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OBG 504

OBSTETRIC CLINIC AND SIMULATION TRAINING

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Course code: OBG 504

Course title: Obstetric Clinic and Simulation Training

Course credit load: 2 Units

Series 1: Approach to the Obstetric and Gynaecological Patient in the Clinic

- **Part 1.1: Principles of the Obstetric and Gynaecological Consultation**
    - Sub Part 1.1.1: Structure and goals of the consultation
    - Sub Part 1.1.2: Communication skills across obstetric and gynaecological settings
    - Sub Part 1.1.3: Building rapport and trust with the pregnant and non-pregnant patient
- **Part 1.2: Professionalism, Consent, and Chaperoning**
    - Sub Part 1.2.1: Professional conduct in the obstetric and gynaecological clinic
    - Sub Part 1.2.2: Informed consent in obstetric and gynaecological consultation
    - Sub Part 1.2.3: Chaperoning and safeguarding dignity
- **Part 1.3: Cultural Sensitivity and Special Considerations**
    - Sub Part 1.3.1: Cultural and religious sensitivity in practice
    - Sub Part 1.3.2: Approaching the adolescent patient
    - Sub Part 1.3.3: Approaching patients with additional communication needs
- **Part 1.4: The Clinic Environment and Workflow**
    - Sub Part 1.4.1: Organising the antenatal and gynaecological clinic environment
    - Sub Part 1.4.2: Clinic workflow and time management
    - Sub Part 1.4.3: Simulation-based training in obstetric and gynaecological clinical skills

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Introduction

Picture a woman arriving for her first antenatal visit, and, later that same clinic session, another woman arriving with a gynaecological concern she has been anxious about for weeks. Both deserve the same genuine professionalism, sensitivity, and skill from the moment they walk

through the door, even though the content of their consultations will differ considerably. This Series lays the essential foundation for the whole of this course: how to approach both the obstetric and gynaecological patient with confidence and compassion, and how simulation-based training helps you develop that approach safely before you meet your first real patient.

The aim of this Series is to equip you with the knowledge and attitudes required to approach the obstetric and gynaecological patient professionally, sensitively, and effectively, and to understand the role of simulation-based training in developing these skills.

We shall commence this Series by examining the principles and structure of the obstetric and gynaecological consultation, including effective communication. Next, we will consider professionalism, informed consent, and chaperoning. Following that, our attention turns to cultural sensitivity and special considerations for diverse patient groups. Finally, we will conclude by examining the antenatal and gynaecological clinic environment, workflow, and the role of simulation-based training in developing clinical skills.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 1.1:** demonstrate a structured approach to the obstetric and gynaecological consultation,
- **SLO 1.2:** describe effective communication skills across obstetric and gynaecological settings,
- **SLO 1.3:** describe the principles of professionalism, informed consent, and chaperoning,
- **SLO 1.4:** describe cultural sensitivity and special considerations in approaching the obstetric and gynaecological patient,
- **SLO 1.5:** describe how to organise the antenatal and gynaecological clinic environment and workflow, and
- **SLO 1.6:** describe the role of simulation-based training in developing obstetric and gynaecological clinical skills.

1.1 Principles of the Obstetric and Gynaecological Consultation

1.1.1 Structure and goals of the consultation

A well-structured consultation in either obstetric or gynaecological practice typically progresses through recognisable stages, beginning with introduction and establishing the reason for attendance, followed by history taking, examination where indicated, discussion of findings and management options, and a clear plan for follow-up or further investigation, with each stage

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building logically on the one before it rather than proceeding in an ad hoc, disorganised fashion that risks missing important information.

The specific goals of the encounter differ somewhat between the two settings: an antenatal consultation centres on monitoring the wellbeing of both mother and foetus and preparing the woman for childbirth, while a gynaecological consultation more often centres on reaching a diagnosis for a specific presenting symptom, though both share the same underlying goals of genuine understanding of the woman's concerns, shared decision-making, and ensuring she leaves the consultation with a clear understanding of what happens next.

Fill in the blank: A well-structured consultation begins with introduction and establishing the reason for _____. An antenatal consultation centres on monitoring the wellbeing of both mother and _____.

1.1.2 Communication skills across obstetric and gynaecological settings

Effective communication in both settings relies on open questioning at the outset of the consultation, allowing the woman to describe her concerns in her own words before narrowing to more specific, closed questions, active listening, and the use of clear, jargon-free language that a woman without medical training can genuinely understand and act upon, whether she is attending for a routine antenatal visit or a gynaecological concern.

In obstetric practice specifically communication must also account for the involvement of the developing foetus in the conversation, with many women experiencing heightened anxiety around any discussion of risk to their pregnancy, meaning that particular care, patience, and reassurance, without ever minimising genuine clinical concerns, are required when discussing findings, investigations, or complications identified during antenatal care.

Fill in the blank: Effective communication begins with _____ questioning, allowing the woman to describe her concerns in her own words. In obstetric practice, communication must account for many women's heightened _____ around any discussion of risk to their pregnancy.

1.1.3 Building rapport and trust with the pregnant and non-pregnant patient

Rapport and trust are foundational to effective care in both obstetric and gynaecological practice, given the frequently sensitive, intimate nature of the symptoms, examinations, and, in pregnancy, the deeply personal nature of the experience itself, built through consistency, genuine warmth, and demonstrable respect for the woman's autonomy and dignity from the very first moment of contact.

In antenatal care specifically continuity of care, seeing the same or a small, familiar team of providers across successive visits, has been shown to meaningfully strengthen this rapport and improve both the woman's experience and, in some studies, clinical outcomes, reflecting the particular value of a sustained, trusted relationship built across the many months of a single pregnancy rather than a series of disconnected, unfamiliar encounters.

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Fill in the blank: Rapport and trust are built through consistency, genuine warmth, and demonstrable respect for the woman's _____ and dignity. Continuity of care in antenatal practice has been shown to meaningfully strengthen rapport and, in some studies, improve clinical _____.

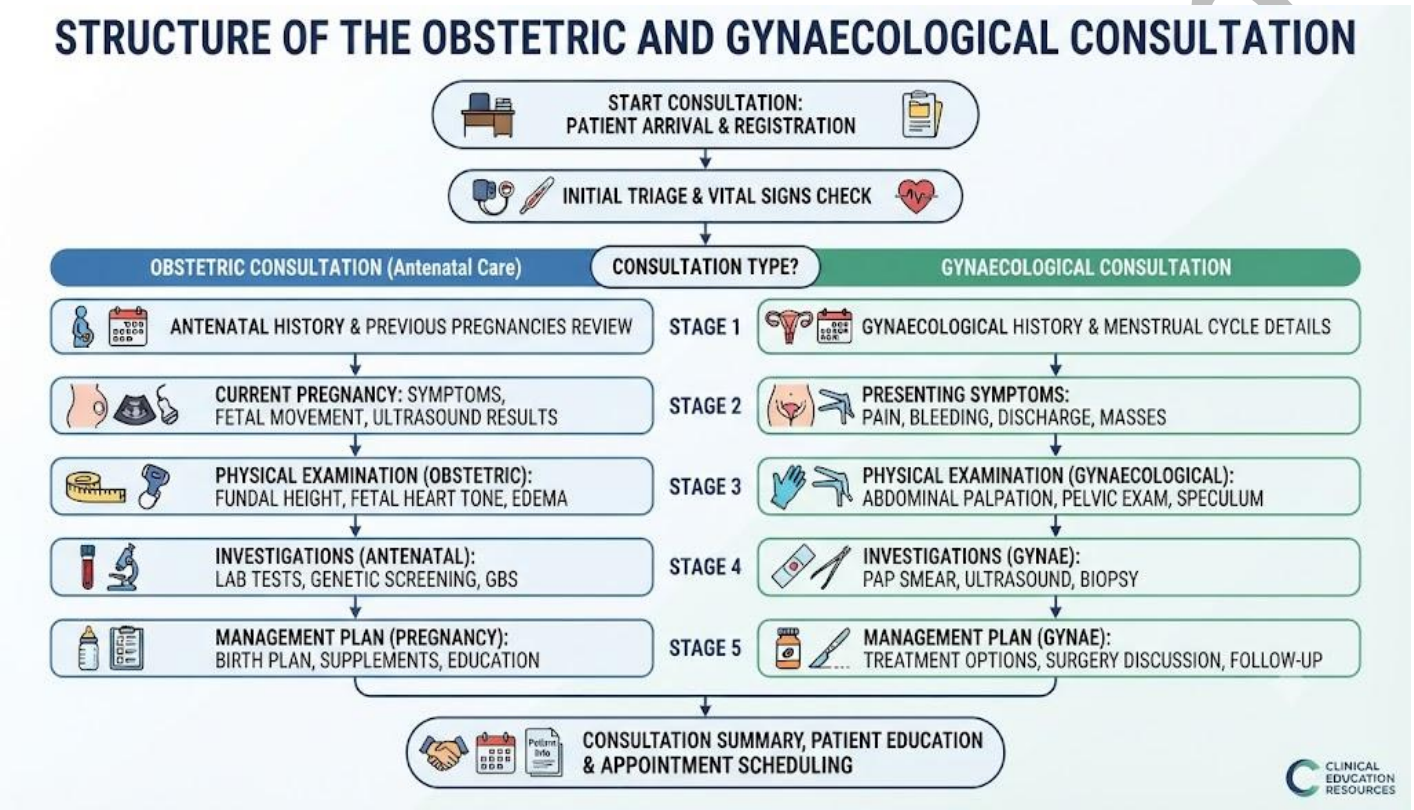

Figure 1.1: The structured stages of the consultation, comparing antenatal and gynaecological goals.

Pilot questions 1.1

1. Describe the sequential stages of a well-structured consultation. (Linked to SLO 1.1)
2. Compare the specific goals of an antenatal consultation with those of a gynaecological consultation. (Linked to SLO 1.1)
3. Describe the principles of effective communication in obstetric and gynaecological practice. (Linked to SLO 1.2)
4. Explain why communication requires particular care in obstetric practice specifically. (Linked to SLO 1.2)
5. Explain the value of continuity of care in building rapport during antenatal care. (Linked to SLO 1.2)

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1.2 Professionalism, Consent, and Chaperoning

1.2.1 Professional conduct in the obstetric and gynaecological clinic

Professional conduct in both the obstetric and gynaecological clinic encompasses appropriate dress and personal presentation, punctuality and respect for the woman's time, maintaining strict confidentiality of all information shared, and consistently treating every woman with courtesy and respect regardless of her background, presenting complaint, or personal circumstances, standards that apply equally whether the clinician is a student, trainee, or senior consultant.

Maintaining appropriate professional boundaries throughout the clinical relationship, avoiding any behaviour that could reasonably be perceived as inappropriate given the intimate nature of this area of practice, and recognising and appropriately managing one's own personal reactions or discomfort with certain topics or presentations, are all essential components of professionalism specific to obstetric and gynaecological practice, distinguishing genuinely professional conduct from mere technical competence alone.

Fill in the blank: Professional conduct includes appropriate dress, punctuality, and maintaining strict _____ of all information shared. Maintaining appropriate professional _____ throughout the clinical relationship is essential given the intimate nature of this practice.

1.2.2 Informed consent in obstetric and gynaecological consultation

Informed consent for any obstetric or gynaecological examination or procedure requires a clear explanation of what is being proposed, why it is being recommended, what it will involve, and any reasonable alternatives, including the option to decline, delivered before the examination or procedure begins and in language the woman can genuinely understand, rather than as a hurried formality completed simply to satisfy a documentation requirement.

Consent must be given voluntarily and can be withdrawn by the woman at any point, even during an examination already in progress, with the clinician stopping immediately if asked to do so, a principle that applies just as fully during a routine antenatal abdominal palpation as it does during a gynaecological pelvic examination, and it is worth explicitly reinforcing to the woman that she remains in control throughout every encounter.

Fill in the blank: Informed consent requires explanation of what is proposed, why it is recommended, and any reasonable _____. Consent can be withdrawn by the woman at any point, whether during an antenatal palpation or a gynaecological pelvic _____.

1.2.3 Chaperoning and safeguarding dignity

A chaperone (an independent observer present during an intimate examination) should be offered to every woman undergoing an obstetric or gynaecological examination, regardless of the gender of the examining clinician, with the specific role, identity, and presence of the chaperone clearly explained beforehand, and the woman's preference, whether to have a chaperone present, to decline one, or to request a specific individual, respected wherever clinically and practically possible.

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Safeguarding a woman's dignity throughout any examination extends well beyond the presence of a chaperone alone, encompassing adequate privacy for undressing and dressing, appropriate draping during the examination itself, clear explanation of each step immediately before it is performed, and, throughout, an unhurried, respectful manner, principles that apply with equal weight whether the examination is a routine antenatal abdominal palpation or a gynaecological pelvic assessment.

Fill in the blank: A chaperone should be offered to every woman undergoing an obstetric or gynaecological examination, regardless of examiner _____. Safeguarding dignity includes adequate privacy, appropriate draping, and clear explanation of each _____.

Element	Key Details
Informed Consent	Explain the nature, purpose, risks, and alternatives of the examination or procedure in clear language.
Voluntary Agreement	Ensure the patient freely agrees without coercion, with the option to withdraw at any time.
Capacity and Understanding	Confirm the patient has the ability to understand information and make an informed decision.
Documentation	Record consent clearly in clinical notes, especially for invasive procedures.
Chaperone Presence	Offer a trained chaperone for all intimate examinations to protect both patient and clinician.
Privacy and Dignity	Provide a private environment, use draping, and maintain respectful communication throughout.
Communication	Use sensitive, empathetic language; check comfort levels during the examination.

Box 1.2: Checklist for informed consent and chaperoning in obstetric and gynaecological practice.

Pilot questions 1.2

1. Describe the components of professional conduct in the obstetric and gynaecological clinic. (Linked to SLO 1.3)
2. Explain the importance of maintaining professional boundaries in this area of practice. (Linked to SLO 1.3)
3. Describe the components of valid informed consent for an obstetric or gynaecological examination. (Linked to SLO 1.3)
4. Explain why consent can be withdrawn at any point during an examination. (Linked to SLO 1.3)

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5. Describe the role of a chaperone and other measures that safeguard a woman's dignity during examination. (Linked to SLO 1.3)

1.3 Cultural Sensitivity and Special Considerations

1.3.1 Cultural and religious sensitivity in practice

Cultural and religious beliefs can significantly influence a woman's comfort discussing obstetric and gynaecological symptoms, her preferences around the gender of her examiner, and her attitudes towards specific investigations, treatments, or aspects of pregnancy and childbirth, and a genuinely respectful, individualised approach, asking about and accommodating these preferences wherever reasonably possible, meaningfully improves both the woman's experience and her engagement with recommended care.

In the diverse Nigerian context specifically clinicians should be aware of the wide range of cultural and religious perspectives their patients may hold regarding menstruation, pregnancy, childbirth practices, fertility, contraception, and examination, approaching each woman as an individual rather than assuming a particular set of beliefs based on apparent ethnicity, religion, or region, while remaining sensitively aware of common patterns that may genuinely inform a more attuned, contextually appropriate approach.

Fill in the blank: Cultural and religious beliefs can significantly influence a woman's comfort discussing symptoms and her preferences around examiner _____. Clinicians should approach each woman as an _____ rather than assuming beliefs based on apparent background.

1.3.2 Approaching the adolescent patient

Adolescent patients attending either obstetric or gynaecological services require a particular, adapted approach, balancing the young woman's own developing autonomy and right to confidentiality with the appropriate involvement of a parent or guardian, generally guided by an assessment of the individual adolescent's maturity and understanding, alongside relevant local legal and professional guidance on consent and confidentiality for this specific age group.

An adolescent presenting pregnant requires particular sensitivity, given the potentially significant social, educational, and family implications of adolescent pregnancy discussed elsewhere in this broader curriculum, with genuine attention to her psychosocial support needs, safeguarding considerations where relevant, and a non-judgemental, supportive approach throughout her antenatal care that neither minimises the genuine complexity of her situation nor treats her with anything less than the same respect afforded to any other pregnant woman.

Fill in the blank: The approach to an adolescent patient balances developing autonomy with appropriate parental or guardian _____. An adolescent presenting pregnant requires

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particular sensitivity given the potential social, educational, and family _____ of adolescent pregnancy.

1.3.3 Approaching patients with additional communication needs

Women with additional communication needs (including hearing or visual impairment, learning disability, or limited literacy) require specific, deliberate adaptation of the standard consultation approach, potentially including the use of a professional interpreter or communication support worker, written or pictorial information provided in an accessible format, and allowing additional time for the consultation to ensure genuine, effective communication and comprehension, whether the encounter is an antenatal visit or a gynaecological consultation.

Language barriers specifically should be addressed using a professional interpreter wherever possible, rather than relying on a family member, particularly for sensitive reproductive health content, given the risk that a family member may filter, alter, or feel uncomfortable relaying sensitive information accurately, potentially compromising both the accuracy of the history obtained and the woman's genuine privacy and autonomy in the consultation.

Fill in the blank: Language barriers should be addressed using a professional _____ wherever possible, rather than relying on a family member. A family member may filter or feel uncomfortable relaying sensitive _____ accurately.

Patient Group	Key Adaptation
Adolescents	Provide confidential, youth-friendly services; emphasise education and reassurance; avoid judgmental language.
Patients with Language Barriers	Use trained interpreters, visual aids, and culturally appropriate communication; confirm understanding.
Patients with Disabilities	Ensure accessibility, respect autonomy, adapt examination techniques, and provide clear explanations.
Patients from Diverse Cultural Backgrounds	Show cultural sensitivity, respect beliefs, involve family when appropriate, and tailor counselling to context.

Table 1.3: Special considerations and adaptations for diverse patient groups.

Pilot questions 1.3

1. Explain how cultural and religious beliefs can influence an obstetric or gynaecological consultation. (Linked to SLO 1.4)

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2. Describe an appropriate approach to cultural sensitivity in the diverse Nigerian context. (Linked to SLO 1.4)
3. Describe the approach to consultation with an adolescent patient. (Linked to SLO 1.4)
4. Describe the particular sensitivity required for an adolescent presenting pregnant. (Linked to SLO 1.4)
5. Describe the adaptations required for patients with additional communication needs. (Linked to SLO 1.4)

1.4 The Clinic Environment and Workflow

1.4.1 Organising the antenatal and gynaecological clinic environment

A well-organised clinic environment ensures adequate privacy for both consultation and examination, with soundproofing or sufficient separation to prevent conversations being overheard, appropriately equipped examination rooms with all necessary equipment readily available and in good working order, including, in the antenatal setting specifically, equipment for measuring blood pressure, symphysio-fundal height, and foetal heart rate, and a comfortable, welcoming waiting area.

Practical environmental considerations also include ensuring examination couches and equipment are appropriately positioned to preserve the woman's dignity during any necessary transition into an examination position, adequate lighting for accurate clinical assessment, and immediate availability of appropriate personal protective equipment and infection control measures, reflecting the genuinely practical, operational dimension of delivering consistently high-quality obstetric and gynaecological care.

Fill in the blank: The antenatal clinic environment requires specific equipment including that for measuring blood pressure, symphysio-fundal height, and foetal _____ rate. Environmental considerations also include ensuring adequate _____ for accurate clinical assessment.

1.4.2 Clinic workflow and time management

Efficient clinic workflow balances the competing demands of thoroughness and time management, with a realistic, appropriately allocated appointment schedule that recognises some consultations, particularly a first antenatal booking visit or a first presentation with a complex gynaecological history, will genuinely require considerably more time than a routine, straightforward follow-up visit, rather than treating every appointment slot as functionally interchangeable regardless of its actual clinical complexity.

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Effective time management within an individual consultation involves structuring the encounter efficiently without making the woman feel rushed, prioritising the most clinically important elements of history and examination when time is genuinely constrained, and being transparent with the woman about time constraints where relevant, offering a further appointment to complete an assessment rather than compromising its quality or her sense of being genuinely heard.

Fill in the blank: Efficient clinic workflow recognises that a first antenatal booking visit requires considerably more _____ than a routine follow-up visit. Effective time management involves structuring the encounter efficiently without making the woman feel _____.

1.4.3 Simulation-based training in obstetric and gynaecological clinical skills

Simulation-based training using manikins, standardised or simulated patients, and structured scenarios allows deliberate, repeated practice of both obstetric and gynaecological history taking, examination technique, communication skills, and procedural competencies in a safe, controlled environment before these skills are applied in genuine clinical practice, offering learners the valuable opportunity to make and learn from mistakes without any risk of harm to an actual patient.

