to inform the guideline development process and/or formation of the recommendations	
6. TARGET USERS *Report the target (or intended) users of the guideline.*	☐ The intended guideline audience (e.g. specialists, family physicians, patients, clinical or institutional leaders/administrators) ☐ How the guideline may be used by its target audience (e.g., to inform clinical decisions, to inform policy, to inform standards of care)	
DOMAIN 3: RIGOUR OF DEVELOPMENT		
7. SEARCH METHODS *Report details of the strategy used to search for evidence.*	☐ Named electronic database(s) or evidence source(s) where the search was performed (e.g., MEDLINE, EMBASE, PsychINFO, CINAHL) ☐ Time periods searched (e.g., January 1, 2004 to March 31, 2008) ☐ Search terms used (e.g., text words, indexing terms, subheadings) ☐ Full search strategy included (e.g., possibly located in appendix)	
8. EVIDENCE SELECTION CRITERIA *Report the criteria used to select (i.e., include and exclude) the evidence. Provide rationale, where appropriate.*	☐ Target population (patient, public, etc.) characteristics ☐ Study design ☐ Comparisons (if relevant) ☐ Outcomes ☐ Language (if relevant) ☐ Context (if relevant)	

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA	Page #
9. STRENGTHS & LIMITATIONS OF THE EVIDENCE *Describe the strengths and limitations of the evidence. Consider from the perspective of the individual studies and the body of evidence aggregated across all the studies. Tools exist that can facilitate the reporting of this concept.*	☐ Study design(s) included in body of evidence ☐ Study methodology limitations (sampling, blinding, allocation concealment, analytical methods) ☐ Appropriateness/relevance of primary and secondary outcomes considered ☐ Consistency of results across studies ☐ Direction of results across studies ☐ Magnitude of benefit versus magnitude of harm ☐ Applicability to practice context	
10. FORMULATION OF RECOMMENDATIONS *Describe the methods used to formulate the recommendations and how final decisions were reached. Specify any areas of disagreement and the methods used to resolve them.*	☐ Recommendation development process (e.g., steps used in modified Delphi technique, voting procedures that were considered) ☐ Outcomes of the recommendation development process (e.g., extent to which consensus was reached using modified Delphi technique, outcome of voting procedures) ☐ How the process influenced the recommendations (e.g., results of Delphi technique influence final recommendation, alignment with recommendations and the final vote)	
11. CONSIDERATION OF BENEFITS AND HARMS *Report the health benefits, side effects, and risks that were considered when formulating the recommendations.*	☐ Supporting data and report of benefits ☐ Supporting data and report of harms/side effects/risks ☐ Reporting of the balance/trade-off between benefits and harms/side effects/risks ☐ Recommendations reflect considerations of both benefits and harms/side effects/ risks	
12. LINK BETWEEN RECOMMENDATIONS AND EVIDENCE *Describe the explicit link between the recommendations and the evidence on which they are based.*	☐ How the guideline development group linked and used the evidence to inform recommendations ☐ Link between each recommendation and key evidence (text description and/or reference list) ☐ Link between recommendations and evidence summaries and/or evidence tables in the results section of the guideline	

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA	Page #
13. EXTERNAL REVIEW *Report the methodology used to conduct the external review.*	☐ Purpose and intent of the external review (e.g., to improve quality, gather feedback on draft recommendations, assess applicability and feasibility, disseminate evidence) ☐ Methods taken to undertake the external review (e.g., rating scale, open-ended questions) ☐ Description of the external reviewers (e.g., number, type of reviewers, affiliations) ☐ Outcomes/information gathered from the external review (e.g., summary of key findings) ☐ How the information gathered was used to inform the guideline development process and/or formation of the recommendations (e.g., guideline panel considered results of review in forming final recommendations)	
14. UPDATING PROCEDURE *Describe the procedure for updating the guideline.*	☐ A statement that the guideline will be updated ☐ Explicit time interval or explicit criteria to guide decisions about when an update will occur ☐ Methodology for the updating procedure	
DOMAIN 4: CLARITY OF PRESENTATION		
15. SPECIFIC AND UNAMBIGUOUS RECOMMENDATIONS *Describe which options are appropriate in which situations and in which population groups, as informed by the body of evidence.*	☐ A statement of the recommended action ☐ Intent or purpose of the recommended action (e.g., to improve quality of life, to decrease side effects) ☐ Relevant population (e.g., patients, public) ☐ Caveats or qualifying statements, if relevant (e.g., patients or conditions for whom the recommendations would not apply) ☐ If there is uncertainty about the best care option(s), the uncertainty should be stated in the guideline	
16. MANAGEMENT OPTIONS *Describe the different options for managing the condition or health issue.*	☐ Description of management options ☐ Population or clinical situation most appropriate to each option	

