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Royal College of  
Obstetricians and Gynaecologists

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Bringing to life the best in women's health care

# **The Care of Women Requesting Induced Abortion**

Evidence-based Clinical Guideline Number 7

November 2011



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# Abbreviations

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ACOG	American College of Obstetricians and Gynecologists
APA	American Psychological Association
BMA	British Medical Association
bpas	British Pregnancy Advisory Service
CE	<i>conformité européenne</i>
CI	confidence interval
CMO	Chief Medical Officer
D&E	dilatation and evacuation
DH	Department of Health
FPA	Family Planning Association
FSRH	Faculty of Sexual & Reproductive Healthcare
GDG	Guideline Development Group
GP	general practitioner
GTN	gestational trophoblastic neoplasia
hCG	human chorionic gonadotrophin
i.u.	International Unit
IUD	intrauterine device
IUS	intrauterine system
MedFASH	Medical Foundation for AIDS & Sexual Health
MeSH	medical subject headings
MVA	manual vacuum aspiration
NHS	National Health Service
NICE	National Institute for Health and Clinical Excellence
NMC	Nursing and Midwifery Council
NSAID	non-steroidal anti-inflammatory drug
OR	odds ratio
RCGP	Royal College of General Practitioners
RCN	Royal College of Nursing
RCOG	Royal College of Obstetricians and Gynaecologists
RCT	randomised controlled trial
Rh	rhesus
RR	relative risk
SFP	Society for Family Planning
STI	sexually transmitted infection
VTE	venous thromboembolism
WHO	World Health Organization



# Development of the guideline

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The Royal College of Obstetricians and Gynaecologists (RCOG) guideline on *The Care of Women Requesting Induced Abortion* was first published in 2000. An updated version followed in 2004. The 2004 version served until this revision, which took place during 2010 and 2011. The revision was prompted mainly by a recommendation of the House of Commons Science and Technology Committee, which in 2007 considered *Scientific Developments relating to the Abortion Act 1967*.<sup>1</sup>

The revision of the guideline was undertaken by a multiprofessional group which was supported by the Department of Health (DH). Members of the Group included representatives of the RCOG, the Faculty of Sexual & Reproductive Healthcare (FSRH), the Royal College of General Practitioners (RCGP) and the Royal College of Nursing (RCN) as well as commissioners and providers of abortion services within the National Health Service (NHS) and the independent sector, and a member of the RCOG Consumers' Forum.

All members of the Group made formal declarations of interest, which are detailed in Appendix 1. The College was of the opinion that in each case the interests declared did not conflict with the guideline development process.

The members of the Group were:

Professor Anna Glasier FRCOG (Chair), Universities of Edinburgh and London, RCOG nominee

Ms Toni Belfield, RCOG Consumers' Forum representative

Dr Sharon Cameron FRCOG, University of Edinburgh, RCOG nominee

Ms Joanne Fletcher, RCN nominee

Dr Katharine A Guthrie FRCOG FFSRH, FSRH nominee

Dr Sarah Jarvis, RCGP nominee

Dr Patricia Lohr FACOG, British Pregnancy Advisory Service nominee

Ms Fiona Loveless, Marie Stopes International nominee

Dr Tahir Mahmood FRCOG, ex-RCOG Vice President (Standards)

Dr Susan Mann, University College London, RCOG nominee

Dr R Kristina A Naidoo MRCOG, St Mary's Hospital, Manchester, RCOG nominee

Mr Kamal N Ojha MRCOG, St George's Hospital, London, RCOG nominee

Dr Kate Paterson MRCOG, Imperial College Healthcare NHS Trust, London, RCOG nominee

Dr Alison Richardson MRCOG, Peninsula Deanery, RCOG nominee



Ms Jackie Routledge, North Lancashire Primary Care Trust

Professor Allan Templeton FRCOG, University of Aberdeen, RCOG nominee

Ms Claudette Thompson, DH observer

Ms Lisa Westall, DH observer.

The Group wishes to acknowledge the substantive work on the first two guideline versions led by Dr Gillian Penney FRCOG. The Group was fortunate that during 2009/10 the Human Reproduction Programme of the World Health Organization (WHO) undertook a formal exercise to update its own guidelines for safe abortion (*Safe Abortion: Technical and Policy Guidance for Health Systems*<sup>2</sup>). The WHO kindly made available to the RCOG all of the updated systematic reviews of the evidence prepared for the WHO process and Dr Nathalie Kapp, Medical Officer in the WHO Department of Reproductive Health, attended a number of meetings of the Guideline Development Group (GDG).

### **Nominated peer reviewers**

Comments were invited from the following nominated individuals during the peer review stage. A summary table of comments received and actions taken is available on request from the RCOG. All nominated peer reviewers made formal declarations of interest, which are detailed in Appendix 1.

Ms Myat Arrowsmith, Department of Primary Care and Public Health, Imperial College London

Dr Edna Astbury-Ward PhD MSc RGN Dip H Ed, Sessional Lecturer Nursing, Institute of Health, Medical Sciences & Society; Visiting Research Fellow at Social Inclusion Research Unit, Glyndwr University

Mrs Tracy Burton, Health Improvement Principal, NHS Nottinghamshire County

Dr Lucy E Caird FRCOG, Consultant Obstetrician and Gynaecologist, Raigmore Hospital, NHS Highland

Ms Sima Chaudhury, HIV Commissioning Manager Voluntary Sector, Strategic Commissioning, NHS Croydon

Ms Dianne Crowe, Clinical Nurse Specialist, Hexham Hospital, Northumbria Healthcare NHS Foundation Trust

Ms Sarah Doran, Public Health Manager, NHS Manchester

Ms Su Everett, Senior Lecturer, Middlesex University

Dr Kathy French, Clinical Director, Brook; Nurse Adviser, London Sexual Health Programme

Professor Kristina Gemzell Danielson, Professor in Obstetrics and Gynaecology, Karolinska Institutet, Sweden

Professor David A Grimes MD, Professor of Obstetrics and Gynaecology, University of North Carolina School of Medicine, USA

Dr Sally Hope, GP with special interest in women's health, Woodstock Surgery (Oxford); Honorary Research Fellow in Women's Health, University of Oxford

Dr Allyson Lipp, Principal Lecturer, Faculty of Health, Sport and Science, University of Glamorgan

Ms Mandy Myers, Director of Nursing, British Pregnancy Advisory Service

Dr Victoria M Pickles, Southampton General Hospital

Ms Laura Rutherford, EGAU Nurse Specialist/Deputy Matron, Peterborough and Stamford Hospitals  
NHS Foundation Trust

Dr John A D Spencer FRCOG, Consultant Obstetrician and Gynaecologist; Senior Clinical  
Consultant, Marie Stopes International (UK)

Dr Jane Wells, Assistant Director of Public Health, NHS Berkshire West

Dr Christine P West FRCOG, Consultant Obstetrician and Gynaecologist, Royal Infirmary of  
Edinburgh, NHS Lothian

Ms Maureen Whittaker FFPH, Associate Director of Public Health, NHS Derbyshire County and  
Bolsover District Council.