Structured feedback following simulation (from faculty, peers, or, where used, standardised patients themselves) is essential to translate simulated practice into genuine improvement in real clinical performance, with effective simulation training programmes deliberately incorporating this feedback, together with the opportunity for repeated deliberate practice, as core structural components across both the obstetric and gynaecological skills covered throughout this course.

Fill in the blank: Simulation-based training allows deliberate, repeated practice in a safe, controlled environment without risk of _____ to an actual patient. Structured _____ following simulation is essential to translate practice into genuine improvement in clinical performance.

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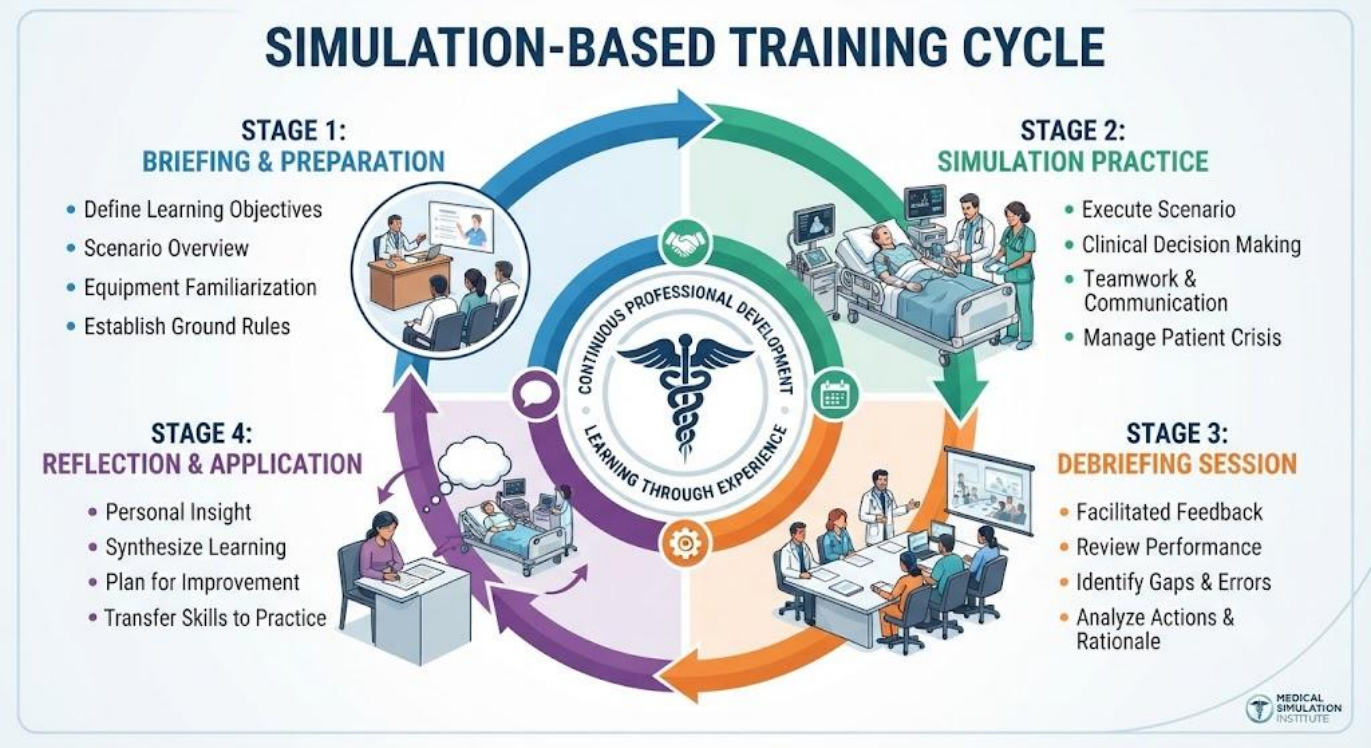

Figure 1.4: The simulation-based training cycle for developing obstetric and gynaecological clinical skills.

Pilot questions 1.4

1. Describe the environmental considerations important in organising an antenatal and gynaecological clinic. (Linked to SLO 1.5)
2. Describe the principles of effective time management within an antenatal and gynaecological clinic. (Linked to SLO 1.5)
3. Explain the value of simulation-based training in developing obstetric and gynaecological clinical skills. (Linked to SLO 1.6)
4. Describe the components of an effective simulation-based training programme. (Linked to SLO 1.6)
5. Explain why structured feedback is essential following simulation training. (Linked to SLO 1.6)

Series Summary

This Series has covered the structure and goals of the obstetric and gynaecological consultation and the communication skills that support it, followed by professionalism, informed consent, and

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chaperoning. It went on to examine cultural sensitivity and special considerations for diverse patient groups, before concluding with the antenatal and gynaecological clinic environment, workflow, and the role of simulation-based training in developing clinical skills.

You should now be able to demonstrate a structured approach to the obstetric and gynaecological consultation, describe effective communication skills, describe the principles of professionalism, consent, and chaperoning, describe cultural sensitivity and special considerations, and describe the organisation of the clinic environment and the role of simulation-based training (Linked to SLOs 1.1 to 1.6).

Glossary of Terms

- **Active listening:** a communication technique involving appropriate eye contact, minimal interruption, and reflecting back what has been heard.
- **Chaperone:** an independent observer offered to a patient during an intimate examination, regardless of examiner gender.
- **Continuity of care:** the practice of a woman seeing the same or a small, familiar team of providers across successive visits.
- **Informed consent:** consent given by a patient with capacity, adequate information, and voluntariness, without coercion.
- **Professional boundaries:** the appropriate limits of the clinical relationship, particularly important given the intimate nature of this practice.
- **Rapport:** a relationship of mutual trust and understanding between clinician and patient.
- **Safeguarding:** measures taken to protect a vulnerable individual, such as a child or adult at risk, from harm.
- **Shared decision-making:** a collaborative process in which clinician and patient jointly reach a decision about care, respecting patient values and preferences.
- **Simulation-based training:** structured practice using manikins, simulated patients, or scenarios, allowing skill development without risk to real patients.
- **Standardised patient:** a person trained to consistently portray a patient case for the purposes of clinical training or assessment.
- **Structured debriefing:** a facilitated discussion following a simulation exercise, identifying learning points and areas for improvement.
- **Booking visit:** the first, most comprehensive antenatal visit, requiring more time than a routine follow-up visit.

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Concept Check Questions [Series 1]

Objective questions

1. An antenatal consultation centres on monitoring the wellbeing of both mother and _____.
2. In obstetric practice, communication must account for many women's heightened _____ around discussion of pregnancy risk.
3. Continuity of care in antenatal practice has been shown to strengthen rapport and, in some studies, improve clinical _____.
4. A chaperone should be offered to every woman undergoing an obstetric or gynaecological examination, regardless of examiner _____.
5. Language barriers should be addressed using a professional _____ wherever possible, rather than relying on a family member.

Short-answer questions

6. Compare the specific goals of an antenatal consultation with those of a gynaecological consultation. (Linked to SLO 1.1)
7. Explain why consent can be withdrawn at any point during an examination. (Linked to SLO 1.3)
8. Describe the particular sensitivity required for an adolescent presenting pregnant. (Linked to SLO 1.4)
9. Describe the principles of effective time management within an antenatal and gynaecological clinic. (Linked to SLO 1.5)
10. Explain why structured feedback is essential following simulation training. (Linked to SLO 1.6)

Long-answer questions

11. Describe the structure and goals of the obstetric and gynaecological consultation, and the communication skills that support it. (Linked to SLO 1.1, SLO 1.2)
12. Describe the principles of professionalism, informed consent, and chaperoning in obstetric and gynaecological practice. (Linked to SLO 1.3)
13. Describe cultural sensitivity and the special considerations required for adolescent patients and those with additional communication needs. (Linked to SLO 1.4)
14. Describe how to organise the antenatal and gynaecological clinic environment and manage clinic workflow effectively. (Linked to SLO 1.5)

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15. Describe the value and components of simulation-based training in developing obstetric and gynaecological clinical skills. (Linked to SLO 1.6)

Answers to Concept Check Questions [Series 1]

Objective questions

1. Foetus.
2. Anxiety.
3. Outcomes.
4. Gender.
5. Interpreter.

Short-answer questions

6. Antenatal consultation centres on monitoring maternal and foetal wellbeing and preparing for childbirth; gynaecological consultation centres on reaching a diagnosis for a presenting symptom.
7. Consent must be voluntary and can be withdrawn at any time, with the clinician stopping immediately if asked, respecting the woman's ongoing autonomy.
8. Genuine attention to psychosocial support needs, safeguarding considerations, and a non-judgemental, supportive, respectful approach throughout care.
9. Structuring the encounter efficiently without rushing the woman, prioritising key elements when time is constrained, and being transparent about constraints.
10. It translates simulated practice into genuine improvement in real clinical performance, an essential component alongside repeated deliberate practice.

Long-answer questions

11. **Basic response:** The obstetric and gynaecological consultation follows a structured sequence from introduction through history, examination, and planning, supported by open questioning and active listening.

Value-added response: Antenatal and gynaecological goals differ in focus, but both require the same genuine rapport, trust, and continuity of care wherever possible.

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12. **Basic response:** Professionalism includes appropriate conduct and boundaries, with informed consent requiring clear explanation and chaperoning offered to every patient.

Value-added response: Consent can be withdrawn at any point, and safeguarding dignity extends beyond chaperoning to privacy, draping, and explanation throughout examination.

13. **Basic response:** Cultural sensitivity requires individualised, respectful approaches, with adolescents needing a balance of autonomy and appropriate involvement of guardians.

Answers to Pilot Questions [Series 1]

Part 1.1

1. Introduction, history taking, examination where indicated, discussion of findings, and a clear follow-up plan.
2. Antenatal consultation centres on maternal and foetal wellbeing and childbirth preparation; gynaecological consultation centres on diagnosis of a presenting symptom.
3. Open questioning initially, active listening, and clear, jargon-free language the woman can understand and act upon.
4. Many women experience heightened anxiety around discussion of risk to their pregnancy, requiring particular care and reassurance.
5. A sustained, trusted relationship across successive visits strengthens rapport and, in some studies, improves clinical outcomes.

Part 1.2

1. Appropriate dress and presentation, punctuality, confidentiality, and consistent courtesy and respect for every patient.
2. The intimate nature of this practice makes maintaining appropriate boundaries essential to trust and professional integrity.
3. Clear explanation of what is proposed, why, what it involves, and reasonable alternatives, given before the examination begins.
4. The woman retains autonomy throughout, and stopping immediately when asked respects that ongoing right to withdraw agreement.
5. A chaperone should be offered regardless of examiner gender, alongside privacy, appropriate draping, and explanation of each step.

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Part 1.3

1. Beliefs can affect comfort discussing symptoms, examiner gender preference, and attitudes towards pregnancy, childbirth, or treatment.
2. Approaching each woman as an individual rather than assuming beliefs based on apparent ethnicity, religion, or region.
3. Balancing developing autonomy with appropriate guardian involvement, guided by assessed maturity and relevant local guidance.
4. Genuine attention to psychosocial needs, safeguarding considerations, and a non-judgemental, supportive, respectful approach.
5. Professional interpreters, accessible written or pictorial information, and allowing additional consultation time.

Part 1.4

1. Adequate privacy, soundproofing, appropriately equipped rooms including antenatal-specific equipment, and a comfortable waiting area.
2. Realistic appointment scheduling that allows more time for complex or first visits, without treating every slot as interchangeable.
3. It allows safe, repeated practice of skills without risk of harm to a real patient, supporting learning from mistakes.
4. Structured feedback and repeated deliberate practice as core components, not a single disconnected exercise.
5. It translates simulated practice into genuine improvement in real clinical performance.

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References and Attributions [Series 1]

Textual References

- Cunningham, F. G., Leveno, K. J., Dashe, J. S. et al. (2022). Williams Obstetrics (26th ed.). McGraw Hill.
- Hoffman, B. L., Schorge, J. O., Halvorson, L. M. et al. (2020). Williams Gynecology (4th ed.). McGraw Hill.
- General Medical Council (2020). Intimate Examinations and Chaperones. GMC.
- Ziv, A., Wolpe, P. R., Small, S. D. and Glick, S. (2003). Simulation-Based Medical Education: An Ethical Imperative. Academic Medicine, 78(8), 783 to 788.

Figures, Plates, Tables, and Boxes

- Figure 1.1: The structured stages of the consultation, comparing antenatal and gynaecological goals. AI-generated using the prompt: "Create a professional medical flowchart titled Structure of the Obstetric and Gynaecological Consultation, showing sequential stages and comparing antenatal and gynaecological goals. Clean clinical educational diagram style."
- Box 1.2: Checklist for informed consent and chaperoning in obstetric and gynaecological practice. AI-generated using the prompt: "Create a simple single-column reference box with an outside border titled Consent and Chaperoning Checklist, listing key elements applicable to obstetric and gynaecological practice. Clinical reference box style."
- Table 1.3: Special considerations and adaptations for diverse patient groups. AI-generated using the prompt: "Create a clean reference table titled Special Considerations in Obstetric and Gynaecological Practice, listing patient groups and key adaptations for each. Simple clinical reference table style with outside border."
- Figure 1.4: The simulation-based training cycle for developing obstetric and gynaecological clinical skills. AI-generated using the prompt: "Create a professional medical diagram titled Simulation-Based Training Cycle, showing briefing, practice, debriefing, and reflection in a cyclical process. Clean clinical educational diagram style."

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Series 2: Symptoms, Clinical Signs, and History Taking in Obstetrics and Gynaecology

- **Part 2.1: Obstetric Symptoms and Danger Signs**
    - Sub Part 2.1.1: Common symptoms of pregnancy and their significance
    - Sub Part 2.1.2: Antenatal danger signs
    - Sub Part 2.1.3: Symptoms in labour
- **Part 2.2: Gynaecological Symptoms**
    - Sub Part 2.2.1: Menstrual and bleeding symptoms
    - Sub Part 2.2.2: Pain, discharge, and other gynaecological symptoms
    - Sub Part 2.2.3: Pelvic mass and urinary and bowel symptoms
- **Part 2.3: Clinical Signs in Obstetrics and Gynaecology**
    - Sub Part 2.3.1: General and abdominal signs relevant to pregnancy
    - Sub Part 2.3.2: General and abdominal signs relevant to gynaecology
    - Sub Part 2.3.3: Pelvic signs on examination
- **Part 2.4: History Taking in Obstetrics and Gynaecology**
    - Sub Part 2.4.1: Structure of the obstetric history
    - Sub Part 2.4.2: Structure of the gynaecological history
    - Sub Part 2.4.3: Systematic history taking technique

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Introduction

In the last Series, we explored how to approach both the obstetric and gynaecological patient with professionalism and sensitivity. We now turn to the substance of what every consultation in either setting is built around: the symptoms women describe, whether the reassuring flutter of foetal movement or the concerning absence of it, the signs a careful examiner can elicit, whether

a gravid uterus or an adnexal mass, and the structured history taking technique that ties them together into a coherent clinical picture across both obstetric and gynaecological practice.

The aim of this Series is to equip you with the knowledge to recognise and accurately describe the common symptoms and clinical signs of obstetrics and gynaecology, and the skill to take a structured, systematic history in both settings.

We shall commence this Series by examining obstetric symptoms, including antenatal danger signs and symptoms in labour. Next, we will consider gynaecological symptoms, including menstrual, pain, discharge, and pelvic mass symptoms. Following that, our attention turns to the clinical signs relevant to both obstetric and gynaecological examination. Finally, we will conclude by examining the structure and technique of history taking in both obstetrics and gynaecology.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 2.1:** list and describe common obstetric symptoms and their significance,
- **SLO 2.2:** describe antenatal danger signs and symptoms in labour,
- **SLO 2.3:** list and describe common gynaecological symptoms,
- **SLO 2.4:** describe the clinical signs relevant to obstetric and gynaecological assessment,
- **SLO 2.5:** describe the pelvic signs identified on examination,
- **SLO 2.6:** describe the structure of the obstetric history,
- **SLO 2.7:** describe the structure of the gynaecological history, and
- **SLO 2.8:** demonstrate systematic history taking technique.

2.1 Obstetric Symptoms and Danger Signs

2.1.1 Common symptoms of pregnancy and their significance

Many symptoms of pregnancy are entirely physiological, reflecting the substantial hormonal and anatomical adaptations of gestation, including nausea and vomiting (most pronounced in the first trimester), breast tenderness, urinary frequency, and mild breathlessness in later pregnancy, and recognising which symptoms fall within this normal, expected range, and which instead warrant further clinical assessment, is a genuinely essential skill for anyone providing antenatal care.

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Foetal movement is a symptom of particular importance in later pregnancy, typically first perceived by the mother around 18 to 20 weeks, with a persistent reduction in previously normal movement pattern warranting prompt clinical assessment, as it may represent an early warning sign of evolving foetal compromise, making clear counselling on foetal movement awareness an important, standard component of routine antenatal education at every visit.

Fill in the blank: Foetal movement is typically first perceived by the mother around _____ to 20 weeks of gestation. A persistent reduction in previously normal foetal movement pattern warrants prompt clinical _____.

2.1.2 Antenatal danger signs

Specific danger signs in pregnancy require urgent assessment and should be explicitly taught to every pregnant woman as part of routine antenatal education, including severe headache (particularly with visual disturbance, suggestive of pre-eclampsia), vaginal bleeding at any stage of pregnancy, reduced foetal movement, severe abdominal pain, and rupture of membranes, each representing a potential marker of a genuinely serious underlying complication requiring prompt evaluation rather than reassurance or a routine, non-urgent follow-up appointment.

A woman presenting with any of these danger signs should be assessed promptly, following a structured approach that considers the specific differential diagnosis relevant to her particular symptom and gestational age, with a low threshold for admission or further investigation given the potentially serious, sometimes rapidly evolving nature of the underlying conditions these specific symptoms can represent.

Fill in the blank: Severe headache with visual disturbance in pregnancy is suggestive of _____. A woman presenting with an antenatal danger sign should have a low threshold for admission or further _____.

2.1.3 Symptoms in labour

The onset of labour is typically signalled by regular, increasingly painful uterine contractions, often accompanied by a show (passage of blood-stained mucus from the cervix) or rupture of membranes, though presentation can vary considerably, and distinguishing genuine, established labour from Braxton Hicks contractions or a false alarm requires careful, structured symptom assessment alongside examination findings.

Symptoms during labour that should prompt particular attention include a sudden change in the character or intensity of pain, which may suggest a complication such as uterine rupture, vaginal bleeding beyond the normal show, or a sudden reduction in the strength or frequency of contractions, each warranting careful reassessment of the woman's progress and wellbeing rather than being attributed automatically to the normal, expected variation of established labour.

Fill in the blank: The onset of labour is typically signalled by regular, increasingly painful uterine _____. A sudden change in the character or intensity of pain during labour may suggest a complication such as uterine _____.

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Danger Sign	Key Details
Severe Headache	May indicate pre-eclampsia or hypertensive disorder.
Vaginal Bleeding	Could signal miscarriage, placenta previa, or placental abruption.
Reduced Foetal Movement	Suggests possible foetal distress or intrauterine death.
Severe Abdominal Pain	May indicate ectopic pregnancy, abruption, or uterine rupture.
Rupture of Membranes	Risk of preterm labour, infection, or cord prolapse.

Box 2.1: Antenatal danger signs requiring urgent assessment.

Pilot questions 2.1

- Describe the common physiological symptoms of pregnancy. (Linked to SLO 2.1)
- Explain the clinical significance of foetal movement and its assessment. (Linked to SLO 2.1)
- List the antenatal danger signs that require urgent assessment. (Linked to SLO 2.2)
- Describe the typical symptoms signalling the onset of labour. (Linked to SLO 2.2)
- Describe the symptoms during labour that should prompt particular clinical attention. (Linked to SLO 2.2)

2.2 Gynaecological Symptoms

2.2.1 Menstrual and bleeding symptoms

Precise terminology is essential when describing menstrual symptoms: heavy menstrual bleeding describes excessive menstrual blood loss, dysmenorrhoea describes painful periods, oligomenorrhoea describes infrequent periods, and amenorrhoea describes the complete absence of periods, further subdivided into primary and secondary, with a clinician always clarifying precisely what a woman means by lay terms such as heavy or irregular rather than assuming a shared, common understanding.