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA	Page #
17. IDENTIFIABLE KEY RECOMMENDATIONS *Present the key recommendations so that they are easy to identify.*	☐ Recommendations in a summarized box, typed in bold, underlined, or presented as flow charts or algorithms ☐ Specific recommendations grouped together in one section	
DOMAIN 5: APPLICABILITY		
18. FACILITATORS AND BARRIERS TO APPLICATION *Describe the facilitators and barriers to the guideline's application.*	☐ Types of facilitators and barriers that were considered ☐ Methods by which information regarding the facilitators and barriers to implementing recommendations were sought (e.g., feedback from key stakeholders, pilot testing of guidelines before widespread implementation) ☐ Information/description of the types of facilitators and barriers that emerged from the inquiry (e.g., practitioners have the skills to deliver the recommended care, sufficient equipment is not available to ensure all eligible members of the population receive mammography) ☐ How the information influenced the guideline development process and/or formation of the recommendations	
19. IMPLEMENTATION ADVICE/TOOLS *Provide advice and/or tools on how the recommendations can be applied in practice.*	☐ Additional materials to support the implementation of the guideline in practice. For example: • Guideline summary documents • Links to check lists, algorithms • Links to how-to manuals • Solutions linked to barrier analysis (see Item 18) • Tools to capitalize on guideline facilitators (see Item 18) • Outcome of pilot test and lessons learned	

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA	Page #
20. RESOURCE IMPLICATIONS *Describe any potential resource implications of applying the recommendations.*	☐ Types of cost information that were considered (e.g., economic evaluations, drug acquisition costs) ☐ Methods by which the cost information was sought (e.g., a health economist was part of the guideline development panel, use of health technology assessments for specific drugs, etc.) ☐ Information/description of the cost information that emerged from the inquiry (e.g., specific drug acquisition costs per treatment course) ☐ How the information gathered was used to inform the guideline development process and/or formation of the recommendations	
21. MONITORING/ AUDITING CRITERIA *Provide monitoring and/or auditing criteria to measure the application of guideline recommendations.*	☐ Criteria to assess guideline implementation or adherence to recommendations ☐ Criteria for assessing impact of implementing the recommendations ☐ Advice on the frequency and interval of measurement ☐ Operational definitions of how the criteria should be measured	
DOMAIN 6: EDITORIAL INDEPENDENCE		
22. FUNDING BODY *Report the funding body's influence on the content of the guideline.*	☐ The name of the funding body or source of funding (or explicit statement of no funding) ☐ A statement that the funding body did not influence the content of the guideline	
23. COMPETING INTERESTS *Provide an explicit statement that all group members have declared whether they have any competing interests.*	☐ Types of competing interests considered ☐ Methods by which potential competing interests were sought ☐ A description of the competing interests ☐ How the competing interests influenced the guideline process and development of recommendations	

From: Brouwers MC, Kerkvliet K, Spithoff K, on behalf of the AGREE Next Steps Consortium. The AGREE Reporting Checklist: a tool to improve reporting of clinical practice guidelines. BMJ 2016;352:i1152. doi: 10.1136/bmj.i1152.

For more information about the AGREE Reporting Checklist, please visit the AGREE Enterprise website at http://www.agreetrust.org

Appendix 4: **Grades of Recommendation**[30]

Grade of recommendation	Clarity of risk/ benefit	Quality of supporting evidence	Implications	Suggested Language
1A. Strong recommendation, high-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	Consistent evidence from well-performed randomized, controlled trials or overwhelming evidence of some other form. Further research is unlikely to change our confidence in the estimate of benefit and risk	Strong recommendations can apply to most patients in most circumstances without reservation. Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present	We strongly recommend… We recommend that …should be performed/ administered… We recommend that …. is indicated/ beneficial/ effective…
1B. Strong recommendation, moderate-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	Evidence from randomized, controlled trials with important limitations (inconsistent results, methodologic flaws, indirect or imprecise), or very strong evidence of some other research design. Further research (if performed) is likely to have an impact on our confidence in the estimate of benefit and risk and may change the estimate	Strong recommendation and applies to most patients. Clinicians should follow a strong recommendation unless a clear and compelling rationale for an alternative approach is present	We recommend… We recommend that … should be performed/ administered… We recommend that … is (usually) indicated/ beneficial/ effective…

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Grade of recommendation	Clarity of risk/ benefit	Quality of supporting evidence	Implications	Suggested Language
1C. Strong recommendation, low-quality evidence	Benefits appear to outweigh risk and burdens, or vice versa	Evidence from observational studies, unsystematic clinical experience, or from randomized, controlled trials with serious flaws. Any estimate of effect is uncertain	Strong recommendation that applies to most patients. Some of the evidence base supporting the recommendation is, however, of low quality	We recommend… We recommend that … should be performed/ administered… We recommend that … Is (maybe) indicated/ beneficial/ effective…
2A. Weak recommendation, high-quality evidence	Benefits closely balanced with risks and burdens	Consistent evidence from well-performed randomized, controlled trials or overwhelming evidence of some other form. Further research is unlikely to change our confidence in the estimate of benefit and risk	Weak recommendation: best action may differ depending on circumstances or patients or societal values	We suggest… We suggest that… may/might be reasonable...
2B. Weak recommendation, moderate-quality evidence	Benefits closely balanced with risks and burdens, some uncertainty in the estimates of benefits, risks and burdens	Evidence from randomized, controlled trials with important limitations (inconsistent results, methodologic flaws, indirect or imprecise), or very strong evidence of some other research design. Further research (if performed) is likely to have an impact on our confidence in the estimate of benefit and risk and may change the estimate	Weak recommendation; alternative approaches likely to be better for some patients under some circumstances	We suggest… We suggest that … may/might be reasonable...