## Other peer reviewers

During the peer review stage, the draft document was posted on the RCOG website and comments were invited from any member of the public. A list of the individuals who sent comments, together with interests declared, comments received and actions taken, is available on request from the RCOG.

## Acknowledgements

The GDG wishes to thank Mrs Charnjit Dhillon, Director of Standards, and Miss Benedetta La Corte, Office for Research and Clinical Audit (ORCA) Coordinator, for their considerable work and support. Ms Elaine Garrett, RCOG Reader Services Librarian, assisted with the relevant literature.

The Group is also grateful to the Society for Family Planning (SFP) of the USA, who kindly shared a number of recent systematic reviews of relevance prior to their publication.



# Chapter 1

# Introduction and methodology

---

## 1.1 The guideline topic

Induced abortion is common: over 200 000 procedures are performed each year in Great Britain<sup>3,4</sup> and at least one-third of British women will have had an abortion by the time they reach the age of 45 years.<sup>5</sup> In a legal setting where sterile facilities are available, abortion is a safe procedure for which major complications and mortality are rare at all gestations. Abortion accounts for a significant proportion of the workload of many gynaecologists. The RCOG views induced abortion as a healthcare need as well as an important public health intervention, and reiterates the recommendation of the RCOG Working Party on Unplanned Pregnancy (1991)<sup>6</sup> that 'health authorities should accept responsibility for the abortions needed by women resident in their districts'.

Over 98% of induced abortions in Britain are undertaken because of risk to the mental or physical health of the woman or her children.<sup>3,4</sup> This guideline has been developed in relation to the care of women seeking abortion on such grounds. Separate RCOG publications address legal, ethical and service issues relating to the minority of abortions undertaken because of fetal abnormality.<sup>7</sup>

Data on abortion rates in relation to age, gestation, grounds for abortion and so on are routinely collected and published annually in Great Britain. These data are available for England and Wales from the DH<sup>8</sup> and for Scotland from the Information Services Division.<sup>9</sup>

In Chapter 3 of this guideline, legal issues directly relevant to the context of service provision are summarised. In 2007, the RCOG provided evidence to the House of Commons Science and Technology Committee, which was undertaking an inquiry into the scientific developments relating to the Abortion Act 1967.<sup>1</sup> A number of issues were highlighted for Members of Parliament to consider. Those relevant to the recommendations made in this guideline and to the provision of services included:

- the case for removing the need for the signature of two doctors authorising the abortion
- recommendations allowing greater responsibility for nurses already involved in service provision
- the recommendation that there were no reasons of safety, efficacy or acceptability for not allowing women to undergo the second stage of medical abortion at home.

Although the House of Commons chose not to amend the law relating to induced abortion in any of the above respects, the RCOG would still support these changes should any change in the regulations allow them to take place.

There are large geographical variations in access to NHS-funded abortion. In Scotland almost all abortions take place in NHS hospitals,<sup>4</sup> while in England and Wales the NHS has funding arrangements with the independent sector. In 2009, 94% of abortions were funded by the NHS; of which over half (60%) took place in the independent sector under NHS contract.<sup>3</sup> Notably, too, the independent sector undertakes the majority of abortions at late gestations. Thus, the clinical management of women requesting abortion spans a number of care sectors involving a range of professionals; these guidelines are written with this in mind.

The RCOG acknowledges the substantial role that nurses now take in the provision of abortion services and recognises the lack of a national standard for training for this role. The RCOG recommends that the RCN gives thought to developing and implementing specialist training programmes for nurses working in abortion care.

### 1.2 Aim of the guideline

Clinical guidelines have been defined as systematically developed statements which assist clinicians and patients in making decisions about appropriate treatment for specific conditions.

The aim of this guideline is to ensure that all women considering induced abortion have access to a service of uniformly high quality. It is hoped that this guideline will be implemented across all relevant healthcare sectors and will promote a consistent standard regardless of the sectors in which an individual woman is managed.

The guideline does not cover prevention of unintended pregnancy other than to recommend robust arrangements for contraceptive provision after abortion. Counselling to assist individuals in making the decision to have an abortion, rather than to continue the pregnancy, is not discussed in detail. The starting point of this guideline is the point at which a woman presents to a health provider requesting induced abortion of an unintended/unwanted pregnancy.

### 1.3 For whom is the guideline intended?

The guideline has been developed under the auspices of the RCOG for its Fellows and Members practising in Great Britain. The guideline is also intended for other professional groups who share in caring for women considering abortion: primary care teams, sexual health services, gynaecology nurses, staff participating in non-NHS assessment centres and clinics and all those professionals providing abortion counselling. Those with responsibilities for planning and/or commissioning abortion services, for example directors of public health, local government, NHS trust managers and managers of primary care groups, may also find the guideline helpful.

In this guideline, the term 'clinician' is used to refer to all healthcare professionals who participate in direct clinical patient care. Thus, the term includes doctors, nurses and midwives.

The guideline has been developed taking into account abortion legislation and available resources in Great Britain. The guideline may be used for reference in other countries, but readers should bear in mind that legislation, resources and facilities will be different.

The content of the guideline falls naturally into a number of chapters documenting the process of managing induced abortion. The text in each chapter gives supporting evidence for the recommendations. Inevitably, there is considerable overlap between chapters, and referring to one single recommendation out of context of the guideline in its entirety may lead to misinterpretation.