Other patterns of abnormal bleeding carry specific clinical significance: intermenstrual bleeding, post-coital bleeding, and postmenopausal bleeding each warrant a distinct, structured approach to further assessment, with the specific pattern, timing, and quantity of bleeding

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reported by the woman directing subsequent investigation, and pregnancy testing an essential first step in any woman of reproductive age presenting with abnormal bleeding.

Fill in the blank: Excessive menstrual blood loss is termed heavy menstrual _____. _____ testing is an essential first step in any woman of reproductive age presenting with abnormal bleeding.

2.2.2 Pain, discharge, and other gynaecological symptoms

Pain is among the most common presenting gynaecological symptoms, requiring systematic characterisation using a structured framework such as SOCRATES, with specific attention to whether the pain is cyclical or acyclical, and dyspareunia, pain during intercourse, further characterised as superficial or deep, a distinction that meaningfully narrows the subsequent differential diagnosis.

Vaginal discharge is a common presenting symptom with a wide differential, from entirely physiological discharge to pathological discharge from infection or, less commonly, malignancy, with the colour, consistency, odour, and any associated symptoms such as itching or soreness each providing important diagnostic clues that should be specifically and systematically elicited during history taking.

Fill in the blank: Dyspareunia is further characterised as superficial or _____, a distinction that narrows the differential diagnosis. Vaginal discharge has a wide differential, from entirely physiological to pathological discharge from _____.

2.2.3 Pelvic mass and urinary and bowel symptoms

A pelvic mass or swelling may be noticed by the woman herself as abdominal distension or a palpable lump, with a broad differential diagnosis spanning gynaecological, gastrointestinal, and urological origin, requiring specific enquiry about its size, rate of growth, and any associated pain or other symptoms to help guide subsequent, appropriately targeted examination and investigation.

Urinary and bowel symptoms are frequently relevant in gynaecological presentations given the close anatomical relationship between the pelvic organs and the bladder and rectum, including urinary frequency, urgency, incontinence, and altered bowel habit, each requiring specific characterisation and routine, standard enquiry as part of a comprehensive gynaecological history rather than an optional addition considered only when volunteered spontaneously.

Fill in the blank: The differential diagnosis of a pelvic mass spans gynaecological, gastrointestinal, and _____ origin. Urinary and bowel symptoms should be routinely enquired about given the close anatomical relationship to the pelvic _____.

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Term	Definition
Heavy Menstrual Bleeding	Excessive menstrual blood loss that interferes with physical, social, or emotional quality of life.
Dysmenorrhoea	Painful menstruation, typically presenting as cramping lower abdominal pain during periods.
Dyspareunia	Pain experienced during sexual intercourse.
Intermenstrual Bleeding	Vaginal bleeding occurring between regular menstrual periods.
Postmenopausal Bleeding	Vaginal bleeding occurring after 12 months of amenorrhoea in a woman of menopausal age.

Table 2.2: Glossary of key gynaecological symptom terminology.

Pilot questions 2.2

1. Define heavy menstrual bleeding, dysmenorrhoea, oligomenorrhoea, and amenorrhoea. (Linked to SLO 2.3)
2. Distinguish intermenstrual, post-coital, and postmenopausal bleeding. (Linked to SLO 2.3)
3. Describe the SOCRATES framework as applied to gynaecological pain. (Linked to SLO 2.3)
4. Distinguish superficial from deep dyspareunia and its clinical significance. (Linked to SLO 2.3)
5. Describe the key characteristics to assess in a woman presenting with a pelvic mass. (Linked to SLO 2.3)

2.3 Clinical Signs in Obstetrics and Gynaecology

2.3.1 General and abdominal signs relevant to pregnancy

General examination in obstetric practice includes assessment for pallor (suggesting anaemia), oedema (a common, usually benign finding in later pregnancy, though severe or sudden oedema may suggest pre-eclampsia), and blood pressure measurement, a genuinely essential component

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of every antenatal visit given the recognised, potentially rapid progression of hypertensive disorders of pregnancy if unrecognised.

Abdominal examination in pregnancy assesses symphysio-fundal height (a measure of foetal growth), foetal lie and presentation as pregnancy advances, and auscultation of the foetal heart, each performed systematically and consistently at every antenatal contact to allow meaningful comparison over time and early recognition of any deviation from the expected, normal pattern of growth and wellbeing.

Fill in the blank: Severe or sudden oedema in pregnancy may suggest _____. Abdominal examination in pregnancy assesses symphysio-fundal height, foetal lie and presentation, and auscultation of the foetal _____.

2.3.2 General and abdominal signs relevant to gynaecology

General examination in gynaecological practice can reveal signs relevant to the presenting complaint: pallor may suggest anaemia from heavy menstrual bleeding, hirsutism or acne may suggest an underlying androgen excess disorder, and abnormal body mass index is relevant to menstrual disturbance, fertility, and the interpretation of many gynaecological presentations more broadly.

Abdominal examination in gynaecological practice follows the standard sequence of inspection, palpation, percussion, and auscultation, with specific attention to signs of peritonism, including guarding, rigidity, and rebound tenderness, and to whether a palpable mass can be felt 'from below', a key distinguishing feature helping identify a mass of pelvic rather than purely intra-abdominal origin.

Fill in the blank: Hirsutism or acne on general examination may suggest an underlying _____ excess disorder. A pelvic mass characteristically cannot be palpated from _____ on abdominal examination.

2.3.3 Pelvic signs on examination

Pelvic examination can reveal a range of specific signs relevant to gynaecological assessment, including cervical excitation tenderness, adnexal tenderness or a palpable adnexal mass, and abnormalities of the cervix itself, each carrying specific diagnostic significance that should be systematically sought and documented, while in obstetric practice, vaginal examination assesses cervical dilatation, effacement, and station of the presenting part once labour has begun.

Uterine size, shape, position, mobility, and tenderness assessed on bimanual examination provide important diagnostic information in the non-pregnant patient, illustrating how careful, systematic pelvic examination genuinely narrows the differential diagnosis well beyond what history alone can achieve, whether the clinical context is obstetric or gynaecological in nature.

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Fill in the blank: Cervical excitation tenderness on bimanual examination is suggestive of pelvic inflammatory disease or _____ pregnancy. In obstetric practice, vaginal examination in labour assesses cervical dilatation, effacement, and _____ of the presenting part.

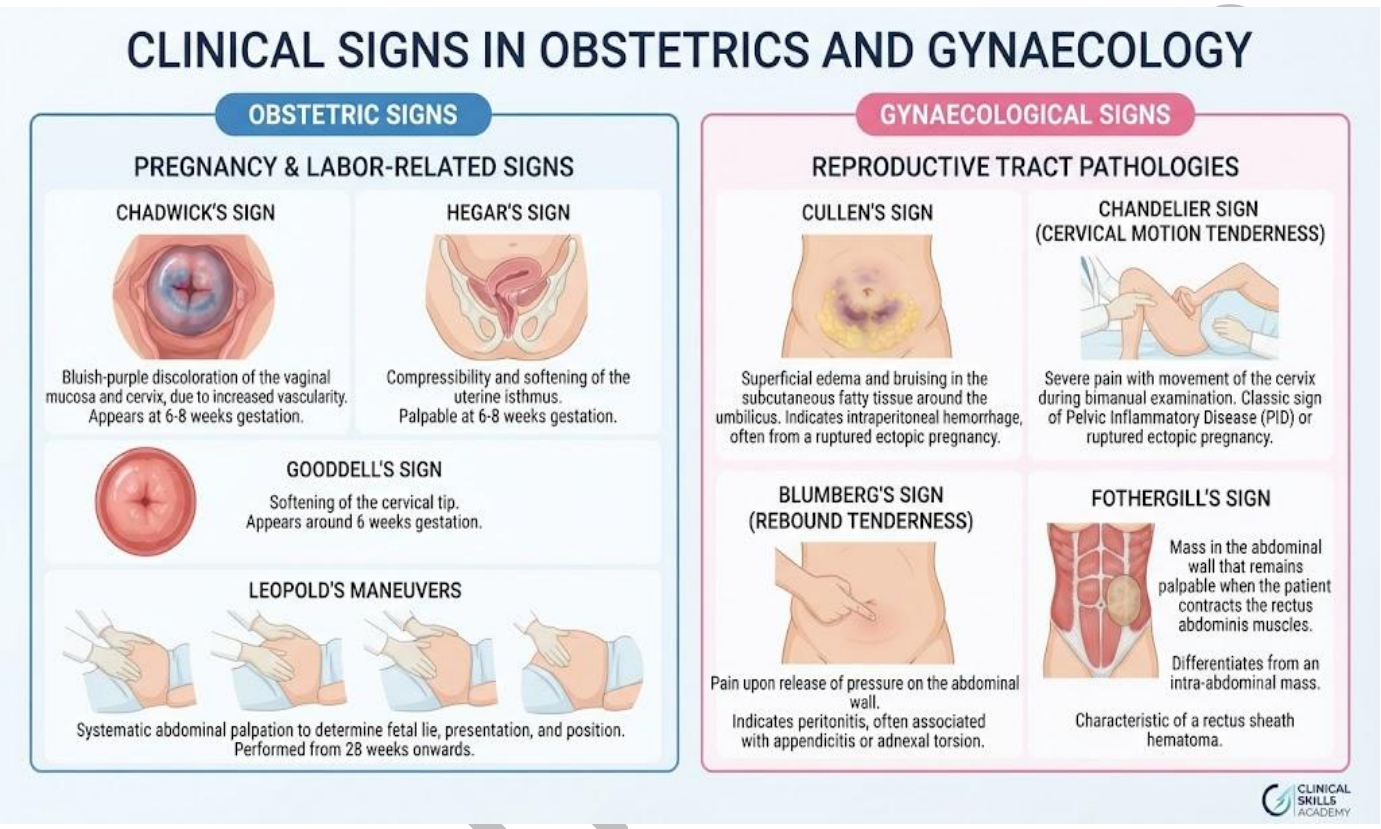

Figure 2.3: Clinical signs relevant to obstetric and gynaecological assessment.

Pilot questions 2.3

1. Describe the general clinical signs relevant to obstetric assessment. (Linked to SLO 2.4)
2. Describe the components of abdominal examination in pregnancy. (Linked to SLO 2.4)
3. Describe the general clinical signs relevant to gynaecological assessment. (Linked to SLO 2.4)
4. Describe cervical excitation tenderness and its clinical significance. (Linked to SLO 2.5)
5. Describe the findings assessed on bimanual examination of the uterus. (Linked to SLO 2.5)

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2.4 History Taking in Obstetrics and Gynaecology

2.4.1 Structure of the obstetric history

A comprehensive obstetric history follows a structured, chronological sequence, beginning with biodata and the presenting complaint, followed by history of the current pregnancy (gestational age, symptoms, and any complications identified), previous obstetric history (using the gravida and para system, with details of each previous pregnancy's outcome and complications), menstrual history, and past medical, surgical, drug, and social history.

Specific elements of the obstetric history include enquiry about foetal movement, any vaginal bleeding or loss of fluid, and, as pregnancy advances, symptoms suggestive of labour, alongside a structured review of any known risk factors for the specific complications discussed elsewhere in this broader curriculum, ensuring the history taken is genuinely comprehensive and relevant to the woman's current gestational stage.

Fill in the blank: The obstetric history includes previous obstetric history using the gravida and _____ system. Specific elements of the obstetric history include enquiry about foetal movement and any vaginal bleeding or loss of _____.

2.4.2 Structure of the gynaecological history

A comprehensive gynaecological history follows a similarly structured, chronological sequence, beginning with biodata and the presenting complaint, followed by history of presenting complaint, menstrual history, obstetric history (relevant even in a gynaecological consultation, given its relevance to future fertility and other considerations), sexual history, and past medical and surgical history.

The sexual history should be taken sensitively and without judgement, covering current sexual activity, contraceptive use, and, where clinically relevant, risk factors for sexually transmitted infection, with the specific depth and detail of questioning tailored to the presenting complaint and the woman's own comfort throughout the consultation.

Fill in the blank: The gynaecological history includes obstetric history even in a purely gynaecological consultation, given its relevance to future _____. The sexual history should be taken sensitively and without _____.

2.4.3 Systematic history taking technique

Systematic history taking technique combines open questioning at the outset of each section, allowing the woman to elaborate in her own words, with more specific, closed questions used to clarify particular details once the broad picture has been established, avoiding leading questions that might inadvertently suggest a particular answer or bias the information obtained, whether the history being taken is primarily obstetric or gynaecological in focus.

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Throughout history taking the clinician should actively summarise and reflect back key information periodically, both to confirm accurate understanding and to demonstrate active listening to the patient, while remaining alert to cues, verbal or non-verbal, that suggest an area of particular sensitivity or concern warranting a more gentle, unhurried approach.

Fill in the blank: Systematic history taking uses open questioning initially, followed by more specific, _____ questions to clarify detail. The clinician should periodically summarise and reflect back key information to confirm accurate _____.

Component	Obstetric History	Gynaecological History
Demographics	Age, parity, gravidity.	Age, menstrual status, parity.
Menstrual History	Relevant for dating pregnancy.	Detailed cycle length, flow, dysmenorrhoea, irregularities.
Pregnancy History	Previous pregnancies, outcomes, complications.	Not routinely included unless relevant to fertility.
Current Symptoms	Nausea, bleeding, pain, foetal movement.	Pelvic pain, abnormal bleeding, discharge, dyspareunia.
Medical/Surgical History	Chronic illnesses, prior caesarean sections.	Chronic illnesses, prior pelvic or abdominal surgery.
Family History	Hypertension, diabetes, obstetric complications.	Cancers (breast, ovarian, endometrial), genetic disorders.
Social History	Lifestyle, support systems, substance use.	Lifestyle, sexual history, contraception use.
Examination Focus	Fundal height, foetal heart, maternal vitals.	Pelvic exam, speculum findings, bimanual palpation.

Box 2.4: Comparison of the obstetric history and the gynaecological history structure.

Pilot questions 2.4

1. Describe the sequential structure of a comprehensive obstetric history. (Linked to SLO 2.6)
2. Describe the specific elements of the obstetric history relevant to the current pregnancy. (Linked to SLO 2.6)
3. Describe the sequential structure of a comprehensive gynaecological history. (Linked to SLO 2.7)
4. Describe the principles of taking a sensitive sexual history. (Linked to SLO 2.7)

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5. Describe the systematic technique used to combine open and closed questioning during history taking. (Linked to SLO 2.8)

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Series Summary

This Series has covered obstetric symptoms, including antenatal danger signs and symptoms in labour, followed by gynaecological symptoms, including menstrual, pain, and discharge symptoms. It went on to examine the clinical signs relevant to both obstetric and gynaecological examination, before concluding with the structure and technique of history taking in both obstetrics and gynaecology.

You should now be able to list and describe common obstetric symptoms, describe antenatal danger signs and symptoms in labour, list and describe common gynaecological symptoms, describe clinical signs relevant to both settings, and describe the structure and technique of obstetric and gynaecological history taking (Linked to SLOs 2.1 to 2.8).

Glossary of Terms

1. **Antenatal danger signs:** specific symptoms in pregnancy, such as severe headache or reduced foetal movement, requiring urgent assessment.
2. **Cervical excitation tenderness:** pain elicited on movement of the cervix during bimanual examination.
3. **Dyspareunia:** pain during sexual intercourse, classified as superficial or deep.
4. **Foetal movement:** perception of foetal activity by the mother, typically first felt around 18 to 20 weeks, an important marker of foetal wellbeing.
5. **Gravida and para:** a system recording the total number of pregnancies (gravida) and the number reaching viable gestation (para).
6. **Heavy menstrual bleeding:** excessive menstrual blood loss, previously termed menorrhagia.
7. **Show:** passage of blood-stained mucus from the cervix, a common early sign of the onset of labour.
8. **SOCRATES:** a mnemonic for systematically characterising pain: site, onset, character, radiation, associated symptoms, timing, exacerbating and relieving factors, and severity.
9. **Symphysio-fundal height:** a measurement from the pubic symphysis to the uterine fundus, used to assess fetal growth.
10. **Postmenopausal bleeding:** vaginal bleeding occurring twelve months or more after the last menstrual period.

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11. **Rupture of membranes:** breach of the amniotic sac releasing amniotic fluid, an antenatal danger sign when occurring before term or without labour.
12. **Peritonism:** clinical signs, including guarding and rigidity, suggesting irritation of the peritoneum.

Concept Check Questions [Series 2]

Objective questions

- Foetal movement is typically first perceived by the mother around _____ to 20 weeks of gestation.
- Severe headache with visual disturbance in pregnancy is suggestive of _____.
- Excessive menstrual blood loss is termed heavy menstrual _____.
- Severe or sudden oedema in pregnancy may suggest _____.
- The obstetric history includes previous obstetric history using the gravida and _____ system.

Short-answer questions

1. Describe the symptoms during labour that should prompt particular clinical attention. (Linked to SLO 2.2)
2. Distinguish superficial from deep dyspareunia and its clinical significance. (Linked to SLO 2.3)
3. Describe the components of abdominal examination in pregnancy. (Linked to SLO 2.4)
4. Describe cervical excitation tenderness and its clinical significance. (Linked to SLO 2.5)
5. Describe the specific elements of the obstetric history relevant to the current pregnancy. (Linked to SLO 2.6)

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Long-answer questions

6. Describe common obstetric symptoms, including antenatal danger signs and symptoms in labour. (Linked to SLO 2.1, SLO 2.2)
7. Describe common gynaecological symptoms, including menstrual, pain, and discharge symptoms. (Linked to SLO 2.3)
8. Describe the clinical signs relevant to obstetric and gynaecological assessment, including pelvic signs. (Linked to SLO 2.4, SLO 2.5)
9. Describe the structure of the obstetric history. (Linked to SLO 2.6)
10. Describe the structure of the gynaecological history and the systematic technique used in history taking. (Linked to SLO 2.7, SLO 2.8)

Answers to Concept Check Questions [Series 2]

Objective questions

11. 18.
12. Pre-eclampsia.
13. Bleeding.
14. Pre-eclampsia.
15. Para.

Short-answer questions

16. A sudden change in pain character, bleeding beyond a normal show, or reduced contraction strength or frequency should prompt reassessment.
17. Superficial dyspareunia relates to vulval or vaginal pathology; deep dyspareunia relates more to pelvic pathology such as endometriosis.
18. Symphysio-fundal height, foetal lie and presentation, and auscultation of the foetal heart.
19. It is suggestive of pelvic inflammatory disease or ectopic pregnancy, both important differentials for pelvic pain.
20. Gestational age, symptoms, complications identified, foetal movement, vaginal bleeding, and labour symptoms.

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Long-answer questions

21. **Basic response:** Obstetric symptoms include physiological changes and danger signs requiring urgent assessment, with labour signalled by regular painful contractions.

Value-added response: Foetal movement awareness and prompt recognition of danger signs are essential components of routine antenatal education.

22. **Basic response:** Gynaecological symptoms include menstrual disturbance, pain, discharge, and pelvic mass, each requiring precise terminology and systematic characterisation.

Value-added response: Precise terminology and clarification with the patient herself are essential, as lay and clinical usage of terms can differ substantially.

23. **Basic response:** General, abdominal, and pelvic signs together provide a comprehensive picture in both obstetric and gynaecological assessment.

Answers to Pilot Questions [Series 2]

Part 2.1

1. Nausea and vomiting, breast tenderness, urinary frequency, and mild breathlessness in later pregnancy.
2. Foetal movement is first felt around 18 to 20 weeks; reduced movement warrants prompt assessment as an early warning sign.
3. Severe headache, vaginal bleeding, reduced foetal movement, severe abdominal pain, and rupture of membranes.
4. Regular, increasingly painful contractions, often with a show or rupture of membranes.
5. A sudden change in pain character, bleeding beyond a show, or reduced contraction strength or frequency.

Part 2.2

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6. Heavy menstrual bleeding, dysmenorrhoea, oligomenorrhoea, and amenorrhoea, each precisely defined.
7. Intermenstrual occurs between periods, post-coital follows intercourse, and postmenopausal occurs after 12 months of amenorrhoea.
8. Site, onset, character, radiation, associated symptoms, timing, exacerbating and relieving factors, and severity.
9. Superficial dyspareunia suggests vulval or vaginal pathology; deep dyspareunia suggests pelvic pathology such as endometriosis.
10. Size, growth rate, associated pain, and whether the mass can be palpated from below on abdominal examination.