Grade of recommendation	Clarity of risk/ benefit	Quality of supporting evidence	Implications	Suggested Language
2C. Weak recommendation, low-quality evidence	Uncertainty in the estimates of benefits, risks, and burdens; benefits may be closely balanced with risks and burdens	Evidence from observational studies, unsystematic clinical experience, or from randomized, controlled trials with serious flaws. Any estimate of effect is uncertain	Very weak recommendation: other alternatives may be equally reasonable	We suggest … is an option We suggest that … may/might be reasonable.
Best practice	A recommendation that is sufficiently obvious that the desirable effects outweigh undesirable effects, despite the absence of direct evidence, such that the grading of evidence is unnecessary			We recommend… We recommend that … should be performed/ administered… We recommend that… Is usually) indicated/ beneficial/effective

31

31 SMFM adopts GRADE (Grading of Recommendations Assessment, Development, and Evaluation) for clinical guidelines. Society for Maternal-Fetal Medicine (SMFM), Chauhan SP, Blackwell SC. Am J Obstet Gynecol. 2013 Sep;209(3):163-5. https://pubmed.ncbi.nlm.nih.gov/23978245/

Appendix 5:
CAG Members 2025-

Dr Cliona Murphy (Chair, 2023-). Consultant Obstetrician and Gynaecologist, Coombe Women and Infants University Hospital. Clinical Director, National Women and Infants Health Programme.

Dr Suzanne O'Sullivan (2023-). Consultant Obstetrician and Gynaecologist, Cork University Maternity Hospital. Director of Education and Training, Obstetrics and Gynaecology, Institute of Obstetricians and Gynaecologists. Chair, Institute of Obstetricians and Gynaecologists.

Dr Venita Broderick (2024-). Clinical Lead Gynaecology, National Women and Infants Health Programme.

Dr Brian Cleary (2023-). Chief Pharmacist, Rotunda Hospital. Medications Lead, Maternal and Newborn Clinical Management System Project.

Angela Dunne (2023-). Director of Midwifery, National Women and Infants Health Programme.

Prof Seán Daly (2023-). Master, Consultant Obstetrician and Gynaecologist, Rotunda Hospital.

Prof Maeve Eogan (2023-). Consultant Obstetrician and Gynaecologist, Rotunda Hospital. Clinical Lead, Sexual Assault Treatment Units, National Women and Infants Health Programme.

Prof Richard Greene (2023-). Consultant Obstetrician and Gynaecologist, Cork University Maternity Hospital. Clinical Director, National Perinatal Epidemiology Centre, University College Cork.

Prof John Higgins (2023-). Cork University Maternity Hospital, Consultant Obstetrician and Gynaecologist, Clinical Director, Ireland South Women and Infants Directorate.

Prof Shane Higgins (2023-). Master, Consultant Obstetrician and Gynaecologist, National Maternity Hospital.

Dr Mendinaro Imcha (2023-). Clinical Director, Consultant Obstetrician and Gynaecologist, University Maternity Hospital Limerick.

Prof John Murphy (2023-). Clinical Lead Neonatology, National Women and Infants Health Programme.

Dr Aoife Mullaly (2023-). Consultant Obstetrician and Gynaecologist, Coombe Women and Infants University Hospital. Clinical Lead, Termination of Pregnancy Services, National Women and Infants Health Programme.

Prof John Morrison (2023-). Consultant Obstetrician and Gynaecologist, University Hospital Galway. Clinical Director, Saolta Maternity Directorate.

Kilian McGrane (2023-). Director, National Women and Infants Health Programme.

Prof Keelin O'Donoghue (2023-). Consultant Obstetrician and Gynaecologist, Cork University Maternity Hospital. Clinical Lead, National Guidelines, National Women and Infants Health Programme.

Prof Mike O'Connell (2023-). Master, Consultant Obstetrician and Gynaecologist, Coombe Women and Infants University Hospital.

Ms Davinia O'Donnell (2024-). General Manager | National Women and Infants Health Programme

Dr Vicky O'Dwyer (2023-). Consultant Obstetrician and Director of Gynaecology, Rotunda Hospital.

Dr Mairead O'Riordan (2024-). Consultant Obstetrician and Gynaecologist, Cork University Maternity Hospital.

Dr Fergal O'Shaughnessy (2025-) Senior Pharmacist, Rotunda Hospital.

Prof Nóirín Russell (2023-). Consultant Obstetrician and Gynaecologist, Cork University Maternity Hospital. Clinical Director, Cervical Check.

Dr Carmen Regan (April 2024). Clinical Lead Obstetrics, National Women and Infants Health Programme.

Dr Orla Shiel (2024-). Consultant Obstetrician and Gynaecologist, National Maternity Hospital.

Ms Clare Thompson (2023-). Consultant Gynaecological Oncologist, The Mater, Dublin.