## 1.4 Local protocol development

It is anticipated that this national guideline will be used as the basis for the development of local protocols or guidelines which will take into account local service provision and the needs and preferences of the local population. Such local adaptation should take place in a similar multidisciplinary group in consultation with all stakeholders affected by the recommendations. It is essential that commissioners of health care, as well as general practitioners (GPs), specialists and service users, take part in such a process.<sup>10</sup>

## 1.5 Methods used in the development of the guideline

### Literature search strategy

The aim of the literature review was to identify and synthesise relevant evidence within the published literature, thus enabling clinical practice recommendations to be based on evidence wherever possible.

In developing the earlier versions of this guideline, searches were carried out for each topic of interest. The electronic database MEDLINE (Ovid version including foreign language publications) was searched for the period January 1966 to September 2003. The searches were performed using relevant medical subject headings (MeSH) terms and text words. In addition, the electronic database EMBASE was searched between 1974 and September 2003 to identify publications, usually European, not indexed on MEDLINE. The Cochrane Library was searched to identify systematic reviews, meta-analyses and controlled clinical trials. Reference lists of non-systematic review articles and studies obtained from the initial search were trawled and journals in the RCOG library were hand-searched to identify articles not yet indexed. There was no systematic attempt to search the 'grey literature' (conferences, abstracts, theses and unpublished trials).

In developing this edition, similar literature searches were carried out covering the period 2003 to February 2011.

Rather than undertaking a new search, where available, systematic reviews were used, including those undertaken for the revision of the WHO guidelines for safe abortion.<sup>2</sup> These reviews are listed in Appendix 2 together with the tables of evidence used in the absence of appropriate published reviews. For WHO, Cochrane systematic reviews including randomised clinical trials (RCTs) were the primary source of evidence. Relevant Cochrane systematic reviews were identified and the need for updating these was determined. Relevant and possibly relevant Cochrane systematic reviews were identified and those that were considered outdated were updated using their specific, standard search strategies. Additionally, three systematic reviews were conducted outside of the Cochrane Database of Systematic Reviews and were published in peer-reviewed journals. The search strategies and the specific criteria for including and excluding trials identified by the search are provided in the corresponding systematic review.

### Sifting and reviewing the literature

For both the original and updated literature searches, a preliminary scrutiny of titles and abstracts was undertaken and full papers were obtained if they were relevant to the topic. Articles not relevant to the subject in question were rejected, as were articles where relevant outcomes were not reported. For all the subject areas, published systematic reviews or meta-analyses were used, if available. If these did not exist, RCTs were sought. For subject areas where a body of systematic

review or randomised trial evidence was available, studies of less robust design were not systematically sought. Where there were no relevant published RCTs, other appropriate experimental or observational studies were sought.

### Synthesising the evidence

Identified articles were assessed methodologically and the best available evidence was used to form and support the recommendations. If a good systematic review, meta-analysis or RCT existed in relation to a topic, studies of a weaker design were ignored. The evidence was synthesised using qualitative methods. These involved summarising the content of identified papers in the form of evidence tables and agreeing brief recommendation statements that accurately reflected the relevant evidence. Quantitative techniques (meta-analyses) were not performed by the GDG because of time constraints and the difficulty of combining studies of various designs.

### Forming and grading the recommendations

The definitions of the types of evidence used in this guideline originate from the US Agency for Health Care Policy and Research (Table 1.1).<sup>11</sup> Recommendations were based on, and explicitly linked to, the evidence that supports them. Recommendations were derived from available research evidence using consensus methods. Where there were areas without available research evidence, consensus was again used.

As part of the consensus process, the recommendations published in the 2004 guideline were circulated to members of the GDG. For each recommendation, members were asked to indicate whether they thought that the recommendation should be included as it stood, included with modifications or excluded, and whether any new recommendations should be developed. This approach ensured that all Group members had an equal opportunity to express their views on recommendations. The Group used an informal consensus process to agree modified recommendations.

The recommendations were then graded according to the level of evidence upon which they were based. The grading scheme used was formulated by the Clinical Outcomes Group and recommended by the NHS Executive.<sup>12</sup>

The strength of the evidence on which each recommendation is based is shown in Table 1.2. It is accepted that, in this grading system, the evidence itself is not graded according to quality, although it is discussed narratively in the text supporting each recommendation. It is also accepted that RCTs may not always be the most appropriate study design (for example, to investigate diagnostic tests).<sup>11</sup> Similarly, there may be clinical questions that cannot easily be answered by experiment but nevertheless represent good practice. Such recommendations will automatically be graded C or ✓.

**Table 1.1 Levels of evidence**

Level	Evidence
Ia	Evidence obtained from meta-analysis of randomised trials
Ib	Evidence obtained from at least one randomised controlled trial
IIa	Evidence obtained from at least one well-designed controlled study, without randomisation
IIb	Evidence obtained from at least one other type of well-designed quasi-experimental study
III	Evidence obtained from well-designed non-experimental descriptive studies, correlation studies and case studies
IV	Evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities

**Table 1.2 Forming recommendations**

Grade of recommendation	Evidence level
A	Requires at least one randomised controlled trial as part of a body of literature of overall good quality and consistency addressing the specific recommendation ( <i>evidence levels Ia, Ib</i> )
B	Requires the availability of well-conducted clinical studies, but no randomised clinical trials on the topic of the recommendation ( <i>evidence levels IIa, IIb, III</i> )
C	Requires evidence obtained from expert committee reports or opinions and/or clinical experience of respected authorities; indicates an absence of directly applicable clinical studies of good quality ( <i>evidence level IV</i> )
Good practice points ✓	Recommended best practice based on the clinical experience of the Guideline Development Group

The validity of some grade C and ✓ recommendations may be questionable, as they are not based upon incontrovertible evidence. However, the views of the 2010/2011 GDG, combined with comments from extensive peer review, as detailed below, suggest that the recommendations with this grading are acceptable to a wide body of expert opinion.

### Scope and methods of peer review

Successive drafts of the original guideline were written and discussed by the GDG until a formal peer review process was undertaken. Members of the Group suggested names of individuals or organisations from the area of practice that they represented and the draft guideline was sent to individuals chosen by the DH and the RCOG. The draft was also posted on the RCOG website and comments were invited from any member of the public. Comments received were reviewed by the development team and changes were made to the document where necessary. Equal consideration was given to comments made by the nominated peer reviewers and members of the public, and all comments were taken into account when finalising the document.

## 1.6 Implementation and review

This updated guideline was published in 2011. The RCOG will maintain a watching brief on the need to review recommendations in the light of new research evidence.