Part 2.3

11. Pallor, oedema, and blood pressure measurement, given the risk of hypertensive disorders of pregnancy.
12. Symphysio-fundal height, foetal lie and presentation, and auscultation of the foetal heart.
13. Pallor, hirsutism or acne, and abnormal body mass index, each providing diagnostic clues.
14. Pain on movement of the cervix, suggestive of pelvic inflammatory disease or ectopic pregnancy.
15. Uterine size, shape, position, mobility, and tenderness, each providing important diagnostic clues.

Part 2.4

1. Biodata, presenting complaint, current pregnancy history, previous obstetric history, menstrual history, and past medical history.
2. Foetal movement, vaginal bleeding or fluid loss, and symptoms suggestive of labour as pregnancy advances.
3. Biodata, presenting complaint, history of presenting complaint, menstrual, obstetric, sexual, and past medical history.

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4. Sensitively, without judgement, tailoring depth and detail to the presenting complaint and the woman's comfort.
5. Open questioning initially, followed by specific closed questions to clarify detail, avoiding leading questions.

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References and Attributions [Series 2]

Textual References

1. Cunningham, F. G., Leveno, K. J., Dashe, J. S. et al. (2022). Williams Obstetrics (26th ed.). McGraw Hill.
2. Hoffman, B. L., Schorge, J. O., Halvorson, L. M. et al. (2020). Williams Gynecology (4th ed.). McGraw Hill.
3. Talley, N. J. and O'Connor, S. (2017). Clinical Examination: A Systematic Guide to Physical Diagnosis (8th ed.). Elsevier.
4. World Health Organization (2016). WHO Recommendations on Antenatal Care for a Positive Pregnancy Experience. WHO Press.

Figures, Plates, Tables, and Boxes

1. Box 2.1: Antenatal danger signs requiring urgent assessment. AI-generated using the prompt: "Create a simple single-column reference box with an outside border titled Antenatal Danger Signs, listing key symptoms requiring urgent assessment. Clinical reference box style."
2. Table 2.2: Glossary of key gynaecological symptom terminology. AI-generated using the prompt: "Create a clean reference table titled Gynaecological Symptom Terminology, defining key terms used in clinical practice. Simple clinical reference table style with outside border."
3. Figure 2.3: Clinical signs relevant to obstetric and gynaecological assessment. AI-generated using the prompt: "Create a professional medical diagram titled Clinical Signs in Obstetrics and Gynaecology, showing obstetric and gynaecological signs in comparative panels. Clean clinical educational diagram style."
4. Box 2.4: Comparison of the obstetric history and the gynaecological history structure. AI-generated using the prompt: "Create a simple single-column reference box with an outside border titled Obstetric versus Gynaecological History Structure, comparing shared and distinct components. Clinical reference box style."

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Series 3: General Physical and Pelvic Examination Techniques

- **Part 3.1: Preparation, Inspection, and Vital Signs**
    - Sub Part 3.1.1: Preparing for obstetric and gynaecological examination
    - Sub Part 3.1.2: General inspection and vital signs
    - Sub Part 3.1.3: Examination of the breast
- **Part 3.2: Obstetric Abdominal Examination**
    - Sub Part 3.2.1: Inspection and palpation of the gravid abdomen
    - Sub Part 3.2.2: Leopold's manoeuvres and assessment of lie, presentation, and engagement
    - Sub Part 3.2.3: Auscultation of the foetal heart and estimation of foetal weight
- **Part 3.3: Gynaecological Abdominal and Systemic Examination**
    - Sub Part 3.3.1: Abdominal examination technique in gynaecology
    - Sub Part 3.3.2: Thyroid and endocrine examination relevant to gynaecology
    - Sub Part 3.3.3: Examination for lymphadenopathy and signs of systemic disease
- **Part 3.4: Pelvic Examination Technique**
    - Sub Part 3.4.1: Positioning, inspection, and speculum examination
    - Sub Part 3.4.2: Bimanual pelvic examination technique
    - Sub Part 3.4.3: Special examination techniques

Introduction

In the last Series, we explored the symptoms, signs, and history taking relevant to both obstetric and gynaecological presentation. A history, however carefully taken, is only ever half of the clinical picture. This Series turns to the other half: the practical skill of examination itself, from the general assessment that begins the moment a woman enters the room, through the specific technique of Leopold's manoeuvres in the pregnant abdomen, to the pelvic examination that so often lies at the heart of a definitive gynaecological diagnosis.

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The aim of this Series is to equip you with the knowledge and practical skill to perform a competent general physical examination, obstetric abdominal examination, gynaecological examination, and pelvic examination.

We shall commence this Series by examining preparation, general inspection, and vital sign assessment, together with breast examination. Next, we will consider obstetric abdominal examination, including Leopold's manoeuvres and foetal heart auscultation. Following that, our attention turns to gynaecological abdominal and systemic examination. Finally, we will conclude by examining pelvic examination technique, including bimanual examination and special techniques.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 3.1:** describe preparation for obstetric and gynaecological examination and demonstrate general inspection and vital sign assessment,
- **SLO 3.2:** demonstrate breast examination,
- **SLO 3.3:** demonstrate abdominal examination of the gravid patient, including Leopold's manoeuvres,
- **SLO 3.4:** describe auscultation of the foetal heart and estimation of foetal weight,
- **SLO 3.5:** demonstrate abdominal and systemic examination in gynaecology,
- **SLO 3.6:** describe positioning and demonstrate inspection and speculum examination technique,
- **SLO 3.7:** demonstrate bimanual pelvic examination technique, and
- **SLO 3.8:** describe rectal, rectovaginal, and special examination techniques, including intrapartum vaginal examination.

3.1 Preparation, Inspection, and Vital Signs

3.1.1 Preparing for obstetric and gynaecological examination

Thorough preparation before any obstetric or gynaecological examination includes obtaining informed consent, explaining the purpose and process of the examination in language the woman can genuinely understand, offering a chaperone regardless of examiner gender, and ensuring the

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examination room provides adequate privacy, appropriate lighting, and all necessary equipment readily available and in good working order before the woman is asked to undress.

The clinician's own preparation is equally important, including hand hygiene immediately before the examination begins, appropriate use of personal protective equipment, and a clear mental structure for the sequence of examination to be performed, whether the encounter is a routine antenatal assessment or a gynaecological examination, ensuring the assessment proceeds efficiently, systematically, and without unnecessary repetition once it is actually underway.

Fill in the blank: Thorough preparation includes obtaining informed consent and offering a chaperone regardless of examiner _____. The clinician's own preparation includes hand _____ immediately before the examination begins.

3.1.2 General inspection and vital signs

General inspection begins the moment the woman enters the consultation room, noting her general demeanour, apparent distress or discomfort, gait, and any obvious physical findings such as pallor, jaundice, or visible swelling, observations that frequently provide valuable diagnostic information available nowhere else in the examination, whether the setting is an antenatal or gynaecological clinic.

Vital sign measurement (pulse rate, blood pressure, temperature, and, where clinically indicated, respiratory rate and oxygen saturation) should be performed using correctly sized and calibrated equipment and appropriate technique, with blood pressure measurement of particular importance at every single antenatal visit given the recognised risk of hypertensive disorders of pregnancy developing at any stage.

Fill in the blank: General inspection begins the moment the woman enters the _____, noting demeanour, distress, and obvious physical findings. Blood pressure measurement is of particular importance at every antenatal visit given the risk of hypertensive _____.

3.1.3 Examination of the breast

Breast examination is a relevant component of general examination in both obstetric and gynaecological practice, with pregnancy itself causing physiological breast changes including enlargement and increased vascularity in preparation for lactation, and any woman presenting with a breast-related concern, whether pregnant or not, should undergo systematic inspection and palpation following the principles of triple assessment.

Any breast finding that raises concern, particularly a discrete, hard, irregular, or fixed lump, skin dimpling, or nipple retraction or bloody discharge, should prompt urgent referral for further imaging and, where indicated, biopsy, following the same red flag principles that apply throughout obstetric, gynaecological, and general clinical practice, regardless of whether the woman is currently pregnant.

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Fill in the blank: Pregnancy itself causes physiological breast changes including enlargement and increased _____ in preparation for lactation. Concerning breast findings should prompt urgent referral following _____ flag principles.

Step	Key Details
Obtain Consent	Explain the procedure clearly and ensure voluntary agreement.
Offer Chaperone	Provide a trained chaperone for all intimate examinations.
Ensure Privacy	Use a private room, appropriate draping, and maintain dignity.
Check Equipment	Confirm availability and functionality of instruments (speculum, gloves, swabs).
Hand Hygiene	Wash hands thoroughly before and after the examination.
Explain Steps	Describe what will happen during the exam to reduce anxiety.
Position Patient	Ensure comfort and correct positioning for safe examination.

Box 3.1: Essential preparation steps before obstetric and gynaecological examination.

Pilot questions 3.1

- Describe the essential preparation steps before an obstetric or gynaecological examination. (Linked to SLO 3.1)
- Describe the components of general inspection at the start of an examination. (Linked to SLO 3.1)
- Explain why blood pressure measurement is particularly important at every antenatal visit. (Linked to SLO 3.1)
- Describe the physiological breast changes of pregnancy. (Linked to SLO 3.2)
- List the breast findings that should prompt urgent referral. (Linked to SLO 3.2)

3.2 Obstetric Abdominal Examination

3.2.1 Inspection and palpation of the gravid abdomen

Inspection of the gravid abdomen notes the size and shape of the uterus, the presence of any surgical scars, striae gravidarum (stretch marks), and the linea nigra (a pigmented line commonly seen extending from the pubis towards the umbilicus in pregnancy), before proceeding to palpation, which begins with measurement of symphysio-fundal height, a simple, low-cost method of assessing foetal growth across pregnancy.

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Systematic palpation of the gravid abdomen should be performed gently but firmly, using the flat of the hand rather than the fingertips, working through the standard sequence of fundal palpation, lateral palpation, and pelvic palpation, with the woman positioned comfortably, typically semi-recumbent, and never placed flat on her back for a prolonged examination given the risk of aortocaval compression discussed elsewhere in this broader curriculum.

Fill in the blank: The pigmented line commonly seen extending from the pubis towards the umbilicus in pregnancy is called the linea _____. The gravid woman should never be placed flat on her back for a prolonged examination given the risk of _____ compression.

3.2.2 Leopold's manoeuvres and assessment of lie, presentation, and engagement

Leopold's manoeuvres provide a structured, four-step approach to abdominal palpation in later pregnancy: the first manoeuvre identifies which foetal pole occupies the fundus, the second identifies the position of the foetal back and limbs on each side of the abdomen, the third assesses the presenting part at the pelvic inlet, and the fourth, performed facing the woman's feet, further characterises the presenting part and assesses the degree of descent into the pelvis.

Together these manoeuvres allow determination of foetal lie (longitudinal, transverse, or oblique), presentation (cephalic or breech), and, in the third trimester, engagement of the presenting part, assessed clinically by abdominal palpation in fifths, with a head two-fifths or less palpable abdominally considered engaged, information genuinely essential for planning the remainder of antenatal care and, eventually, delivery.

Fill in the blank: The first Leopold's manoeuvre identifies which foetal pole occupies the _____. Engagement is assessed clinically by abdominal palpation in fifths, with a head two-fifths or less palpable considered _____.

3.2.3 Auscultation of the foetal heart and estimation of foetal weight

Auscultation of the foetal heart using a Pinard stethoscope or handheld Doppler device confirms foetal viability and, at each antenatal visit, provides reassurance of continued foetal wellbeing, with the normal foetal heart rate range and the specific point of maximal intensity, typically over the foetal back as determined by the preceding Leopold's manoeuvres, both relevant to correct, reliable technique.

Clinical estimation of foetal weight by abdominal palpation, while inherently less precise than ultrasound biometry, remains a valuable, low-cost, widely accessible skill, particularly in settings where ultrasound is not readily available, with symphysio-fundal height measurement, plotted against gestational age on a customised growth chart, providing a simple, complementary method of screening for growth abnormality across successive antenatal visits.

Fill in the blank: The foetal heart is best auscultated over the foetal _____, as determined by the preceding Leopold's manoeuvres. Symphysio-fundal height, plotted against gestational age, provides a simple method of screening for growth _____.

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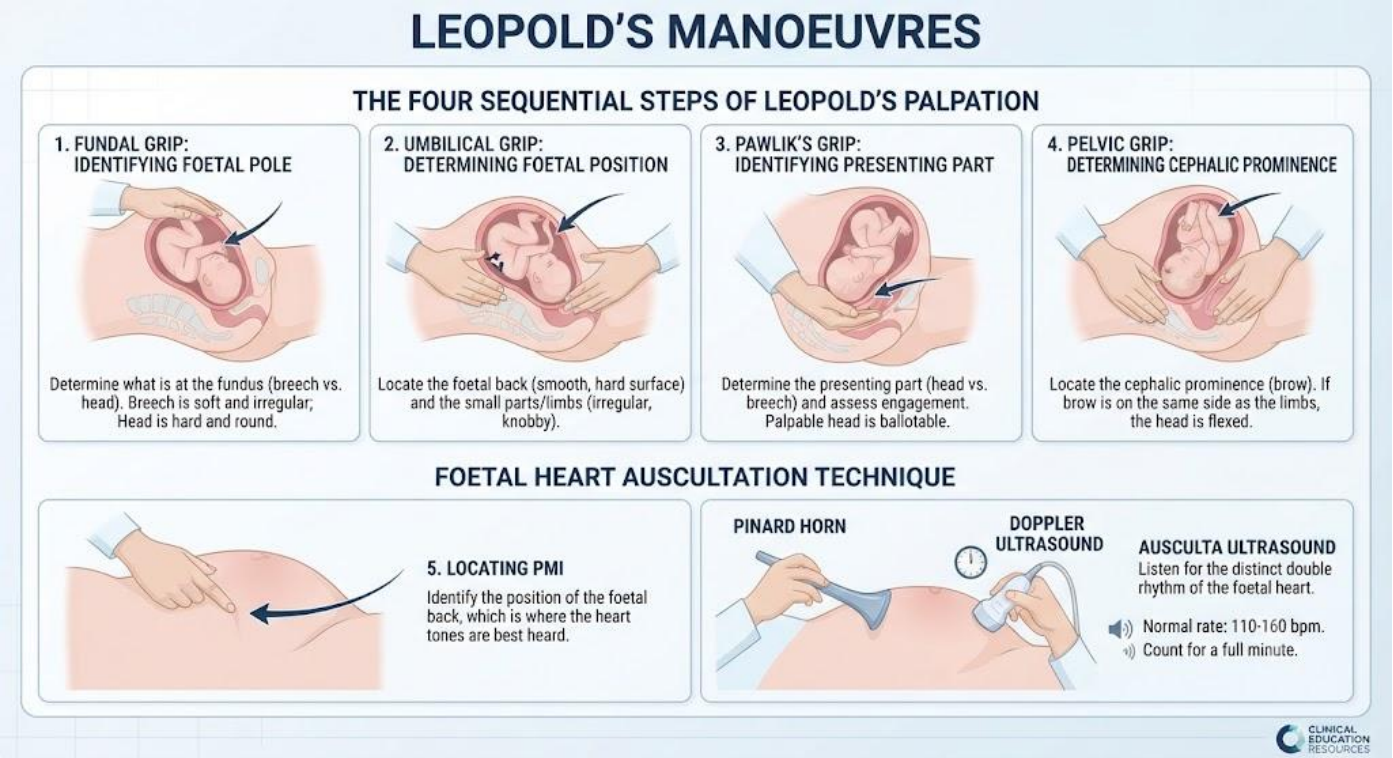

Figure 3.2: The four Leopold's manoeuvres and correct technique for foetal heart auscultation.

Pilot questions 3.2

1. Describe the components of inspection of the gravid abdomen. (Linked to SLO 3.3)
2. Explain why a pregnant woman should not be placed flat on her back for a prolonged examination. (Linked to SLO 3.3)
3. Describe the four Leopold's manoeuvres. (Linked to SLO 3.3)
4. Describe how engagement of the foetal presenting part is assessed clinically. (Linked to SLO 3.3)
5. Describe the technique and value of foetal heart auscultation and symphysio-fundal height measurement. (Linked to SLO 3.4)

3.3 Gynaecological Abdominal and Systemic Examination

3.3.1 Abdominal examination technique in gynaecology

Abdominal examination technique in the non-pregnant patient follows the standard sequence of inspection, palpation, percussion, and auscultation, with palpation beginning gently and

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superficially, away from any area of reported pain, before proceeding to deeper palpation, systematically assessing all four quadrants for tenderness, masses, and organomegaly.

Specific technique points relevant to gynaecological abdominal examination include assessing whether a pelvic mass can be palpated 'from below', a key distinguishing feature from an intra-abdominal mass of non-pelvic origin, and eliciting specific signs such as rebound tenderness and guarding, which, when present, suggest peritoneal irritation and warrant urgent further assessment.

Fill in the blank: Abdominal palpation should begin gently and superficially, away from any area of reported _____. A pelvic mass characteristically cannot be palpated from _____ on abdominal examination.

3.3.2 Thyroid and endocrine examination relevant to gynaecology

Thyroid examination is relevant in gynaecological assessment given the recognised association between thyroid dysfunction and menstrual irregularity, subfertility, and pregnancy complications, performed by inspection, palpation (typically from behind the seated patient), and, where indicated, auscultation for a bruit suggestive of hyperthyroidism.

Other endocrine signs relevant to gynaecological presentation include hirsutism, acne, and acanthosis nigricans, all of which may suggest an underlying androgen excess or metabolic disorder such as polycystic ovary syndrome, warranting specific, deliberate examination for these signs in any woman presenting with menstrual irregularity or subfertility.

Fill in the blank: Thyroid palpation is typically performed from _____ the seated patient. Acanthosis nigricans is a skin change associated with insulin _____.

3.3.3 Examination for lymphadenopathy and signs of systemic disease

Examination for lymphadenopathy relevant to gynaecological practice focuses particularly on the inguinal region, given its lymphatic drainage relationship with the vulva and lower vagina, assessed by careful palpation for size, consistency, tenderness, and mobility of any palpable nodes.

Signs of systemic disease that may be relevant to a gynaecological presentation include jaundice, peripheral oedema, and cachexia or unintentional weight loss, all of which should be actively sought as part of a comprehensive general examination, given their potential relevance to an underlying, more serious systemic diagnosis.

Fill in the blank: Inguinal lymphadenopathy is particularly relevant given its drainage relationship with the vulva and lower _____. Hard, fixed, non-tender lymphadenopathy raises particular concern for malignant _____.

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Finding	Clinical Significance
Thyroid Enlargement	May indicate thyroid disease affecting menstrual cycles, fertility, or pregnancy outcomes.
Hirsutism	Suggestive of hyperandrogenism, commonly seen in polycystic ovary syndrome (PCOS) or adrenal disorders.
Acanthosis Nigricans	Associated with insulin resistance, often linked to PCOS and metabolic syndrome.
Inguinal Lymphadenopathy	May indicate infection, sexually transmitted disease, or malignancy (e.g., vulvar or cervical cancer).

Table 3.3: Systemic examination findings relevant to gynaecological assessment.

Pilot questions 3.3

1. Describe the standard sequence and technique of abdominal examination in gynaecology. (Linked to SLO 3.5)
2. Describe the technique of thyroid examination and its relevance to gynaecology. (Linked to SLO 3.5)
3. Describe the endocrine signs relevant to a woman presenting with menstrual irregularity. (Linked to SLO 3.5)
4. Describe the assessment of inguinal lymphadenopathy in gynaecological practice. (Linked to SLO 3.5)
5. Describe the signs of systemic disease relevant to a gynaecological presentation. (Linked to SLO 3.5)

3.4 Pelvic Examination Technique

3.4.1 Positioning, inspection, and speculum examination

Positioning for pelvic examination is typically the dorsal (lithotomy) position, or, in some circumstances, the left lateral position, with the choice guided by the specific purpose of the examination and the woman's own comfort, followed by inspection of the external genitalia and speculum examination, using either a bivalve Cusco's speculum or a Sims' speculum, inserted gently with adequate lubrication.

Once the cervix is visualised it should be systematically assessed for colour, any visible lesion, discharge, or contact bleeding, with cervical cytology or swabs taken at this point if clinically indicated, before the speculum is gently withdrawn while continuing to observe the vaginal walls for any abnormality not visible during insertion.

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Fill in the blank: The typical position for pelvic examination is the dorsal or _____ position. Once visualised, the cervix should be systematically assessed for colour, lesion, discharge, and contact _____.

3.4.2 Bimanual pelvic examination technique

Bimanual examination is performed with two gloved, lubricated fingers of the examining hand inserted gently into the vagina while the other hand palpates the lower abdomen, first assessing the cervix for position, consistency, mobility, and any tenderness on movement, before palpating the uterus for size, shape, position, mobility, and tenderness, and finally the adnexa for any mass, fullness, or tenderness.

Systematic technique and a consistent sequence, always performed in the same order regardless of the presenting complaint, reduce the risk of an important finding being missed, and gentle, unhurried technique throughout, with continuous attention to the woman's comfort, remains essential even as the examiner's technical proficiency and confidence develop with increasing clinical experience.

Fill in the blank: Bimanual examination first assesses the cervix, then the _____, and finally the adnexa. A consistent examination sequence, performed the same way regardless of presenting complaint, reduces the risk of a missed _____.

3.4.3 Special examination techniques

Rectal and rectovaginal examination are indicated when assessing posterior pelvic pathology, such as suspected rectovaginal endometriosis or a mass in the pouch of Douglas, and in the staging assessment of pelvic malignancy, providing information not otherwise accessible on vaginal examination alone, while examination under anaesthesia is indicated when adequate assessment cannot be achieved in the awake patient because of pain, anxiety, or significant muscle guarding.

In obstetric practice specifically vaginal examination in labour, performed with sterile technique, assesses cervical dilatation, effacement, membrane status, and station of the presenting part, a specific, distinct application of pelvic examination technique requiring its own particular care given the intrapartum context and the direct clinical decisions this examination informs.

Fill in the blank: Rectal examination is specifically indicated in the assessment of suspected rectovaginal _____. Vaginal examination in labour assesses cervical dilatation, effacement, membrane status, and _____ of the presenting part.

Technique	Key Details
Bimanual Examination Sequence	Insert index and middle fingers into the vagina while the other hand palpates the abdomen; assess cervix, uterus size/position, adnexa, and pelvic tenderness.

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Technique	Key Details
Rectal Examination	Indicated for suspected rectal pathology, posterior pelvic masses, or when vaginal access is limited.
Rectovaginal Examination	Useful for assessing the rectovaginal septum, posterior uterine wall, and cul-de-sac masses.
Intrapartum Vaginal Examination	Performed during labour to assess cervical dilatation, effacement, station, presentation, and progress of labour.

Box 3.4: Sequence of bimanual examination and special examination techniques, including intrapartum assessment.

Pilot questions 3.4

1. Describe the positions used for pelvic examination. (Linked to SLO 3.6)
2. Describe the technique of speculum insertion and cervical assessment. (Linked to SLO 3.6)
3. Describe the technique and sequence of bimanual pelvic examination. (Linked to SLO 3.7)
4. Describe the indications for rectal and rectovaginal examination. (Linked to SLO 3.8)
5. Describe vaginal examination in labour and what it assesses. (Linked to SLO 3.8)

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Series Summary

This Series has covered preparation, general inspection, vital sign, and breast examination, followed by obstetric abdominal examination, including Leopold's manoeuvres and foetal heart auscultation. It went on to examine gynaecological abdominal and systemic examination, before concluding with pelvic examination technique, including bimanual examination and special techniques.

You should now be able to describe preparation and demonstrate general inspection, vital sign, and breast examination, demonstrate obstetric abdominal examination including Leopold's manoeuvres, describe foetal heart auscultation, demonstrate gynaecological abdominal and systemic examination, and demonstrate pelvic examination technique (Linked to SLOs 3.1 to 3.8).

Glossary of Terms

1. **Aortocaval compression:** compression of the aorta and inferior vena cava by the gravid uterus in the supine position.
2. **Bimanual examination:** pelvic examination using two gloved fingers in the vagina and the other hand on the abdomen.
3. **Leopold's manoeuvres:** a four-step structured approach to abdominal palpation in pregnancy, assessing lie, presentation, and engagement.
4. **Linea nigra:** a pigmented line commonly seen extending from the pubis towards the umbilicus in pregnancy.
5. **Pinard stethoscope:** a simple trumpet-shaped instrument used to auscultate the foetal heart.
6. **Striae gravidarum:** stretch marks occurring on the abdomen during pregnancy.
7. **Symphysio-fundal height:** a measurement from the pubic symphysis to the uterine fundus, used to assess foetal growth.
8. **Cervical excitation:** pain elicited on movement of the cervix during bimanual examination.
9. **Acanthosis nigricans:** a velvety, hyperpigmented skin change often at the neck or axillae, associated with insulin resistance.
10. **Vaginal examination in labour:** a sterile examination assessing cervical dilatation, effacement, membrane status, and station during labour.

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11. **Cusco's speculum:** a bivalve, self-retaining speculum, the most commonly used speculum in gynaecological examination.
12. **Pouch of Douglas:** the rectouterine pouch, the most dependent part of the female pelvic cavity, assessable on rectal examination.

Concept Check Questions [Series 3]

Objective questions

- Thorough preparation includes obtaining informed consent and offering a chaperone regardless of examiner _____.
- The pigmented line extending from the pubis towards the umbilicus in pregnancy is called the linea _____.
- The first Leopold's manoeuvre identifies which foetal pole occupies the _____.
- A pelvic mass characteristically cannot be palpated from _____ on abdominal examination.
- Bimanual examination first assesses the cervix, then the _____, and finally the adnexa.

Short-answer questions

1. Explain why blood pressure measurement is particularly important at every antenatal visit. (Linked to SLO 3.1)
2. Explain why a pregnant woman should not be placed flat on her back for a prolonged examination. (Linked to SLO 3.3)
3. Describe how engagement of the foetal presenting part is assessed clinically. (Linked to SLO 3.3)
4. Describe the endocrine signs relevant to a woman presenting with menstrual irregularity. (Linked to SLO 3.5)
5. Describe vaginal examination in labour and what it assesses. (Linked to SLO 3.8)

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Long-answer questions

6. Describe the preparation and general examination performed before pelvic assessment, including breast examination. (Linked to SLO 3.1, SLO 3.2)
7. Describe the technique of obstetric abdominal examination, including Leopold's manoeuvres. (Linked to SLO 3.3, SLO 3.4)
8. Describe the technique of gynaecological abdominal and systemic examination. (Linked to SLO 3.5)
9. Describe the positioning, inspection, and speculum technique used in pelvic examination. (Linked to SLO 3.6)
10. Describe the technique of bimanual pelvic examination and special examination techniques. (Linked to SLO 3.7, SLO 3.8)

Answers to Concept Check Questions [Series 3]

Objective questions

11. Gender.
12. Nigra.
13. Fundus.
14. Below.
15. Uterus.

Short-answer questions

16. Hypertensive disorders of pregnancy can develop and progress rapidly at any stage, making consistent screening essential.
17. This risks aortocaval compression, reducing venous return and cardiac output from pressure on the aorta and vena cava.
18. By abdominal palpation in fifths, with a head two-fifths or less palpable abdominally considered engaged.

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19. Hirsutism, acne, and acanthosis nigricans, suggesting androgen excess or an underlying metabolic disorder.

20. A sterile examination assessing cervical dilatation, effacement, membrane status, and station of the presenting part during labour.

Long-answer questions

21. **Basic response:** Preparation for examination includes consent, chaperone, and equipment checks, followed by general inspection, vital signs, and breast examination where relevant.

Value-added response: Breast changes are physiological in pregnancy, but concerning findings should still prompt urgent referral following the same red flag principles applied generally.

22. **Basic response:** Obstetric abdominal examination includes inspection, symphysio-fundal height measurement, and Leopold's manoeuvres to assess lie, presentation, and engagement.

Value-added response: Foetal heart auscultation and symphysio-fundal height together provide simple, low-cost, complementary methods of assessing foetal wellbeing and growth.

23. **Basic response:** Gynaecological examination follows the standard abdominal sequence, alongside thyroid, endocrine, and lymph node assessment relevant to the presenting complaint.

Value-added response: A pelvic mass cannot be palpated from below, a key distinguishing feature from an intra-abdominal mass of non-pelvic origin.

24. **Basic response:** Pelvic examination begins with positioning and inspection, followed by speculum examination to visualise the cervix and vaginal walls.

Value-added response: The Cusco's and Sims' specula each suit different positions and purposes, with gentle technique minimising discomfort.

25. **Basic response:** Bimanual examination assesses the cervix, uterus, and adnexa in a consistent sequence, with rectal and rectovaginal examination reserved for specific indications.

Value-added response: Vaginal examination in labour is a distinct, sterile application of pelvic examination technique, directly informing decisions about labour progress.

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Answers to Pilot Questions [Series 3]

Part 3.1

1. Informed consent, explanation, chaperone offer, and ensuring privacy and equipment are ready before the woman undresses.
2. Demeanour, distress, gait, and obvious physical findings such as pallor or jaundice noted from the moment she enters.
3. Hypertensive disorders of pregnancy can develop and progress rapidly at any stage, making consistent screening essential.
4. Enlargement and increased vascularity in preparation for lactation.
5. Hard, irregular, fixed lump, skin dimpling, and nipple retraction or bloody discharge.

Part 3.2

6. Uterine size and shape, surgical scars, striae gravidarum, and the linea nigra.
7. This risks aortocaval compression, reducing venous return and cardiac output.
8. First identifies the fundal pole, second the foetal back and limbs, third the presenting part, fourth further characterises the presenting part and descent.
9. By abdominal palpation in fifths, with a head two-fifths or less palpable considered engaged.
10. Auscultation over the foetal back confirms wellbeing; symphysio-fundal height screens for growth abnormality.

Part 3.3

11. Inspection, palpation, percussion, and auscultation, with palpation starting gently and away from any reported pain.
12. Inspection for goitre, palpation from behind for size, consistency, and nodularity, and auscultation for a bruit if indicated.

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13. Hirsutism, acne, and acanthosis nigricans, suggesting androgen excess or an underlying metabolic disorder.
14. Careful palpation for size, consistency, tenderness, and mobility, with hard fixed nodes of particular concern.
15. Jaundice, peripheral oedema, and cachexia or unintentional weight loss, each warranting further assessment.

Part 3.4

1. Dorsal (lithotomy) or left lateral position, chosen according to the purpose of the examination and patient comfort.
2. Gentle insertion with lubrication along the vaginal axis, opened slowly, then systematic assessment of the cervix and vaginal walls.
3. Two gloved fingers assess the cervix, then the uterus, then the adnexa, with the other hand on the abdomen.
4. Suspected rectovaginal endometriosis, a mass in the pouch of Douglas, and staging assessment of pelvic malignancy.
5. A sterile examination assessing cervical dilatation, effacement, membrane status, and station during labour.

References and Attributions [Series 3]

Textual References

1. Cunningham, F. G., Leveno, K. J., Dashe, J. S. et al. (2022). Williams Obstetrics (26th ed.). McGraw Hill.
2. Hoffman, B. L., Schorge, J. O., Halvorson, L. M. et al. (2020). Williams Gynecology (4th ed.). McGraw Hill.
3. Talley, N. J. and O'Connor, S. (2017). Clinical Examination: A Systematic Guide to Physical Diagnosis (8th ed.). Elsevier.

lanetonline.com

4. Royal College of Obstetricians and Gynaecologists (2022). Gynaecological Examination: Guidance for Clinicians. RCOG Press.

Figures, Plates, Tables, and Boxes

1. Box 3.1: Essential preparation steps before obstetric and gynaecological examination. AI-generated using the prompt: "Create a simple single-column reference box with an outside border titled Preparation for Examination, listing essential preparation steps. Clinical reference box style."
2. Figure 3.2: The four Leopold's manoeuvres and correct technique for foetal heart auscultation. AI-generated using the prompt: "Create a professional medical diagram titled Leopold's Manoeuvres, showing the four sequential steps of abdominal palpation with hand positions and foetal heart auscultation technique. Clean clinical educational diagram style."
3. Table 3.3: Systemic examination findings relevant to gynaecological assessment. AI-generated using the prompt: "Create a clean reference table titled Systemic Examination Findings Relevant to Gynaecology, listing findings and clinical significance. Simple clinical reference table style with outside border."
4. Box 3.4: Sequence of bimanual examination and special examination techniques, including intrapartum assessment. AI-generated using the prompt: "Create a simple single-column reference box with an outside border titled Pelvic Examination Techniques, listing bimanual sequence and special technique indications. Clinical reference box style."

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Series 4: Clinic-Based Procedures in Obstetrics and Gynaecology

- **Part 4.1: Cervical Cytology and Screening**
    - Sub Part 4.1.1: Pap smear technique and indications
    - Sub Part 4.1.2: Interpretation and follow-up of cervical cytology
    - Sub Part 4.1.3: HPV testing and screening programmes
- **Part 4.2: Microbiological Sampling**
    - Sub Part 4.2.1: High vaginal swab technique
    - Sub Part 4.2.2: Endocervical and other swabs
    - Sub Part 4.2.3: Interpretation of microbiological results
- **Part 4.3: Cryosurgery and Other Diagnostic Procedures**
    - Sub Part 4.3.1: Principles and technique of cervical cryosurgery
    - Sub Part 4.3.2: Endometrial sampling (pipelle biopsy)
    - Sub Part 4.3.3: Vulval and cervical biopsy
- **Part 4.4: Obstetric Clinic-Based Procedures**
    - Sub Part 4.4.1: Antenatal clinic-based procedures
    - Sub Part 4.4.2: Membrane sweeping
    - Sub Part 4.4.3: Preparing and consenting patients for clinic-based procedures

Introduction

In the last Series, we explored general physical and pelvic examination techniques. Many obstetric and gynaecological consultations extend beyond examination alone into the practical procedures performed within the clinic itself: a cervical smear, a swab to identify infection, a small tissue biopsy, or, in the antenatal setting, membrane sweeping and routine booking investigations. This Series turns to these clinic-based procedures, the practical, hands-on skills that so often complete an obstetric or gynaecological assessment within a single outpatient visit.

The aim of this Series is to equip you with the knowledge and practical skill to perform and interpret common clinic-based obstetric and gynaecological procedures.

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We shall commence this Series by examining cervical cytology and screening, including the role of HPV testing. Next, we will consider microbiological sampling, including high vaginal and endocervical swabs. Following that, our attention turns to cryosurgery and other gynaecological diagnostic procedures. Finally, we will conclude by examining obstetric clinic-based procedures, including membrane sweeping and antenatal investigations.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 4.1:** demonstrate pap smear technique and describe cervical screening,
- **SLO 4.2:** describe the interpretation and follow-up of cervical cytology and the role of HPV testing,
- **SLO 4.3:** demonstrate high vaginal swab and other microbiological sampling technique,
- **SLO 4.4:** describe cryosurgery and other gynaecological diagnostic clinic procedures,
- **SLO 4.5:** describe endometrial, vulval, and cervical biopsy techniques,
- **SLO 4.6:** describe antenatal clinic-based procedures and point-of-care testing,
- **SLO 4.7:** describe membrane sweeping, and
- **SLO 4.8:** describe the principles of preparing and consenting patients for clinic-based procedures.

4.1 Cervical Cytology and Screening

4.1.1 Pap smear technique and indications

Cervical cytology (Pap smear) is a screening test for pre-malignant and malignant change of the cervix, performed by sampling cells from the transformation zone, the site where columnar and squamous epithelium meet and where the great majority of cervical dysplasia and carcinoma arise, using a specifically designed sampling device rotated against the cervix under direct visualisation with a speculum in place.

Correct technique requires clear visualisation of the entire cervix before sampling, adequate rotation of the sampling device to capture cells from the full circumference of the transformation zone, and prompt transfer of the sample into an appropriate liquid-based cytology medium, with technique errors being a recognised and largely avoidable cause of an inadequate or unsatisfactory result requiring the test to be repeated.

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Fill in the blank: Cervical cytology samples cells from the transformation zone, where columnar and squamous _____ meet. Technique errors are a recognised and largely avoidable cause of an inadequate or _____ result.

4.1.2 Interpretation and follow-up of cervical cytology

Cervical cytology results are reported using a standardised classification system describing the degree of any dyskaryosis identified, each carrying a different implication for the likely presence of underlying cervical intraepithelial neoplasia and, correspondingly, a different recommended follow-up pathway, ranging from routine recall at the standard screening interval to prompt referral for colposcopy.

Clear, structured communication of cytology results to the patient, including what the result means, what happens next, and, where relevant, an honest acknowledgement of any uncertainty, is an essential component of the screening process, as an unclear or poorly explained abnormal result can cause considerable, sometimes disproportionate anxiety, and inadequate understanding may lead to a woman failing to attend recommended follow-up.

Fill in the blank: Cervical cytology results describe the degree of dyskaryosis, guiding a recommended _____ pathway. Clear communication of results is essential, as an unclear result can cause disproportionate _____.

4.1.3 HPV testing and screening programmes

High-risk human papillomavirus (HPV) testing is now used as the primary screening test in many modern cervical screening programmes, given the established causal role of persistent high-risk HPV infection in cervical carcinogenesis, with cytology then performed as a secondary, triage test only in women who test HPV positive, an approach shown to be more sensitive for detecting significant cervical disease than cytology alone.

Structured screening programmes define the age at which screening begins, the interval between routine screening tests, and the age at which screening ceases, based on population-level evidence of risk and benefit, and understanding the rationale behind these programme parameters helps clinicians explain and encourage genuine engagement with screening among the women in their care.

Fill in the blank: High-risk HPV testing is used as the primary test in many modern screening programmes, with cytology as a secondary _____ test. HPV-primary screening is more sensitive for detecting significant cervical disease than _____ alone.

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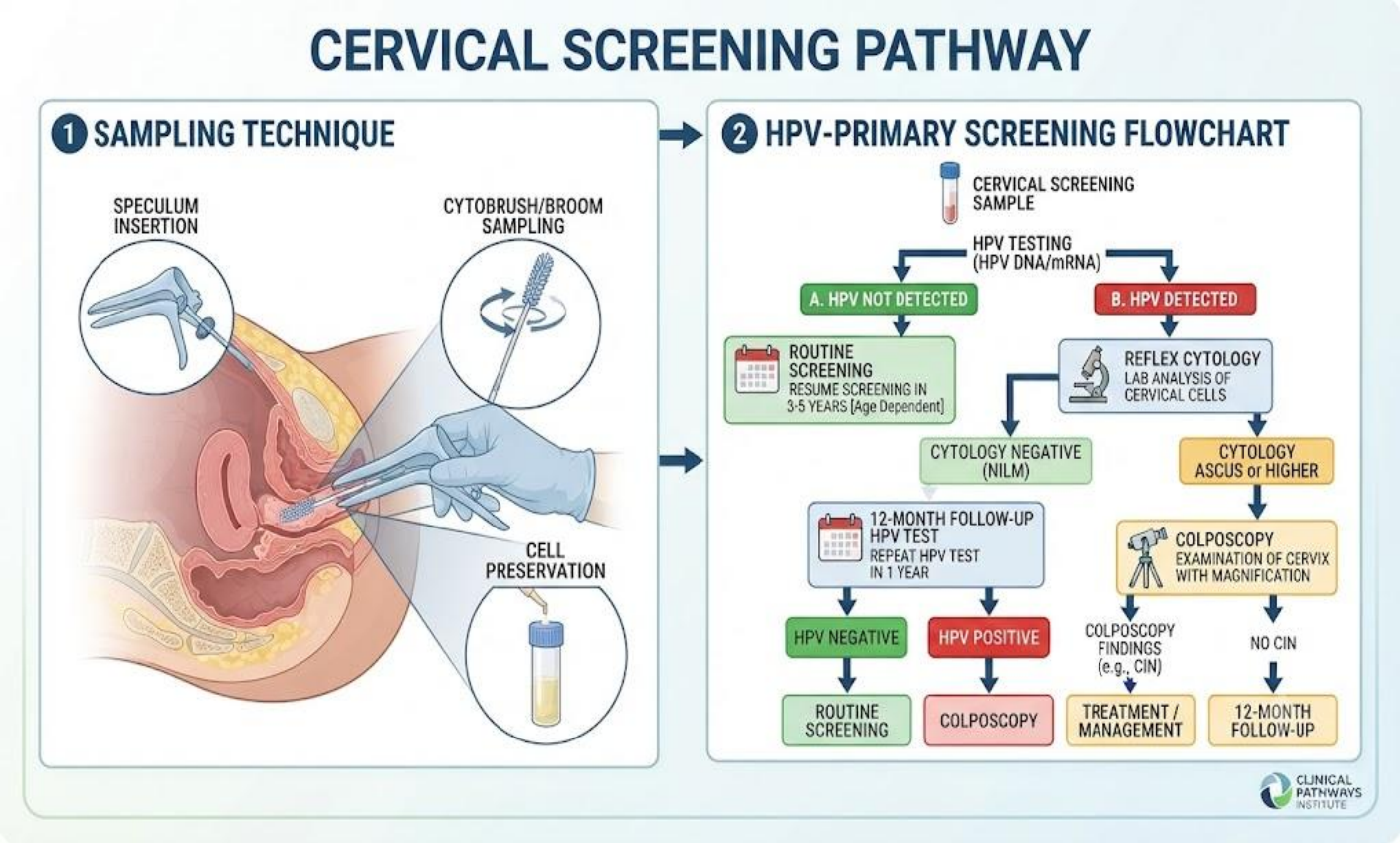

Figure 4.1: Cervical cytology sampling technique and the HPV-primary screening pathway.