# Chapter 2

## Summary of recommendations



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### 2.1 Commissioning and organising services


#### Access to services

-  4.1 Commissioners and providers of abortion services should have local strategies in place for providing information for women and healthcare professionals on routes of access, including self-referral.
-  4.2 Commissioners should ensure that women have access to abortion services locally.
-  4.3 Services should have arrangements which facilitate access without delay for referrals from a wide range of sources.
-  4.4 Where services have no on-site provision for emergency care, there must be robust and timely pathways for referral.
-  4.5 Commissioners should ensure that abortion providers do not restrict access on the grounds of age, ethnicity, religious beliefs, disability or sexual orientation.
-  4.6 Commissioners should ensure that access is not restricted on the grounds of marital status or the number of previous abortions.
-  4.7 Professionals who are ethically opposed to abortion have a duty of care to refer onward women requesting abortion without delay.
-  4.8 Services should facilitate access for all women, particularly those who traditionally have difficulties accessing health services.

#### Tailored care

-  4.9 Services should make sure that a female member of staff is available if requested.
-  4.10 Services should be culturally sensitive and professional interpreters should be available if required.

#### Information provision

-  4.11 Services should make sure that written, objective, evidence-guided information is available for women considering abortion to take away before the procedure. Information should be available in a variety of languages and formats.

- ✓ 4.12 Services are encouraged to adapt nationally developed patient information for local use.
- ✓ 4.13 Staff providing abortion services should provide up-to-date evidence-guided information, supported by local data where robust, about complications and sequelae of abortion.
- ✓ 4.14 Women should have access to objective information and, if required, counselling and decision-making support about their pregnancy options.
- C 4.15 Information for women and providers should emphasise the duty of confidentiality.

### Initial assessment

- ✓ 4.16 There should be a pathway to tertiary medical care for women with significant medical conditions.
- C 4.17 Women who decide to continue with the pregnancy should be referred for antenatal care without delay.
- ✓ 4.18 Women who have a non-viable pregnancy require appropriate management, not forgetting contraception and sexual health care.
- C 4.19 Services should identify issues which make women particularly vulnerable (for example, child protection needs and domestic abuse/gender-based violence) and refer/signpost them on to appropriate support services in a timely manner.
- ✓ 4.20 The assessment (including support services such as ultrasound) should be provided within a dedicated time and space and by a team committed to women requesting abortion, specifically separate from miscarriage and antenatal services.
- C 4.21 Elements of the assessment consultation can be provided via the telephone and/or the internet. However, women should be able to access face-to-face consultation, if preferred.

### Arrangements for the procedure

- ✓ 4.22 A system should be in place to ensure that doctors within the abortion service complete form HSA1 (Certificate A in Scotland) if a woman refers herself, or if the referring doctor is not willing to support the abortion.
- C 4.23 With respect to the method used to induce the abortion, service arrangements should be such that:
  - Services should be commissioned for all women requesting induced abortion at all gestations.
  - If a service cannot offer an abortion by any method after a specific gestation, timely onward referral must be ensured.
  - All services should be able to offer abortion by at least one of the recommended methods for each gestation band.
  - All services should be able to offer a **choice** of recommended methods for each gestation band.
  - Services should provide surgical abortion under both local and general anaesthesia.

- C** 4.24 To minimise delay, service arrangements should be such that:
- Referral to an abortion provider should be made within 2 working days.
  - Abortion services must offer assessment within 5 working days of referral or self-referral.
  - Services should offer women the abortion procedure within 5 working days of the decision to proceed.
  - The total time from seeing the abortion provider to the procedure should not exceed 10 working days.
  - Women requiring abortion for urgent medical reasons should be seen as soon as possible.
- ✓** 4.25 Women should be informed that they have a right to delay or cancel appointments and/or the procedure should they wish.
- ✓** 4.26 Upon referral, women should be given the service provider's contact details.
- C** 4.27 Inpatient services, provided in an appropriate centre and clinical setting, should be available for women who are unsuitable for or who do not desire home or day case care.
- ✓** 4.28 Services should have a protocol in place allowing early discharge after misoprostol for women undergoing medical abortion up to 9 weeks of gestation.
- ✓** 4.29 The setting for abortion should be sensitive and responsive to women's needs, and should respect the need for privacy and dignity.
- 4.30 Commissioners should ensure that services meet the recommendations relating to:
- B Contraception after the abortion
  - A and C Antibiotic prophylaxis
  - B Screening for sexually transmitted infections (STIs)
  - C Information provision after the abortion
  - C Counselling after the abortion

## 2.2 Adverse effects, complications and sequelae of abortion: what women need to know

- B** 5.1 Women should be informed that abortion is a safe procedure for which major complications and mortality are rare at all gestations.
- ✓** 5.2 Complications and risks should be discussed with women in a way that they can understand and should emphasise the overall safety of the procedure.
- ✓** 5.3 Services should provide women with information about the physical symptoms and sequelae that may be experienced after abortion.
- ✓** 5.4 Service providers should inform women about the range of emotional responses that may be experienced during and following an abortion. Providers should be aware that women with a past history of mental health problems are at increased risk of further problems after an unintended pregnancy.

### Abortion complications

- B** 5.5 Women should be informed of the following rare but serious complication that may occur:
- Uterine rupture has been reported in association with medical abortion at late gestations. The risk is less than 1 in 1000.
- B** 5.6 Women should be informed of the uncommon complications that may occur and of their possible clinical consequences. These may include:
- Severe bleeding requiring transfusion; the risk is lower for early abortions, occurring in less than 1 in 1000, rising to around 4 in 1000 at gestations beyond 20 weeks.
  - Uterine perforation (surgical abortion only); the risk is in the order of 1–4 in 1000 and is lower for early abortions and those performed by experienced clinicians.
  - Cervical trauma (surgical abortion only); the risk of damage to the external os is no greater than 1 in 100 and is lower for early abortions and those performed by experienced clinicians.
  - Women must be informed that, should one of these complications occur, further treatment in the form of blood transfusion, laparoscopy or laparotomy may be required.

### Failed abortion and continuing pregnancy

- B** 5.7 Women should be informed that surgical and medical methods of abortion carry a small risk of failure to end the pregnancy (less than 1 in 100) , necessitating another procedure.
- C** 5.8 Women should be informed that there is a small risk (usually much less than 5%) of the need for further intervention, such as surgical intervention following medical abortion or re-evacuation following surgical abortion.