Pilot questions 4.1

- Describe the technique of taking a cervical cytology sample. (Linked to SLO 4.1)
- Explain why the transformation zone is specifically targeted during cervical sampling. (Linked to SLO 4.1)
- Describe the classification used to report cervical cytology results. (Linked to SLO 4.2)
- Explain why clear communication of cytology results to the patient is essential. (Linked to SLO 4.2)
- Describe the role of HPV testing in modern cervical screening programmes. (Linked to SLO 4.2)

4.2 Microbiological Sampling

4.2.1 High vaginal swab technique

A high vaginal swab is taken to identify infective causes of abnormal vaginal discharge or other suggestive symptoms, obtained under direct visualisation with a speculum in place, sampling from the posterior fornix or lateral vaginal walls where discharge tends to pool, using a sterile

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swab that is then placed into appropriate transport medium and labelled clearly before prompt transfer to the laboratory.

Correct technique avoids contamination of the swab by external skin or vulval flora, which could confound the microbiological result, and the swab should be taken before any other examination manoeuvre or treatment that might dilute or otherwise alter the sample, such as application of lubricant gel, which can itself interfere with accurate microbiological culture.

Fill in the blank: A high vaginal swab samples from the posterior fornix or lateral vaginal walls where discharge tends to _____. The swab should be taken before application of lubricant gel, which can interfere with accurate microbiological _____.

4.2.2 Endocervical and other swabs

Endocervical swabs are specifically indicated when chlamydia or gonorrhoea infection is suspected, obtained by inserting a swab a short distance into the endocervical canal and rotating gently to sample columnar epithelial cells, a technique distinct from the high vaginal swab, which samples the vaginal walls rather than the cervix itself.

Nucleic acid amplification tests (NAATs) have increasingly replaced traditional culture-based methods for detecting chlamydia and gonorrhoea, offering considerably higher sensitivity, and can often be performed on a self-collected vulvovaginal swab or first-catch urine sample, improving accessibility and acceptability of screening for sexually transmitted infection.

Fill in the blank: Endocervical swabs sample columnar epithelial cells and are specifically indicated when _____ or gonorrhoea infection is suspected. Nucleic acid amplification tests offer considerably higher _____ than traditional culture-based methods.

4.2.3 Interpretation of microbiological results

Interpreting microbiological results requires understanding that a positive result does not always equate to clinically significant infection, as some organisms identified may represent normal commensal flora rather than genuine pathogens, meaning results should always be interpreted in the context of the woman's symptoms and examination findings rather than treated in complete isolation.

A negative microbiological result similarly does not entirely exclude infection, particularly if the sample was taken incorrectly, too soon after exposure for the organism to be reliably detectable, or after recent antibiotic use, and a woman with a strongly suggestive clinical picture but a negative test result may still warrant empirical treatment or repeat testing.

Fill in the blank: A positive microbiological result does not always equate to clinically significant infection, as some organisms may represent normal _____ flora. A woman with a strongly suggestive clinical picture but a negative test may still warrant _____ treatment.

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Comparison Aspect	Details
Sampling Site	High Vaginal Swab: Upper vaginal wall or posterior fornix. Endocervical Swab: Endocervical canal at the cervical os.
Target Organisms	High Vaginal Swab: Candida species, bacterial vaginosis organisms, Trichomonas vaginalis. Endocervical Swab: Chlamydia trachomatis, Neisseria gonorrhoeae, Mycoplasma genitalium.
Technique	High Vaginal Swab: Sterile swab inserted into the vagina, rotated against the wall or fornix. Endocervical Swab: Speculum inserted, swab placed into endocervical canal and rotated to collect epithelial cells and organisms.

Table 4.2: Comparison of high vaginal and endocervical swab technique and indications.

Pilot questions 4.2

1. Describe the technique and purpose of a high vaginal swab. (Linked to SLO 4.3)
2. Explain why the swab should be taken before application of lubricant gel. (Linked to SLO 4.3)
3. Distinguish endocervical swab technique from high vaginal swab technique. (Linked to SLO 4.3)
4. Describe the advantages of nucleic acid amplification testing. (Linked to SLO 4.3)
5. Explain why microbiological results should be interpreted in clinical context rather than in isolation. (Linked to SLO 4.3)

4.3 Cryosurgery and Other Diagnostic Procedures

4.3.1 Principles and technique of cervical cryosurgery

Cryosurgery destroys abnormal cervical tissue by rapid freezing, using a metal probe cooled by a refrigerant gas applied directly to the tissue surface, causing ice crystal formation, cellular dehydration, and disruption of the cell membrane, resulting in tissue necrosis and, over subsequent weeks, replacement by new, healthy epithelium, generally performed as an outpatient clinic-based procedure with minimal analgesia required.

Cryosurgery is indicated for confirmed low-grade cervical intraepithelial neoplasia, or selected high-grade disease where the entire lesion and transformation zone are fully visible and small

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enough for the cryoprobe to adequately cover, making it unsuitable for lesions extending into the endocervical canal or those with any suspicion of invasive disease, both of which require excisional treatment instead.

Fill in the blank: Cryosurgery causes ice crystal formation, cellular dehydration, and disruption of the cell _____, resulting in tissue necrosis. Cryosurgery is unsuitable for lesions extending into the _____ canal beyond direct visualisation.

4.3.2 Endometrial sampling (pipelle biopsy)

Endometrial sampling by pipelle biopsy is an outpatient procedure used to investigate abnormal uterine bleeding, particularly postmenopausal bleeding, in which a narrow, flexible plastic device is passed through the cervix into the uterine cavity, and a small tissue sample obtained by gentle suction as the device is withdrawn and rotated, providing histological material without the need for cervical dilatation or anaesthesia in the great majority of cases.

Limitations of pipelle biopsy include a recognised false-negative rate, as the sample obtained represents only a portion of the endometrial cavity, meaning persistent or recurrent abnormal bleeding despite a normal pipelle result should prompt further investigation, typically with hysteroscopy, rather than automatic reassurance.

Fill in the blank: Pipelle biopsy obtains a tissue sample by gentle _____ as the device is withdrawn and rotated. Persistent bleeding despite a normal pipelle result should prompt further investigation with _____.

4.3.3 Vulval and cervical biopsy

Vulval biopsy is indicated for any persistent, unexplained vulval lesion, or one with features suspicious for malignancy, performed under local anaesthesia using a punch biopsy technique, with the specific site selected to include both the abnormal area and, where possible, adjacent normal tissue to aid histological comparison and interpretation.

Cervical biopsy (either a targeted punch biopsy taken during colposcopy, or a larger excisional biopsy such as loop electrosurgical excision procedure) is performed to obtain histological confirmation of suspected cervical dysplasia or malignancy, with the specific technique chosen according to the clinical suspicion and the extent of the visible or suspected abnormality.

Fill in the blank: Vulval biopsy is performed under local anaesthesia using a _____ biopsy technique. Cervical biopsy may be a targeted punch biopsy during colposcopy or a larger _____ biopsy such as LEEP.

Procedure	Indication
Cryosurgery	Used for treatment of cervical intraepithelial neoplasia (CIN) and precancerous cervical lesions.

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Procedure	Indication
Pipelle Biopsy	Performed to sample endometrial tissue for evaluation of abnormal uterine bleeding or suspected endometrial pathology.
Vulval Biopsy	Indicated for suspicious vulval lesions to rule out malignancy or confirm diagnosis of dermatoses.
Cervical Biopsy	Conducted to assess abnormal cervical cytology or colposcopic findings suggestive of precancerous or malignant changes.

Box 4.3: Summary of gynaecological diagnostic clinic procedures and their indications.

Pilot questions 4.3

1. Describe the mechanism and technique of cervical cryosurgery. (Linked to SLO 4.4)
2. Describe the indications and limitations of cervical cryosurgery. (Linked to SLO 4.4)
3. Describe the technique and indication for pipelle biopsy. (Linked to SLO 4.5)
4. Explain the limitations of pipelle biopsy and when further investigation is indicated. (Linked to SLO 4.5)
5. Compare targeted punch biopsy and excisional cervical biopsy. (Linked to SLO 4.5)

4.4 Obstetric Clinic-Based Procedures

4.4.1 Antenatal clinic-based procedures

Routine antenatal clinic-based procedures include venous blood sampling for booking investigations (full blood count, blood group and rhesus status, haemoglobin genotype, and infection screening), urinalysis at every visit to screen for proteinuria and glycosuria, and, where indicated, glucose tolerance testing, each performed according to a structured, standardised protocol to ensure consistency and accuracy across successive antenatal contacts.

Point-of-care testing (urine pregnancy testing, urinalysis, and rapid glucose or haemoglobin testing) provides immediate results within the antenatal consultation itself, allowing real-time clinical decision-making without the delay associated with sending a sample to a central laboratory, particularly valuable in a busy antenatal clinic setting where prompt results genuinely support efficient, same-visit clinical decision-making.

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Fill in the blank: Routine antenatal clinic-based procedures include venous blood sampling for booking investigations and _____ at every visit. Point-of-care testing provides immediate results within the consultation, avoiding the delay of a central _____.

4.4.2 Membrane sweeping

Membrane sweeping (digital separation of the chorionic membrane from the lower uterine segment during vaginal examination, stimulating local prostaglandin release) is a simple, low-risk clinic-based procedure offered from around 40 to 41 weeks of gestation to reduce the likelihood of formal induction of labour being required, performed during a routine vaginal examination without any special equipment.

The procedure can cause discomfort and light vaginal bleeding or spotting, which should be explained to the woman beforehand as an expected, generally self-limiting effect, and evidence supports its effectiveness in modestly reducing the incidence of post-term pregnancy and the need for subsequent formal induction, making it a genuinely valuable, low-cost intervention offered as a routine component of late antenatal care.

Fill in the blank: Membrane sweeping stimulates local _____ release by digital separation of the chorionic membrane. The procedure can cause discomfort and light vaginal bleeding, which should be explained as an expected, generally self-_____ effect.

4.4.3 Preparing and consenting patients for clinic-based procedures

Preparing a patient for any clinic-based procedure, whether obstetric or gynaecological, includes clear explanation of the indication, what the procedure will involve, expected discomfort and how it will be managed, likely duration, and anticipated recovery, delivered in advance of the procedure wherever practically possible, allowing the woman genuine time to consider the information and ask questions before providing consent.

Informed consent for a clinic-based procedure specifically covers the procedure's purpose, the alternatives available, including declining the procedure altogether, and the specific risks relevant to that particular procedure, with careful, contemporaneous documentation of the consent discussion and the procedure itself an essential component of safe, professional clinic-based practice in both obstetric and gynaecological settings.

Fill in the blank: Preparing a patient for a clinic-based procedure includes explanation of indication, expected discomfort, duration, and anticipated _____. Informed consent covers the procedure's purpose, alternatives, and specific _____ relevant to that procedure.

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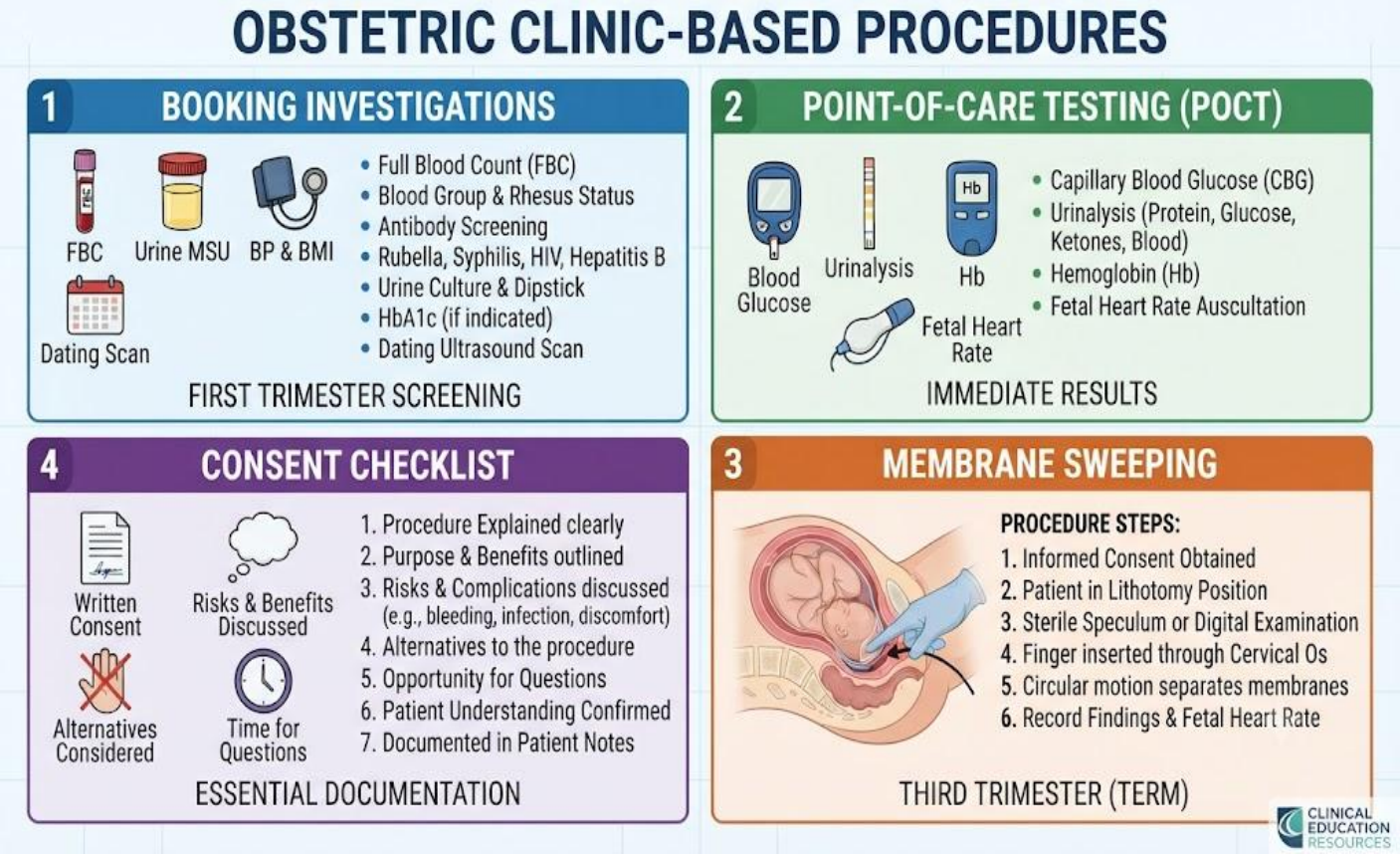

Figure 4.4: Antenatal clinic-based procedures, membrane sweeping, and the procedural consent checklist.

Pilot questions 4.4

1. Describe the routine antenatal clinic-based procedures performed during pregnancy. (Linked to SLO 4.6)
2. Describe the value of point-of-care testing in the antenatal clinic. (Linked to SLO 4.6)
3. Describe the technique and purpose of membrane sweeping. (Linked to SLO 4.7)
4. Describe the expected effects of membrane sweeping that should be explained to the woman beforehand. (Linked to SLO 4.7)
5. Describe the components of preparing and consenting a patient for a clinic-based procedure. (Linked to SLO 4.8)

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Series Summary

This Series has covered cervical cytology and screening, including the role of HPV testing, followed by microbiological sampling, including high vaginal and endocervical swabs. It went on to examine cryosurgery and other gynaecological diagnostic procedures, before concluding with obstetric clinic-based procedures, including membrane sweeping and antenatal investigations.

You should now be able to demonstrate pap smear technique and describe cervical screening, describe the interpretation and follow-up of cytology and HPV testing, demonstrate microbiological sampling technique, describe cryosurgery and biopsy procedures, describe antenatal clinic-based procedures, describe membrane sweeping, and describe the principles of patient preparation and consent (Linked to SLOs 4.1 to 4.8).

Glossary of Terms

1. **Colposcopy:** direct magnified visualisation of the cervix, used to further assess an abnormal cervical cytology result.
2. **Cryotherapy:** destruction of abnormal cervical tissue by freezing, a clinic-based treatment for cervical intraepithelial neoplasia.
3. **Dyskaryosis:** abnormal nuclear changes identified on cervical cytology.
4. **High vaginal swab:** a swab sample taken from the posterior fornix or lateral vaginal walls to identify infective causes of discharge.
5. **Membrane sweeping:** digital separation of the chorionic membrane from the lower uterine segment to stimulate local prostaglandin release.
6. **Nucleic acid amplification test (NAAT):** a highly sensitive molecular test used to detect chlamydia and gonorrhoea.
7. **Pipelle biopsy:** an outpatient method of endometrial sampling using a narrow, flexible device.
8. **Point-of-care testing:** diagnostic testing performed within the consultation itself, providing immediate results.
9. **Transformation zone:** the site where columnar and squamous epithelium meet on the cervix, the origin of most cervical dysplasia.
10. **Punch biopsy:** a technique for obtaining a small, full-thickness tissue sample, used for vulval or targeted cervical biopsy.

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11. **Loop electrosurgical excision procedure (LEEP):** an excisional technique used to treat confirmed high-grade cervical dysplasia.
12. **Booking investigations:** the panel of blood and urine tests performed at the first comprehensive antenatal visit.

Concept Check Questions [Series 4]

Objective questions

- Technique errors are a recognised and largely avoidable cause of an inadequate or _____ cervical cytology result.
- High-risk HPV testing is used as the primary test in many modern screening programmes, with cytology as a secondary _____ test.
- A high vaginal swab should be taken before application of _____ gel, which can interfere with microbiological culture.
- Cryosurgery is unsuitable for lesions extending into the _____ canal beyond direct visualisation.
- Membrane sweeping stimulates local _____ release by digital separation of the chorionic membrane.

Short-answer questions

1. Explain why clear communication of cytology results to the patient is essential. (Linked to SLO 4.2)
2. Distinguish endocervical swab technique from high vaginal swab technique. (Linked to SLO 4.3)
3. Explain the limitations of pipelle biopsy and when further investigation is indicated. (Linked to SLO 4.5)
4. Describe the value of point-of-care testing in the antenatal clinic. (Linked to SLO 4.6)
5. Describe the expected effects of membrane sweeping that should be explained to the woman beforehand. (Linked to SLO 4.7)

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Long-answer questions

6. Describe the technique and interpretation of cervical cytology and the role of HPV testing. (Linked to SLO 4.1, SLO 4.2)
7. Describe the technique and interpretation of high vaginal and endocervical swabs. (Linked to SLO 4.3)
8. Describe cryosurgery and the biopsy techniques used to investigate gynaecological pathology. (Linked to SLO 4.4, SLO 4.5)
9. Describe the routine antenatal clinic-based procedures performed during pregnancy. (Linked to SLO 4.6)
10. Describe membrane sweeping and the principles of preparing and consenting patients for clinic-based procedures. (Linked to SLO 4.7, SLO 4.8)

Answers to Concept Check Questions [Series 4]

Objective questions

11. Unsatisfactory.
12. Triage.
13. Lubricant.
14. Endocervical.
15. Prostaglandin.

Short-answer questions

16. An unclear result can cause disproportionate anxiety, and inadequate understanding may lead to failure to attend recommended follow-up.
17. Endocervical swab samples the endocervical canal for chlamydia or gonorrhoea; high vaginal swab samples the vaginal walls for general infective causes.
18. The sample represents only a portion of the endometrial cavity, so persistent bleeding despite a normal result should prompt hysteroscopy.

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19. It provides immediate results without laboratory delay, supporting efficient, same-visit clinical decision-making.
20. Discomfort and light vaginal bleeding or spotting, generally self-limiting effects of the procedure.

Long-answer questions

21. **Basic response:** Cervical cytology samples the transformation zone and is reported by degree of dyskaryosis, with HPV testing now used as the primary screening test in many programmes.

Value-added response: Clear communication of results is essential, as unclear results can cause disproportionate anxiety or lead to non-attendance at follow-up.

22. **Basic response:** High vaginal swabs sample the vaginal walls for general infection, while endocervical swabs specifically target chlamydia and gonorrhoea.

Value-added response: Results must be interpreted in clinical context, as some organisms are commensal and negative results do not always exclude infection.

23. **Basic response:** Cryosurgery destroys abnormal cervical tissue by freezing for suitable lesions, while pipelle, vulval, and cervical biopsy provide histological diagnosis of suspicious pathology.

Value-added response: Persistent symptoms despite a normal pipelle result should prompt hysteroscopy rather than reassurance, given the recognised false-negative rate.

24. **Basic response:** Antenatal clinic procedures include booking blood tests, urinalysis, and point-of-care testing, providing structured, standardised surveillance across pregnancy.

Value-added response: Point-of-care testing is particularly valuable in a busy antenatal clinic, supporting real-time clinical decisions without laboratory delay.

25. **Basic response:** Membrane sweeping stimulates local prostaglandin release to reduce the likelihood of formal induction, performed during a routine vaginal examination.

Value-added response: Preparing and consenting a patient for any clinic-based procedure requires clear explanation of purpose, alternatives, and specific risks, documented contemporaneously.

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Answers to Pilot Questions [Series 4]

Part 4.1

1. A sampling device is rotated against the cervix under direct visualisation to capture cells from the transformation zone.
2. The transformation zone is where most cervical dysplasia and carcinoma arise, making it the focus of screening.
3. Borderline, low-grade, or high-grade dyskaryosis, each with a different recommended follow-up pathway.
4. An unclear result can cause disproportionate anxiety and may lead to failure to attend recommended follow-up.
5. HPV is used as the primary test, with cytology performed as a secondary triage test only in HPV-positive women.

Part 4.2

6. Sampling from the posterior fornix or lateral vaginal walls under direct visualisation, to identify infective causes of discharge.
7. Lubricant gel can interfere with accurate microbiological culture and yield a false-negative result.
8. Endocervical swab samples the endocervical canal for chlamydia and gonorrhoea, unlike the vaginal wall sampling of a high vaginal swab.
9. NAATs offer considerably higher sensitivity and can often use self-collected or urine samples, improving accessibility.
10. Some organisms are normal commensal flora, so results should be interpreted alongside symptoms and examination findings.

Part 4.3

11. A metal probe cooled by refrigerant gas causes ice crystal formation, cellular dehydration, and tissue necrosis.

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12. Confirmed low-grade or selected fully visible high-grade disease; unsuitable for endocervical extension or suspected invasion.
13. A narrow flexible device is passed into the uterine cavity and a small sample obtained by suction as it is withdrawn.
14. The sample represents only part of the cavity, so persistent bleeding despite a normal result warrants hysteroscopy.
15. Targeted punch biopsy samples a specific area during colposcopy; excisional biopsy such as LEEP removes a larger area of tissue.

Part 4.4

1. Venous blood sampling for booking investigations, urinalysis at every visit, and glucose tolerance testing where indicated.
2. It provides immediate results without laboratory delay, supporting efficient, same-visit clinical decision-making.
3. Digital separation of the chorionic membrane during vaginal examination, stimulating local prostaglandin release.
4. Discomfort and light vaginal bleeding or spotting, generally self-limiting effects.
5. Explanation of indication, procedure details, expected discomfort, duration, and anticipated recovery, given in advance where possible.

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References and Attributions [Series 4]

Textual References

1. Cunningham, F. G., Leveno, K. J., Dashe, J. S. et al. (2022). Williams Obstetrics (26th ed.). McGraw Hill.
2. World Health Organization (2021). WHO Guideline for Screening and Treatment of Cervical Pre-Cancer Lesions for Cervical Cancer Prevention (2nd ed.). WHO Press.
3. National Institute for Health and Care Excellence (2021). Antenatal Care: NICE Guideline NG201. NICE.
4. Royal College of Obstetricians and Gynaecologists (2022). Gynaecological Examination: Guidance for Clinicians. RCOG Press.

Figures, Plates, Tables, and Boxes

1. Figure 4.1: Cervical cytology sampling technique and the HPV-primary screening pathway. AI-generated using the prompt: "Create a professional medical diagram titled Cervical Screening Pathway, showing sampling technique and the HPV-primary screening flowchart. Clean clinical educational diagram style."
2. Table 4.2: Comparison of high vaginal and endocervical swab technique and indications. AI-generated using the prompt: "Create a clean reference table titled High Vaginal versus Endocervical Swab, comparing sampling site, target organisms, and technique. Simple clinical reference table style with outside border."
3. Box 4.3: Summary of gynaecological diagnostic clinic procedures and their indications. AI-generated using the prompt: "Create a simple single-column reference box with an outside border titled Gynaecological Diagnostic Clinic Procedures, listing key procedures with a one-line indication each. Clinical reference box style."
4. Figure 4.4: Antenatal clinic-based procedures, membrane sweeping, and the procedural consent checklist. AI-generated using the prompt: "Create a professional medical diagram titled Obstetric Clinic-Based Procedures, showing booking investigations, point-of-care testing, membrane sweeping, and a consent checklist. Clean clinical educational diagram style."

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Series 5: Diagnostic and Imaging Methods in Obstetrics and Gynaecology

- **Part 5.1: Ultrasonography in Obstetrics**
  - Sub Part 5.1.1: Transabdominal and transvaginal ultrasound principles
  - Sub Part 5.1.2: Obstetric ultrasound applications across pregnancy
  - Sub Part 5.1.3: Doppler ultrasound in obstetrics
- **Part 5.2: Ultrasonography in Gynaecology**
  - Sub Part 5.2.1: Gynaecological applications of transvaginal ultrasound
  - Sub Part 5.2.2: Ultrasound assessment of the endometrium and ovaries
  - Sub Part 5.2.3: Saline infusion sonography and 3D ultrasound
- **Part 5.3: Colposcopy and Hysteroscopy**
  - Sub Part 5.3.1: Colposcopy: indications, technique, and findings
  - Sub Part 5.3.2: Diagnostic hysteroscopy
  - Sub Part 5.3.3: Comparing colposcopy and hysteroscopy in diagnostic pathways
- **Part 5.4: Hysterosalpingography and Course Synthesis**
  - Sub Part 5.4.1: Hysterosalpingography: indications and technique
  - Sub Part 5.4.2: Interpretation of hysterosalpingography findings
  - Sub Part 5.4.3: Course synthesis: integrating diagnostic methods into clinical practice

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Introduction

In the last Series, we explored clinic-based procedures in obstetrics and gynaecology. We conclude this course, and this journey through Obstetric Clinic and Simulation Training, by turning to the diagnostic and imaging methods that so often confirm, refine, or extend what

history, examination, and clinic-based procedures alone can establish: ultrasonography across both obstetric and gynaecological practice, colposcopy, diagnostic hysteroscopy, and hysterosalpingography. Together, these methods complete the diagnostic toolkit this course has built, Series by Series, from your very first consultation.

The aim of this Series is to equip you with the knowledge of ultrasonography in obstetrics and gynaecology, colposcopy, diagnostic hysteroscopy, and hysterosalpingography, and how to integrate these methods into clinical practice.

We shall commence this Series by examining ultrasonography in obstetrics, including its principles, applications across pregnancy, and the role of Doppler. Next, we will consider ultrasonography in gynaecology, including advanced techniques. Following that, our attention turns to colposcopy and diagnostic hysteroscopy. Finally, we will conclude by examining hysterosalpingography and synthesising the diagnostic and imaging methods covered across this course.

Series Learning Outcomes

Upon completing this Series, you should be able to:

- **SLO 5.1:** describe the principles and technique of transabdominal and transvaginal ultrasonography,
- **SLO 5.2:** describe the applications of obstetric ultrasound across pregnancy,
- **SLO 5.3:** describe the role of Doppler ultrasound in obstetrics,
- **SLO 5.4:** describe the gynaecological applications of ultrasound,
- **SLO 5.5:** describe advanced ultrasound techniques, including saline infusion sonography and 3D ultrasound,
- **SLO 5.6:** describe colposcopy and diagnostic hysteroscopy,
- **SLO 5.7:** describe hysterosalpingography and the interpretation of its findings, and
- **SLO 5.8:** integrate diagnostic and imaging methods into clinical decision-making.

5.1 Ultrasonography in Obstetrics

5.1.1 Transabdominal and transvaginal ultrasound principles

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Transabdominal ultrasound uses a probe placed on the maternal abdomen, generally requiring a full bladder in early pregnancy to improve visualisation, and is well suited to later pregnancy assessment, whole-uterus overview, and general screening, while transvaginal ultrasound uses a probe inserted into the vagina, providing considerably higher resolution imaging of pelvic structures given the closer proximity to the area of interest, particularly valuable in early pregnancy and for detailed assessment of the cervix and adnexa.

Neither modality uses ionising radiation, making ultrasound a genuinely safe imaging technique throughout pregnancy, with the specific choice between transabdominal and transvaginal approaches guided by gestational age, the specific structure being assessed, and, in early pregnancy particularly, the superior resolution transvaginal imaging typically provides for confirming pregnancy location and viability.

Fill in the blank: Transvaginal ultrasound provides considerably higher resolution imaging given the closer _____ to the area of interest. Neither transabdominal nor transvaginal ultrasound uses _____ radiation, making it a genuinely safe imaging technique.

5.1.2 Obstetric ultrasound applications across pregnancy

Early pregnancy ultrasound (generally performed transvaginally) confirms intrauterine pregnancy location, viability, and, using crown-rump length measurement, accurate gestational dating, while excluding or identifying multiple pregnancy and, where indicated, assessing for suspected ectopic pregnancy or early pregnancy loss.

The mid-trimester anomaly scan (typically performed around 18 to 21 weeks) provides detailed assessment of foetal structural anatomy, placental location, and amniotic fluid volume, while third-trimester ultrasound assesses foetal growth, presentation, and, where indicated, Doppler studies of placental and foetal blood flow, together forming a structured, staged programme of ultrasound assessment across the course of pregnancy.

Fill in the blank: Crown-rump length measurement in early pregnancy provides accurate gestational _____. The mid-trimester anomaly scan is typically performed around _____ to 21 weeks of gestation.

5.1.3 Doppler ultrasound in obstetrics

Doppler ultrasound assesses blood flow velocity within maternal and foetal vessels, most commonly the umbilical artery, middle cerebral artery, and uterine arteries, providing valuable information about placental function and foetal cardiovascular adaptation to any degree of placental insufficiency, and forming an increasingly central component of surveillance in pregnancies at higher risk of foetal growth restriction.

Progressively abnormal umbilical artery Doppler waveforms (from raised resistance through absent to reversed end-diastolic flow) reflect worsening placental insufficiency, while middle cerebral artery Doppler detects the foetal adaptive response to hypoxia, termed brain-sparing,

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with both findings together directly informing decisions around the timing of delivery in a growth-restricted foetus.

Fill in the blank: Doppler ultrasound most commonly assesses the umbilical artery, middle cerebral artery, and _____ arteries. The most severe umbilical artery Doppler finding is reversed end-_____ flow.

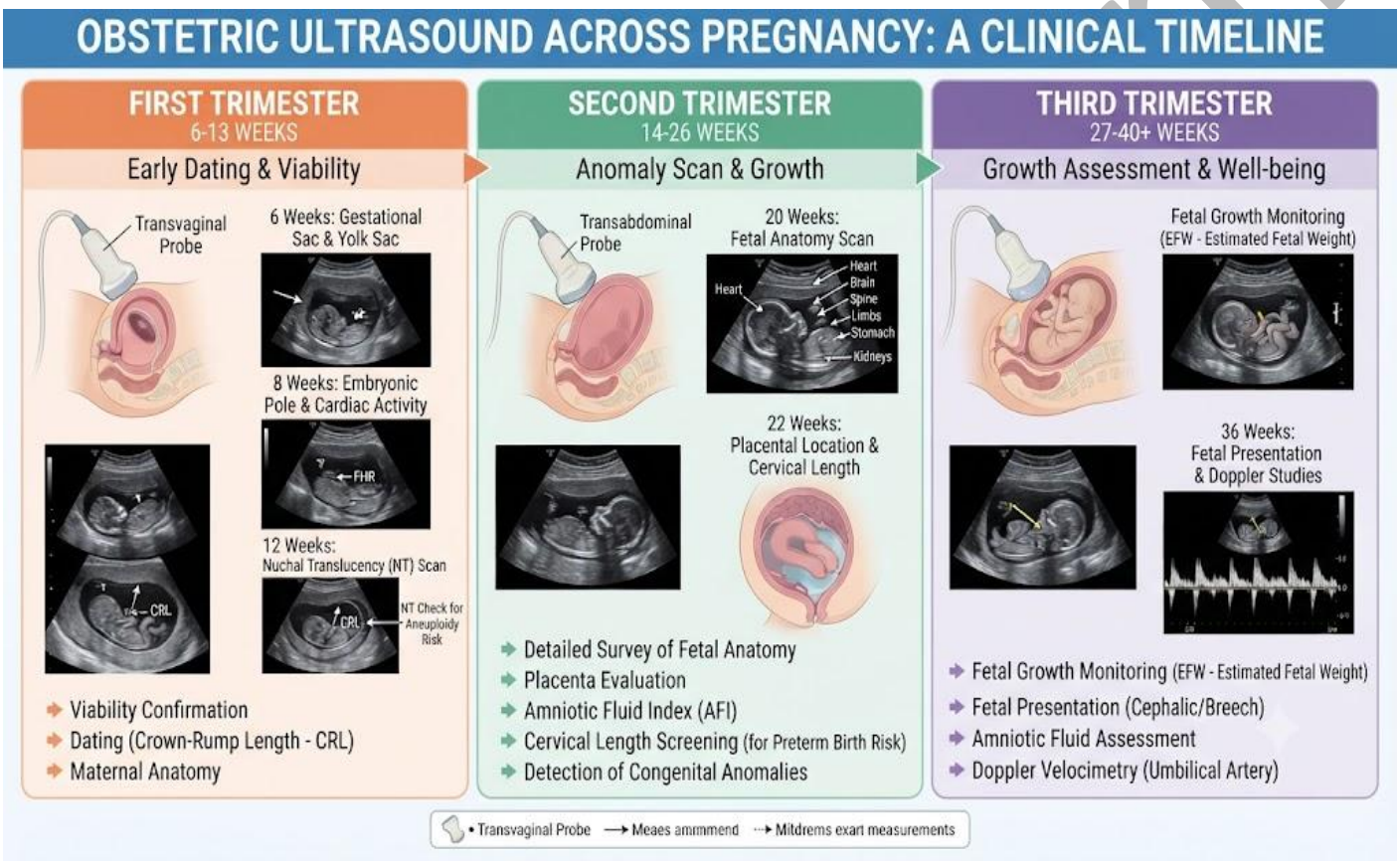

Figure 5.1: Obstetric ultrasound applications across the course of pregnancy.

Pilot questions 5.1

- Compare transabdominal and transvaginal ultrasound technique and their respective applications. (Linked to SLO 5.1)
- Explain why ultrasound is considered a genuinely safe imaging technique in pregnancy. (Linked to SLO 5.1)
- Describe the applications of early pregnancy ultrasound. (Linked to SLO 5.2)
- Describe the purpose of the mid-trimester anomaly scan and third-trimester ultrasound. (Linked to SLO 5.2)

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- Describe the role of Doppler ultrasound in the surveillance of foetal growth restriction. (Linked to SLO 5.3)

5.2 Ultrasonography in Gynaecology

5.2.1 Gynaecological applications of transvaginal ultrasound

Transvaginal ultrasound is the primary imaging modality in gynaecological practice, used in the investigation of abnormal uterine bleeding, pelvic pain, suspected ovarian or uterine masses, and infertility, offering considerably superior resolution to transabdominal imaging for assessing the uterus, endometrium, and adnexa in the non-pregnant woman.

Ultrasound assessment of a suspected ectopic pregnancy, using both transvaginal imaging and correlation with serum beta-hCG level, forms the cornerstone of investigation in a haemodynamically stable woman with suspected ectopic pregnancy, discussed in greater depth elsewhere in this broader curriculum, illustrating the genuinely central role ultrasound plays across both obstetric and gynaecological emergency and routine practice alike.

Fill in the blank: Transvaginal ultrasound offers considerably superior _____ to transabdominal imaging for assessing the uterus, endometrium, and adnexa. Ultrasound assessment of suspected ectopic pregnancy is correlated with serum beta-_____ level.

5.2.2 Ultrasound assessment of the endometrium and ovaries

Endometrial thickness measurement by transvaginal ultrasound is a key investigation in postmenopausal bleeding, with a thin endometrium considerably reassuring against endometrial malignancy, while a thickened endometrium warrants further investigation, typically endometrial biopsy, given the increased likelihood of significant pathology this specific finding represents.

Ovarian assessment by ultrasound characterises any identified mass by its size, structure (simple cystic, complex, or solid), and specific morphological features associated with malignancy, such as thick septations, solid components, or papillary projections, with a structured risk-of-malignancy scoring system combining these ultrasound features with serum tumour markers, directly guiding the urgency and pathway of further management.

Fill in the blank: A thin endometrium on transvaginal ultrasound is considerably reassuring against endometrial _____. Ovarian masses are characterised by size, structure, and specific morphological features associated with _____.

5.2.3 Saline infusion sonography and 3D ultrasound

Saline infusion sonography (instillation of sterile saline into the uterine cavity during transvaginal ultrasound) improves visualisation of the endometrial cavity, allowing more accurate detection of intracavitary lesions such as polyps or submucosal fibroids than standard

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transvaginal ultrasound alone, offering a genuinely valuable, minimally invasive alternative or complement to diagnostic hysteroscopy in appropriately selected cases.

Three-dimensional (3D) ultrasound provides additional structural information, particularly valuable in assessing suspected congenital uterine anomalies (such as a septate or bicornuate uterus) by allowing reconstruction and visualisation of the coronal plane of the uterus, a view not otherwise obtainable using standard two-dimensional ultrasound technique alone.

Fill in the blank: Saline infusion sonography improves visualisation of the endometrial cavity, allowing more accurate detection of intracavitary lesions such as _____ or submucosal fibroids. Three-dimensional ultrasound is particularly valuable in assessing suspected congenital uterine _____.

Indications	Findings	Advanced Techniques
Pelvic pain / mass	Ovarian cysts, fibroids, adnexal masses	Doppler flow for vascularity assessment
Abnormal uterine bleeding	Endometrial thickness, polyps, fibroids	Saline infusion sonohysterography (SIS)
Infertility evaluation	Antral follicle count, uterine anomalies	3D ultrasound for uterine morphology
Early pregnancy	Intrauterine vs ectopic pregnancy, viability	Transvaginal high-resolution imaging
IUD localization	Position of intrauterine device	3D reconstruction for malposition
Suspected malignancy	Complex adnexal masses, ascites	Contrast-enhanced ultrasound, elastography

Table 5.2: Gynaecological ultrasound applications and advanced techniques.

Pilot questions 5.2

1. Describe the gynaecological applications of transvaginal ultrasound. (Linked to SLO 5.4)
2. Explain the role of ultrasound in the investigation of suspected ectopic pregnancy. (Linked to SLO 5.4)
3. Describe the significance of endometrial thickness measurement in postmenopausal bleeding. (Linked to SLO 5.4)
4. Describe the ultrasound features used to characterise a suspected ovarian mass. (Linked to SLO 5.4)

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5. Describe saline infusion sonography and 3D ultrasound and their specific applications. (Linked to SLO 5.5)

5.3 Colposcopy and Hysteroscopy

5.3.1 Colposcopy: indications, technique, and findings

Colposcopy is direct, magnified visualisation of the cervix, vagina, and vulva, indicated principally following an abnormal cervical screening result, using application of dilute acetic acid to identify abnormal, dysplastic epithelium, which becomes visibly whiter (acetowhite change) compared with normal epithelium, allowing the colposcopist to identify, map, and biopsy the most abnormal-appearing areas under direct visualisation.

Colposcopic findings are classified according to a structured system reflecting the likely severity of underlying dysplasia, with dense, sharply demarcated acetowhite change and abnormal vascular patterns suggesting more severe underlying disease, directly guiding the site selected for biopsy and, in some circumstances, an immediate treatment approach where the colposcopic impression is sufficiently confident.

Fill in the blank: Abnormal cervical epithelium becomes visibly whiter, termed _____ change, following application of dilute acetic acid during colposcopy. Colposcopic findings guide the site selected for _____, an essential step before definitive treatment in most cases.