### Post-abortion infection

- B** 5.9 Women should be informed that infection of varying degrees of severity may occur after medical or surgical abortion and is usually caused by pre-existing infection. Prophylactic antibiotic use and bacterial screening for lower genital tract infection reduces this risk.

### Breast cancer

- A** 5.10 Women should be informed that induced abortion is not associated with an increase in breast cancer risk.

### Future reproductive outcome

- B** 5.11 Women should be informed that there are no proven associations between induced abortion and subsequent ectopic pregnancy, placenta praevia or infertility.

### Preterm birth

- B** 5.12 Women should be informed that induced abortion is associated with a small increase in the risk of subsequent preterm birth, which increases with the number of abortions. However, there is insufficient evidence to imply causality.

### Psychological sequelae

- B** 5.13 Women with an unintended pregnancy should be informed that the evidence suggests that they are no more or less likely to suffer adverse psychological sequelae whether they have an abortion or continue with the pregnancy and have the baby.
- B** 5.14 Women with an unintended pregnancy and a past history of mental health problems should be advised that they may experience further problems whether they choose to have an abortion or to continue with the pregnancy.

## 2.3 Pre-abortion management

- ✓** 6.1 Prior to referral, pregnancy should be confirmed by history and a reliable urine pregnancy test.

### The abortion decision

- C** 6.2 Healthcare staff caring for women requesting abortion should identify those who require more support in the decision-making process.
- C** 6.3 Women who are certain of their decision to have an abortion should not be subjected to compulsory counselling.
- ✓** 6.4 Pathways to additional support, including counselling and social services, should be available.
- ✓** 6.5 Women should be given information about the different methods of abortion appropriate to gestation, the potential adverse effects and complications, and their clinical implications.
- ✓** 6.6 Where possible, women should be given the abortion method of their choice.

### Blood tests

- C** 6.7 Pre-abortion assessment should always include:
  - determination of rhesus blood status.Where clinically indicated, pre-abortion assessment should also include:
  - determination of blood group with screening for red cell antibodies
  - measurement of haemoglobin concentration
  - testing for haemoglobinopathies.
- B** 6.8 It is not cost-effective or necessary to routinely cross-match women undergoing induced abortion.

### Venous thromboembolism risk assessment

- ✓** 6.9 All women undergoing an abortion should undergo a venous thromboembolism (VTE) risk assessment.

## Cervical cytology

- ✓ 6.10 Women who have not had cervical cytology screening within the recommended interval should be offered screening within the abortion service, or advised on when and where to obtain it.

## Ultrasound scanning

- B 6.11 Use of **routine** pre-abortion ultrasound scanning is unnecessary.
- C 6.12 Ultrasound scanning must be available to all services as it may be required as part of the assessment.
- ✓ 6.13 Ultrasound scanning should be provided in a setting and manner sensitive to the woman's situation.
- C 6.14 Before ultrasound is undertaken, women should be asked whether they would wish to see the image or not.

## Prevention of infective complications

- A  
C 6.15 Services should offer antibiotic prophylaxis effective against *Chlamydia trachomatis* and anaerobes for both surgical abortion (evidence grade: A) and medical abortion (evidence grade: C).
- C 6.16 The following regimens are suitable for peri-abortion antibiotic prophylaxis:
  - azithromycin 1 g orally on the day of abortion, **plus** metronidazole 1 g rectally or 800 mg orally prior to or at the time of abortion
  - OR**
  - doxycycline 100 mg orally twice daily for 7 days, starting on the day of the abortion, **plus** metronidazole 1 g rectally or 800 mg orally prior to or at the time of the abortion
  - OR**
  - metronidazole 1 g rectally or 800 mg orally prior to or at the time of abortion for women who have tested negative for *C. trachomatis* infection.

## STI screening

- B 6.17 All women should be screened for *C. trachomatis* and undergo a risk assessment for other STIs (for example, HIV, gonorrhoea, syphilis), and be screened for them if appropriate.
- C 6.18 A system for partner notification and follow-up or referral to a sexual health service should be in place.
- ✓ 6.19 Services should make available information about the prevention of STIs and offer condoms for STI prevention to women undergoing abortion.

## Contraception

- C 6.20 All appropriate methods of contraception should be discussed with women at the initial assessment and a plan agreed for contraception after the abortion.

## Feticide

- C** 6.21 Feticide should be performed before medical abortion after 21 weeks and 6 days of gestation to ensure that there is no risk of a live birth.

## 2.4 Abortion procedures

### Surgical methods

#### *Vacuum aspiration*

- B** 7.1 Vacuum aspiration is an appropriate method of surgical abortion up to 14 weeks of gestation.
- A** 7.2 Either electric or manual vacuum aspiration may be used as both are effective and acceptable to women and clinicians.
- B** 7.3 Vacuum aspiration under 7 weeks of gestation should be performed with appropriate safeguards to ensure complete abortion, including inspection of aspirated tissue.
- A** 7.4 Vacuum aspiration may be performed from 14 to 16 weeks of gestation; large-bore cannulae and suction tubing may be required to complete the procedure without the use of forceps to remove larger fetal parts.
- ✓** 7.5 During vacuum aspiration, the uterus should be emptied using the suction cannula and blunt forceps (if required) only. The procedure should not be routinely completed by sharp curettage.
- C** 7.6 Access to ultrasound during vacuum aspiration is recommended but not routinely required for uncomplicated procedures.

#### *Dilatation and evacuation*

- A** 7.7 Surgical abortion by dilatation and evacuation (D&E), preceded by cervical preparation, is appropriate for pregnancies above 14 weeks of gestation.
- B** 7.8 Continuous ultrasound guidance during D&E is recommended to reduce the risk of surgical complications.

#### *Cervical preparation for surgical abortion*

- B** 7.9 Cervical preparation should be considered in all cases.
- B** 7.10 The following regimens are recommended for cervical preparation up to 14 weeks of gestation:
- Misoprostol 400 micrograms administered vaginally 3 hours prior to surgery or sublingually 2–3 hours prior to surgery.
- B** 7.11 Vaginal misoprostol can be administered either by the woman herself or by a clinician.
- B** 7.12 After 14 weeks of gestation, osmotic dilators provide superior dilatation to medical methods; however, misoprostol is an acceptable alternative up to 18 weeks of gestation.
- A** 7.13 Use of medications containing oxytocin or ergometrine is not recommended for prophylaxis to prevent excessive bleeding at the time of vacuum aspiration.