5.3.2 Diagnostic hysteroscopy

Diagnostic hysteroscopy is direct visualisation of the uterine cavity using a narrow telescope passed through the cervix, distending the cavity with fluid, indicated for the investigation of abnormal uterine bleeding, assessment of the uterine cavity in infertility investigation, and identification of intracavitary lesions such as polyps or submucosal fibroids that may not be fully characterised on ultrasound alone.

A vaginoscopic (no-touch) technique avoiding the use of a speculum or cervical instrumentation is increasingly used for outpatient diagnostic hysteroscopy, considerably improving patient comfort and acceptability compared with traditional hysteroscopic approaches requiring formal cervical dilatation, and allowing many diagnostic procedures to be performed without general anaesthesia.

Fill in the blank: Diagnostic hysteroscopy directly visualises the uterine cavity, distending it with _____ to allow adequate visualisation. The vaginoscopic or no-touch technique avoids the use of a speculum or cervical _____.

5.3.3 Comparing colposcopy and hysteroscopy in diagnostic pathways

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Colposcopy and hysteroscopy occupy distinct but complementary positions within the gynaecological diagnostic pathway: colposcopy specifically assesses the cervix and lower genital tract following an abnormal screening result, while hysteroscopy assesses the uterine cavity itself, most commonly following abnormal bleeding or an ultrasound finding suggesting an intracavitary lesion, with the two rarely, if ever, substituting for one another given their genuinely distinct anatomical focus.

Both procedures share the common principle of direct visualisation guiding targeted biopsy, providing histological confirmation that neither imaging nor colposcopic or hysteroscopic impression alone can substitute for, and both are increasingly taught and maintained through simulation-based training given the genuinely important role of deliberate, repeated practice in developing procedural competence and confidence in these specific techniques.

Fill in the blank: Colposcopy assesses the cervix and lower genital tract, while hysteroscopy assesses the _____ cavity itself. Both procedures share the common principle of direct visualisation guiding targeted _____.

Aspect	Details
Anatomical Focus	Colposcopy: cervix, vagina, vulva. Hysteroscopy: uterine cavity and endometrium.
Indications	Colposcopy: abnormal cervical cytology, suspected cervical intraepithelial neoplasia, evaluation of genital lesions. Hysteroscopy: abnormal uterine bleeding, infertility, intrauterine pathology (polyps, fibroids, adhesions).
Technique	Colposcopy: magnified visualization with acetic acid/Lugol's iodine; directed biopsy. Hysteroscopy: endoscopic visualization via transcervical approach; operative instruments for biopsy, polypectomy, myomectomy.

Box 5.3: Comparison of colposcopy and diagnostic hysteroscopy.

Pilot questions 5.3

1. Describe the indications and technique of colposcopy. (Linked to SLO 5.6)
2. Explain the significance of acetowhite change during colposcopy. (Linked to SLO 5.6)
3. Describe the indications and technique of diagnostic hysteroscopy. (Linked to SLO 5.6)
4. Describe the vaginoscopic (no-touch) hysteroscopy technique and its advantages. (Linked to SLO 5.6)

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5. Compare the anatomical focus and indications of colposcopy and hysteroscopy. (Linked to SLO 5.6)

5.4 Hysterosalpingography and Course Synthesis

5.4.1 Hysterosalpingography: indications and technique

Hysterosalpingography (HSG) is a radiological investigation in which radio-opaque contrast medium is instilled through the cervix into the uterine cavity under fluoroscopic guidance, indicated principally in the investigation of infertility to assess uterine cavity shape and, most importantly, tubal patency, given the significant contribution of tubal factor infertility to overall infertility presentations.

The procedure is generally performed in the early follicular phase of the menstrual cycle to avoid the possibility of an early, undiagnosed pregnancy, with mild to moderate cramping pain a common, expected experience during contrast instillation, and prophylactic analgesia and, in women with specific risk factors, antibiotic prophylaxis considered as part of standard, careful procedural preparation.

Fill in the blank: Hysterosalpingography instills radio-opaque contrast through the cervix under _____ guidance. The procedure is generally performed in the early _____ phase of the menstrual cycle to avoid an undiagnosed pregnancy.

5.4.2 Interpretation of hysterosalpingography findings

Normal hysterosalpingography findings show contrast filling the uterine cavity in a normal triangular shape, passing freely through both fallopian tubes, and spilling into the peritoneal cavity, confirming bilateral tubal patency, while unilateral or bilateral tubal blockage, seen as failure of contrast to pass beyond a specific point in the tube, directly identifies tubal factor infertility as a relevant contributing cause.

Uterine cavity abnormalities identified on hysterosalpingography, including a septate uterus, intrauterine adhesions, or submucosal fibroids distorting the cavity, each carry specific implications for fertility and may warrant further assessment or correction, typically by hysteroscopy, before proceeding with fertility treatment, illustrating the genuinely complementary relationship between these different diagnostic and imaging modalities covered throughout this Series.

Fill in the blank: Normal hysterosalpingography shows contrast passing freely through both tubes and spilling into the _____ cavity. Uterine cavity abnormalities identified on hysterosalpingography may warrant further assessment by _____.

5.4.3 Course synthesis: integrating diagnostic methods into clinical practice

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Across this entire course we have travelled from the fundamentals of approaching the obstetric and gynaecological patient, through symptoms, signs, and history taking, general and pelvic examination, and clinic-based procedures, to this final Series on diagnostic and imaging methods, a deliberate progression reflecting how a genuinely thorough clinical assessment builds systematically towards, and is ultimately confirmed or refined by, appropriately selected investigation.

No single diagnostic or imaging modality covered in this Series, whether ultrasound, colposcopy, hysteroscopy, or hysterosalpingography, should ever be considered in isolation from the clinical picture that prompted its use, and, as you move forward into clinical practice, the genuinely essential skill is not merely knowing how each investigation works, but knowing when, and why, each is the right tool to reach for in the specific clinical situation actually in front of you.

Fill in the blank: This course has progressed from approaching the patient through examination and procedures to this final Series on diagnostic and imaging _____. No single diagnostic modality should ever be considered in isolation from the _____ picture that prompted its use.

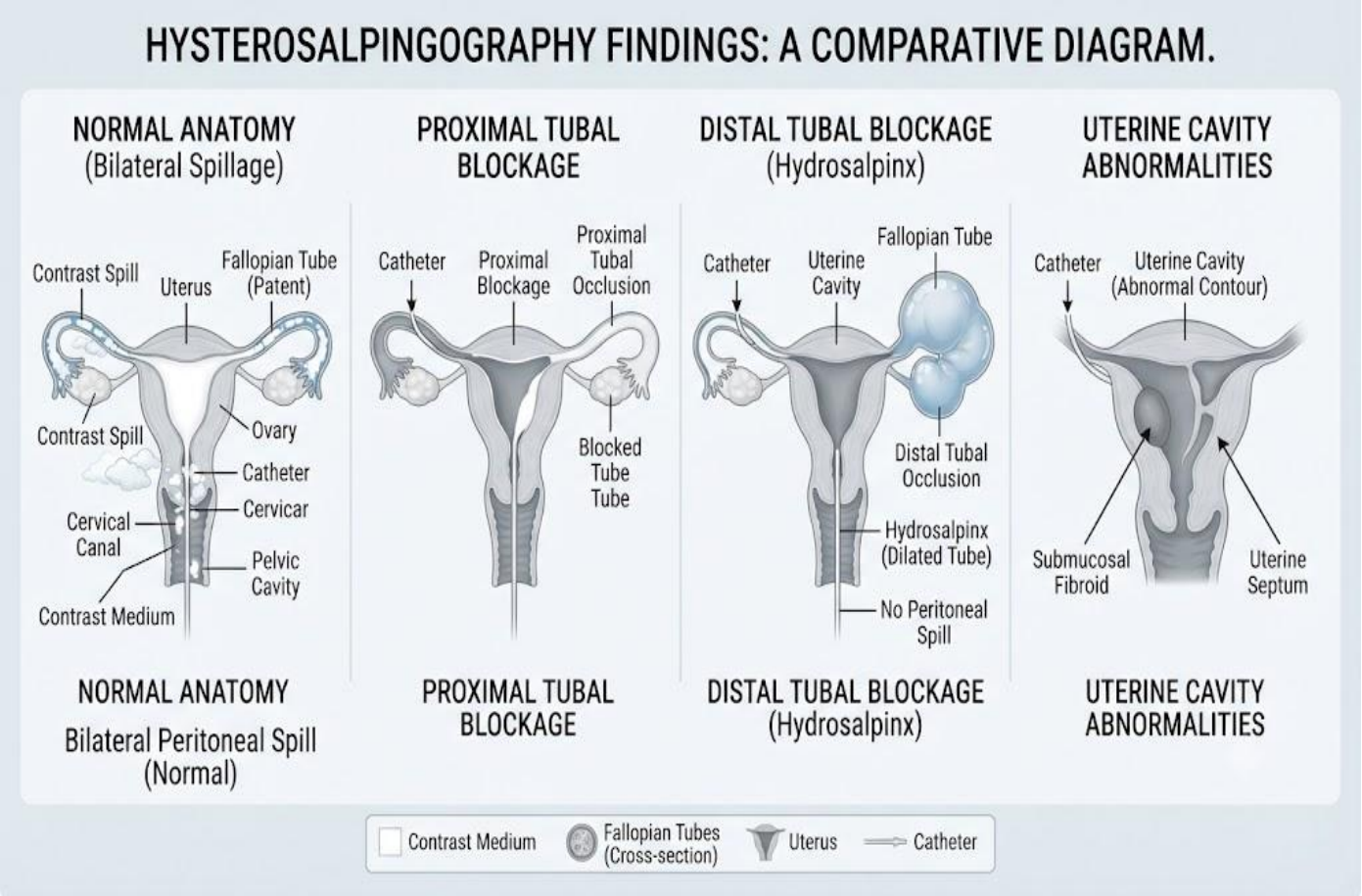

Figure 5.4: Normal and abnormal hysterosalpingography findings.

Pilot questions 5.4

1. Describe the indications and technique of hysterosalpingography. (Linked to SLO 5.7)
2. Explain why hysterosalpingography is generally performed in the early follicular phase. (Linked to SLO 5.7)
3. Describe the normal findings on hysterosalpingography. (Linked to SLO 5.7)
4. Describe the uterine cavity abnormalities that may be identified on hysterosalpingography. (Linked to SLO 5.7)
5. Explain the importance of integrating diagnostic and imaging methods with the clinical picture. (Linked to SLO 5.8)

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Series Summary

This Series has covered ultrasonography in obstetrics, including its principles, applications across pregnancy, and the role of Doppler, followed by ultrasonography in gynaecology, including advanced techniques. It went on to examine colposcopy and diagnostic hysteroscopy, before concluding with hysterosalpingography and a synthesis of the diagnostic and imaging methods covered across this course on Obstetric Clinic and Simulation Training.

You should now be able to describe the principles of ultrasonography, its obstetric and gynaecological applications, describe advanced ultrasound techniques, describe colposcopy and diagnostic hysteroscopy, describe hysterosalpingography and its interpretation, and integrate diagnostic and imaging methods into clinical decision-making (Linked to SLOs 5.1 to 5.8).

Glossary of Terms

1. **Acetowhite change:** the visible whitening of abnormal cervical epithelium following application of dilute acetic acid during colposcopy.
2. **Colposcopy:** direct, magnified visualisation of the cervix, vagina, and vulva used to further assess an abnormal screening result.
3. **Crown-rump length:** a foetal measurement used in early pregnancy to establish accurate gestational dating.
4. **Diagnostic hysteroscopy:** direct visualisation of the uterine cavity using a narrow telescope passed through the cervix.
5. **Hysterosalpingography (HSG):** a radiological investigation using contrast medium to assess uterine cavity shape and tubal patency.
6. **Mid-trimester anomaly scan:** a detailed ultrasound assessment of foetal structural anatomy, typically performed around 18 to 21 weeks.
7. **Saline infusion sonography:** instillation of sterile saline into the uterine cavity during transvaginal ultrasound to improve visualisation of intracavitary lesions.
8. **Tubal patency:** the property of a fallopian tube being open and unobstructed, assessed by hysterosalpingography.
9. **Transvaginal ultrasound:** ultrasound imaging using a probe inserted into the vagina, offering higher resolution of pelvic structures.
10. **Vaginoscopic (no-touch) technique:** a hysteroscopy technique avoiding the use of a speculum or cervical instrumentation, improving comfort.

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11. **Doppler ultrasound:** an ultrasound technique assessing blood flow velocity, used to evaluate placental and foetal circulation.
12. **Risk of malignancy index:** a scoring system combining ultrasound features and tumour markers to guide management of an ovarian mass.

Concept Check Questions [Series 5]

Objective questions

- Transvaginal ultrasound provides considerably higher resolution imaging given the closer _____ to the area of interest.
- Crown-rump length measurement in early pregnancy provides accurate gestational _____.
- The most severe umbilical artery Doppler finding is reversed end-_____ flow.
- A thin endometrium on transvaginal ultrasound is considerably reassuring against endometrial _____.
- Hysterosalpingography instills radio-opaque contrast through the cervix under _____ guidance.

Short-answer questions

1. Explain why ultrasound is considered a genuinely safe imaging technique in pregnancy. (Linked to SLO 5.1)
2. Describe the ultrasound features used to characterise a suspected ovarian mass. (Linked to SLO 5.4)
3. Explain the significance of acetowhite change during colposcopy. (Linked to SLO 5.6)
4. Describe the vaginoscopic (no-touch) hysteroscopy technique and its advantages. (Linked to SLO 5.6)
5. Explain why hysterosalpingography is generally performed in the early follicular phase. (Linked to SLO 5.7)

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Long-answer questions

6. Describe transabdominal and transvaginal ultrasound and the applications of obstetric ultrasound across pregnancy. (Linked to SLO 5.1, SLO 5.2)
7. Describe the role of Doppler ultrasound and the gynaecological applications of ultrasound, including advanced techniques. (Linked to SLO 5.3, SLO 5.4, SLO 5.5)
8. Describe colposcopy and diagnostic hysteroscopy, comparing their anatomical focus and indications. (Linked to SLO 5.6)
9. Describe hysterosalpingography and the interpretation of its findings. (Linked to SLO 5.7)
10. Explain the importance of integrating diagnostic and imaging methods with the clinical picture. (Linked to SLO 5.8)

Answers to Concept Check Questions [Series 5]

Objective questions

11. Proximity.
12. Dating.
13. Diastolic.
14. Malignancy.
15. Fluoroscopic.

Short-answer questions

16. Neither transabdominal nor transvaginal ultrasound uses ionising radiation, making it genuinely safe throughout pregnancy.
17. Size, structure (simple cystic, complex, or solid), and features such as septations, solid components, or papillary projections.
18. It identifies abnormal, dysplastic epithelium, allowing the colposcopist to map and biopsy the most abnormal-appearing areas.

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19. It avoids a speculum or cervical instrumentation, considerably improving patient comfort compared with traditional approaches.
20. It avoids the possibility of instilling contrast during an early, undiagnosed pregnancy.

Long-answer questions

21. **Basic response:** Transabdominal ultrasound suits later pregnancy and general overview, while transvaginal ultrasound offers higher resolution, particularly in early pregnancy.

Value-added response: Ultrasound applications progress across pregnancy from early dating through the anomaly scan to third-trimester growth and Doppler assessment.

22. **Basic response:** Doppler ultrasound assesses placental function and foetal adaptation to hypoxia, while gynaecological ultrasound investigates bleeding, pain, and masses.

Value-added response: Advanced techniques such as saline infusion sonography and 3D ultrasound provide additional structural detail beyond standard imaging.

23. **Basic response:** Colposcopy assesses the cervix following an abnormal screening result, while hysteroscopy assesses the uterine cavity for bleeding or suspected intracavitary lesions.

Value-added response: Both procedures share the principle of direct visualisation guiding targeted biopsy, providing histological confirmation neither imaging alone can replace.

24. **Basic response:** Hysterosalpingography assesses uterine cavity shape and tubal patency using contrast under fluoroscopic guidance, performed in the early follicular phase.

Value-added response: Uterine cavity abnormalities identified on HSG may warrant further assessment by hysteroscopy before proceeding with fertility treatment.

25. **Basic response:** This course has progressed from approach and history through examination and procedures to diagnostic and imaging methods, forming a complete clinical toolkit.

Value-added response: No single diagnostic or imaging modality should be considered in isolation from the clinical picture that prompted its use.

Answers to Pilot Questions [Series 5]

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Part 5.1

1. Transabdominal uses an abdominal probe suited to later pregnancy; transvaginal uses a vaginal probe offering higher resolution, especially early.
2. Neither modality uses ionising radiation, making it genuinely safe throughout pregnancy.
3. Confirms intrauterine location, viability, gestational dating, and identifies multiple pregnancy or suspected ectopic pregnancy.
4. The anomaly scan assesses structural anatomy around 18 to 21 weeks; third-trimester ultrasound assesses growth, presentation, and Doppler.
5. It detects worsening placental insufficiency and foetal adaptation to hypoxia, informing delivery timing decisions.

Part 5.2

6. Investigation of abnormal bleeding, pelvic pain, suspected masses, and infertility, with superior resolution to transabdominal imaging.
7. Ultrasound findings are correlated with serum beta-hCG level to support diagnosis in a stable woman.
8. A thin endometrium is reassuring against malignancy; a thickened endometrium warrants further investigation, typically biopsy.
9. Size, structure, and morphological features such as septations, solid components, or papillary projections.
10. Saline infusion sonography improves intracavitary lesion detection; 3D ultrasound assesses congenital uterine anomalies.

Part 5.3

11. Indicated after an abnormal screening result, using acetic acid application to identify abnormal epithelium under direct visualisation.
12. It identifies abnormal, dysplastic epithelium, guiding the site selected for biopsy.
13. Indicated for abnormal bleeding and infertility assessment, using a telescope passed through the cervix with fluid distension.

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14. It avoids a speculum or cervical instrumentation, considerably improving patient comfort.
15. Colposcopy focuses on the cervix and lower genital tract; hysteroscopy focuses on the uterine cavity itself.

Part 5.4

1. Contrast medium is instilled through the cervix under fluoroscopic guidance to assess cavity shape and tubal patency.
2. It avoids the possibility of instilling contrast during an early, undiagnosed pregnancy.
3. Contrast fills the cavity in a normal triangular shape, passes through both tubes, and spills into the peritoneal cavity.
4. Septate uterus, intrauterine adhesions, and submucosal fibroids distorting the cavity.
5. Investigations must always be interpreted alongside the clinical picture that prompted their use, not in isolation.

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References and Attributions [Series 5]

Textual References

1. Cunningham, F. G., Leveno, K. J., Dashe, J. S. et al. (2022). Williams Obstetrics (26th ed.). McGraw Hill.
2. Hoffman, B. L., Schorge, J. O., Halvorson, L. M. et al. (2020). Williams Gynecology (4th ed.). McGraw Hill.
3. International Society of Ultrasound in Obstetrics and Gynecology (2019). Practice Guidelines for Performing Fetal Biometry. Ultrasound in Obstetrics and Gynecology, 53(6), 715 to 723.
4. American Association of Gynecologic Laparoscopists (2012). AAGL Practice Report: Practice Guidelines for the Diagnosis and Management of Endometrial Polyps. Journal of Minimally Invasive Gynecology, 19(1), 3 to 10.

Figures, Plates, Tables, and Boxes

1. Figure 5.1: Obstetric ultrasound applications across the course of pregnancy. AI-generated using the prompt: "Create a professional medical diagram titled Obstetric Ultrasound Across Pregnancy, showing a timeline from early dating through anomaly scan to third-trimester assessment. Clean clinical educational diagram style."
2. Table 5.2: Gynaecological ultrasound applications and advanced techniques. AI-generated using the prompt: "Create a clean reference table titled Gynaecological Ultrasound Applications, listing indications, findings, and advanced techniques. Simple clinical reference table style with outside border."
3. Box 5.3: Comparison of colposcopy and diagnostic hysteroscopy. AI-generated using the prompt: "Create a simple single-column reference box with an outside border titled Colposcopy versus Hysteroscopy, comparing anatomical focus, indications, and technique. Clinical reference box style."
4. Figure 5.4: Normal and abnormal hysterosalpingography findings. AI-generated using the prompt: "Create a professional medical diagram titled Hysterosalpingography Findings, comparing normal bilateral spill with tubal blockage and uterine cavity abnormalities. Clean clinical educational diagram style."

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