## Pain relief for surgical abortion

### *Anaesthesia*

- B** 7.14 Services should be able to provide surgical abortions without resort to general anaesthesia.
- C** 7.15 If conscious sedation is used during surgical abortion, it should be undertaken only by trained practitioners and in line with DH guidance.

### *Analgesia*

- B** 7.16 Women should routinely be offered pain relief such as non-steroidal anti-inflammatory drugs (NSAIDs) during surgical abortion.
- A** 7.17 Prophylactic paracetamol (oral or rectal) is ineffective in reducing pain after surgical abortion and is not recommended.

## Medical methods

- B** 7.18 Medical abortion regimens using 200 mg oral mifepristone and misoprostol are effective and appropriate at any gestation.

### *Medical abortion at ≤ 63 days of gestation (early medical abortion)*

- B** 7.19 The following regimens are recommended for early medical abortion:
  - at ≤ 63 days of gestation, mifepristone 200 mg orally followed 24–48 hours later by misoprostol 800 micrograms given by the vaginal, buccal or sublingual route
  - at ≤ 49 days, 200 mg oral mifepristone followed 24–48 hours later by 400 micrograms of oral misoprostol.
- B** 7.20 For women at 50–63 days of gestation, if abortion has not occurred 4 hours after administration of misoprostol, a second dose of misoprostol 400 micrograms may be administered vaginally or orally (depending upon preference and amount of bleeding).

### *Place of misoprostol administration*

- ✓** 7.21 It is safe and acceptable for women who wish to leave the abortion unit following misoprostol administration to complete the abortion at home. There must be an adequate support strategy and robust follow-up arrangements for these women.

### *Medical abortion at 9–13 weeks of gestation*

- A** 7.22 The following regimen is recommended for medical abortion between 9 and 13 weeks of gestation:
  - mifepristone 200 mg orally followed 36–48 hours later by misoprostol 800 micrograms vaginally. A maximum of four further doses of misoprostol 400 micrograms may be administered at 3-hourly intervals, vaginally or orally.



### *Medical abortion at 13–24 weeks of gestation*

- A** 7.23 The following regimen is recommended for medical abortion between 13 and 24 weeks of gestation:
- mifepristone 200 mg orally, followed 36–48 hours later by misoprostol 800 micrograms vaginally, then misoprostol 400 micrograms orally or vaginally, 3-hourly, to a maximum of four further doses.
  - If abortion does not occur, mifepristone can be repeated 3 hours after the last dose of misoprostol and 12 hours later misoprostol may be recommenced.
- B** 7.24 Surgical evacuation of the uterus is not required routinely following medical abortion between 13 and 24 weeks of gestation. It should be undertaken only if there is clinical evidence that the abortion is incomplete.

### *Pain relief for medical abortion*

- B** 7.25 Women should routinely be offered pain relief (for example, NSAIDs) during medical abortion.
- A** 7.26 Oral paracetamol has not been shown to reduce pain more than placebo during medical abortion and is not recommended.
- B** 7.27 Some women may require additional narcotic analgesia, particularly after 13 weeks of gestation.

## **Histopathology**

- C** 7.28 Routine histopathological examination of tissue obtained at abortion procedures is not recommended.

## **Gestational trophoblastic neoplasia**

- C** 7.29 Routine screening of women for gestational trophoblastic neoplasia (GTN) at the time of abortion is not recommended; providers should be aware of the signs and symptoms and, where appropriate, facilitate referral into a GTN monitoring programme.

## **2.5 Care after the abortion**

### **Rhesus prophylaxis**

- B** 8.1 Anti-D IgG should be given, by injection into the deltoid muscle, to all non-sensitised RhD negative women within 72 hours following abortion, whether by surgical or medical methods.

### **Information after abortion**

- ✓** 8.2 On discharge, all women should be given a letter providing sufficient information about the procedure to allow another practitioner elsewhere to manage any complications.

- ✓ 8.3 Following abortion, women should be provided with verbal and written information about:
  - symptoms they may experience, emphasising those which would necessitate an urgent medical consultation
  - symptoms suggestive of continuing pregnancy.
- ✓ 8.4 Independent providers of abortion services should have arrangements in place for referring women into NHS services for emergency assessment/admission.
- ✓ 8.5 A 24-hour telephone helpline number should be available for women to use after abortion if they have any concerns.

### Follow-up after abortion


- B 8.6 There is no medical need for routine follow-up after surgical abortion or after medical abortion if successful abortion has been confirmed at the time of the procedure.
- ✓ 8.7 Women having a medical abortion in whom successful abortion has **not** been confirmed at the time of the procedure should be offered follow-up to exclude continuing pregnancy.
- ✓ 8.8 All women having an abortion should be able to choose to return for routine follow-up if they so wish.
- ✓ 8.9 Referral should be available for any woman who may require additional emotional support or whose mental health is perceived to be at risk.
- ✓ 8.10 All women should be advised where to seek help if they have any concerns or if they need further contraceptive advice or provision.
- C 8.11 Ultrasound examination should not be used routinely to screen women for incomplete abortion.
- C 8.12 The decision to evacuate the uterus following incomplete abortion should be based on clinical signs and symptoms and not on ultrasound appearance.

### Contraception after abortion

- B 8.13 Abortion services should be able to provide all methods of contraception, including long-acting methods, immediately after abortion.
- B 8.14 Women should be advised of the greater effectiveness of long-acting reversible methods of contraception.
- B 8.15 Before she is discharged, future contraception should have been discussed with each woman and contraceptive supplies should have been offered.
- B 8.16 The chosen method of contraception should be initiated immediately.
- B 8.17 Intrauterine contraceptives can be inserted immediately following medical and surgical abortion at all gestations as long as it is reasonably certain that the woman is not still pregnant.
- ✓ 8.18 Women who choose not to start a contraceptive method immediately should be given information about local contraceptive providers in addition to their GP.

-  8.19 Abortion services should have an agreed pathway of care to local community sexual health services.

### **Sterilisation**

-  8.20 Sterilisation can be safely performed at the time of induced abortion, although this may be more likely to be associated with regret and failure.

# Chapter 3

## Legal aspects of abortion

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### 3.1 The Abortion Act

The Abortion Act 1967,<sup>13</sup> as amended by the Human Fertilisation and Embryology Act 1990,<sup>14</sup> governs abortion in England, Scotland and Wales (Great Britain). Legal requirements apply to certification and notification of abortion procedures. An abortion can take place only if two registered medical practitioners are of the opinion, formed in good faith, that an abortion is justified within the terms of the Act. Within the terms of the Abortion Act, only a registered medical practitioner\* (doctor) can terminate a pregnancy. The notification form must be completed by the doctor taking responsibility for the procedure. In practice, a nurse or midwife\* (clinicians) may administer the drugs used for medical abortion once these have been prescribed by a doctor. The Abortion Act requires that 'any treatment for the termination of pregnancy' must take place in an NHS hospital or approved premises. 'Treatment' includes prescription and administration of both drugs used for the two stages of medical abortion.<sup>15</sup>

The Abortion Act was amended in 1990 to make clear that selective reduction of a multiple pregnancy is covered by abortion legislation. A woman who is carrying more than one fetus can have an abortion only if two doctors agree she has grounds under the Act. In addition, in 1990, Section 1(3A) of the Abortion Act<sup>16</sup> was inserted to give the Secretary of State for Health (who also covers Wales and Scotland) the power to approve 'a class of places' outside NHS hospitals for medical abortion. This provision has never been used.

#### Abortion forms

Doctors are under a legal obligation to complete the following forms:

- HSA1 (Certificate A in Scotland): Two doctors are required to sign the HSA1 form, which is the certificate of opinion before an abortion is performed under Section 1(1) of the Abortion Act.<sup>16</sup> The HSA1 form must be kept for 3 years.
- HSA2 (Certificate B in Scotland): To be completed by the doctor within 24 hours of an emergency abortion and kept for 3 years. In cases such as these, the requirement for the opinion of two doctors does not apply.
- HSA4: Must be completed by the doctor and sent to the Chief Medical Officer (CMO) either manually or electronically within 14 days of the abortion taking place. As is the case with the manual form, only doctors terminating the pregnancy are able to authorise the electronic form. In Scotland, the equivalent Notification Form must be sent to the CMO in Scotland within 7 days of the abortion taking place. There are as yet no electronic means of notification.

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\* Registered medical practitioners will be referred to as doctors throughout this chapter. The term clinicians refers to nurses and midwives in this chapter.

For England, the 2002 amendments to the abortion regulations<sup>17</sup> changed the content of the HSA4 form through which doctors notify the CMO of every abortion performed. Guidance notes on completing the amended form have been published.<sup>18</sup> Wales has also adopted the amended HSA4.

### Application of the Abortion Act in Northern Ireland

The Abortion Act<sup>13</sup> does not apply in Northern Ireland. It is lawful to perform an abortion in Northern Ireland only where:

- it is necessary to preserve the life of the woman, or
- there is a risk of real and serious adverse effect on the woman's physical or mental health, which is either long-term or permanent.

As is the position with the Abortion Act, where there is a real and serious threat to the life of the woman, there is no limit set on the gestational age at which the abortion may be carried out. In any other circumstance it would be unlawful to perform such a procedure. Fetal abnormality is not recognised as a ground in itself for abortion. The Department of Health, Social Services and Public Safety publishes statistics on the number of abortions undertaken in Northern Ireland.

### Application of the Abortion Act in Crown Dependencies

The Abortion Act does not apply in the Isle of Man, Jersey or Guernsey and women from these countries are not considered to be residents of Great Britain.

### Statutory grounds for termination of pregnancy

Abortion is legal in Great Britain if two doctors decide in good faith that in relation to a particular pregnancy one or more of the grounds specified in the Abortion Act are met.

- A** The continuance of the pregnancy would involve risk to the life of the pregnant woman greater than if the pregnancy were terminated: Abortion Act 1967 as amended, Section 1(1)(c).
- B** The termination is necessary to prevent grave permanent injury to the physical or mental health of the pregnant woman: Section 1(1)(b).
- C** The pregnancy has not exceeded its 24th week and the continuance of the pregnancy would involve risk, greater than if the pregnancy were terminated, of injury to the physical or mental health of the pregnant woman: Section 1(1)(a).
- D** The pregnancy has not exceeded its 24th week and the continuance of the pregnancy would involve risk, greater than if the pregnancy were terminated, of injury to the physical or mental health of any existing child(ren) of the family of the pregnant woman: Section 1(1)(a).<sup>16</sup>
- E** There is a substantial risk that if the child were born it would suffer from such physical or mental abnormalities as to be seriously handicapped: Section 1(1)(d).

The Act also permits abortion to be performed in an emergency if a doctor is of the opinion formed in good faith that termination is immediately necessary:

- F** to save the life of the pregnant woman: Section 1(4)
- G** to prevent grave permanent injury to the physical or mental health of the pregnant woman: Section 1(4).

Most abortions are undertaken on ground C: that the pregnancy has not exceeded its 24th week and that continuance would involve risk, greater than if the pregnancy were terminated, of injury to the physical or mental health of the woman.

The number of abortions has risen steadily since 1992. However, more recently there has been a small decrease in the total number of abortions. In England and Wales in 2009, the vast majority (97%) of abortions were carried out under ground C and a further 1% under ground D. A similar proportion was carried out under ground E. Grounds A and B together accounted for less than 0.5% of abortions. Abortions are rarely carried out under grounds F or G.<sup>3</sup> In Scotland in 2009, 98.6% of abortions were undertaken on grounds C or D and 1% on ground E. Grounds A/B and grounds F/G each accounted for less than 0.1% of all abortions in 2009.<sup>4</sup> Further details on abortion statistics for England, Wales and Scotland can be found at: [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsStatistics/DH\\_116039](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsStatistics/DH_116039) and <http://www.isdscotland.org/isd/1918.html>.

### Place of abortion

Treatment for abortion (medical and surgical) must be carried out in an NHS hospital (hospital vested in an NHS trust, primary care trust or foundation trust) or approved independent sector place. For these purposes, if it is not clear whether the NHS premises fall within this definition, legal advice should be sought. Independent sector providers in England must register with the Care Quality Commission and seek Secretary of State for Health approval in order to operate. Independent sector providers in Scotland must register with Healthcare Improvement Scotland and seek Scottish Ministers' approval in order to operate.

## 3.2 Good professional practice

### The role of doctors

Where a doctor prescribes the treatment for the abortion, remains in charge and accepts responsibility throughout and the treatment is carried out in accordance with his/her directions, the pregnancy is 'terminated by a registered medical practitioner' for the purposes of the Abortion Act 1967 (as amended).<sup>13</sup> Doctors providing abortion care are bound by the same duties of a doctor, as laid down by the General Medical Council (GMC) in its Good Medical Practice Guidance (2008),<sup>19</sup> for all other aspects of their clinical practice. These principles of good practice bear repetition here:

- make the care of your patient your first concern
- protect and promote the health of patients and the public
- provide a good standard of practice and care
  - keep your professional knowledge and skills up to date
  - recognise and work within the limits of your competence
  - work with colleagues in the ways that best serve patients' interests
- treat patients as individuals and respect their dignity
  - treat patients politely and considerately
  - respect patients' right to confidentiality
- work in partnership with patients
  - listen to patients and respond to their concerns and preferences
  - give patients the information they want or need in a way they can understand
  - respect patients' right to reach decisions with you about their treatment and care
  - support patients in caring for themselves to improve and maintain their health

- be honest and open and act with integrity
  - act without delay if you have good reason to believe that you or a colleague may be putting patients at risk
  - never discriminate unfairly against patients or colleagues
  - never abuse your patients' trust in you or the public's trust in the profession.

Doctors are legally required under the Abortion Act 1967 (as amended)<sup>13</sup> to complete abortion forms for every abortion performed, whether carried out in the NHS or an approved independent sector place and whether or not the woman is a Great Britain resident. See Section 3(1) of the Act<sup>20</sup> covering abortion forms for further details on this.

### The role of nurses

In accordance with the Abortion Act 1967,<sup>13</sup> the authorisation and provision of any abortion is the legal responsibility of a doctor. In the case of medical abortion, this means that a doctor has to remain in charge throughout the abortion process and will prescribe the drugs and sign the relevant paperwork.<sup>21</sup> The RCN guidance on abortion care for nurses, midwives and specialist community public health nurses (2008) sets out good practice in this area and on wider abortion care.<sup>22</sup> In essence, a nurse or midwife may administer the drugs used for medical abortion at any gestation once these have been prescribed by the doctor concerned. Nurses cannot perform surgical abortions. In law, nurses have similar rights to conscientious objection as doctors. See Section 3(3) of the Act for further details on conscientious objection.<sup>20</sup>

### 3.3 Professionals' rights: conscientious objection to abortion

The Abortion Act has a conscientious objection clause, which permits doctors (and nurses) to refuse to participate in any treatment authorised by the Act if it conflicts with their religious or moral beliefs. This clause does not apply where it is necessary to save life or prevent grave permanent injury to the woman's physical or mental health.<sup>13</sup> The scope of the Act's conscientious objection clause was clarified in the House of Lords 1988 Janaway case.<sup>23</sup> In that case it was held that 'participate' should be given its ordinary and natural meaning of actually taking part in treatment, and did not extend to typing a referral letter. It is therefore likely that a refusal to participate in paperwork, administration or routine care (outside of treatment) connected with abortion procedures lies outside the terms of the conscientious objection clause. The Court considered, but did not decide, whether a refusal to sign a certificate of opinion was covered by the conscientious objection clause.

Doctors who have a conscientious objection to abortion must tell women of their right to see another doctor. NHS GPs who have contracted to provide contraceptive services and who have a conscientious objection to the abortion must, where appropriate, refer women promptly to another doctor.

The GMC's guidance covering personal beliefs and medical practice (2008) states: 'If carrying out a particular procedure or giving advice about it conflicts with your religious or moral beliefs, and this conflict might affect the treatment or advice you provide, you must explain this to the patient and tell them they have the right to see another doctor. You should make sure that information about alternative services is readily available to all patients. Children and young people in particular may have difficulty in making alternative arrangements themselves, so you must make sure that arrangements are made for another suitably qualified colleague to take over your role as quickly as possible.'<sup>19</sup>

In law, nurses have similar rights to conscientious objection. These are summarised in the RCN guidance on abortion care (2008);<sup>22</sup> the Nursing and Midwifery Council (NMC) has also produced some helpful guidance on this subject.<sup>24</sup> Like doctors, nurses have the right to refuse to take part in abortion but not to refuse to take part in emergency treatment.

Hospital managers have subsequently been asked to apply the principles as described above, at their discretion, to those ancillary staff involved in handling fetuses and fetal tissue.

### 3.4 Confidentiality

All women seeking abortion have the right to confidentiality. Only in exceptional circumstances, where the health, safety or welfare of a minor or other persons is at risk, may information be disclosed to a third party. The DH published *Confidentiality; NHS Code of Practice* in 2003.<sup>25</sup> This document sets out required practice for those who work within or under contract to NHS organisations. In addition, the Department for Education (formerly Department for Children, School and Families) published in 2008 *Information Sharing: Guidance for Practitioners and Managers*.<sup>26</sup> This guidance is designed to provide an overview of information sharing for those working directly with children, young people and vulnerable adults.

In Scotland, the leaflet *NHS Code of Practice on Protecting Patient Confidentiality* provides step-by-step advice for all staff on issues such as the laws governing data protection, how to obtain consent from patients for their information to be used and patients' rights of access to their personal health records.<sup>27</sup>

Abortion service providers must make women aware that the contents of the HSA4 form used to inform the CMO of abortions will be used for statistical purposes by the DH. The data published are anonymised. Similar arrangements apply in Scotland.

### 3.5 Disposal of fetal tissue

Fetal tissue must be treated with dignity and respect in accordance with local policies which reflect the Human Tissue Authority's Code of Practice 5, *Disposal of human tissue for fetuses born dead at or before 24 weeks of gestation*.<sup>28</sup> The Sands (2007) guidelines for professionals also argue the need for sensitive disposal.<sup>29</sup> In addition, the RCOG produced good practice guidance in 2005 on *Disposal Following Pregnancy Loss Before 24 Weeks of Gestation*.<sup>30</sup>

Women should be made aware that information on disposal options is available. Any personal wishes expressed should be met wherever possible.

In general, abortion service providers arrange for fetal material from late medical and surgical abortions to be incinerated. Some have chosen to have a contract with local crematoria or burial authorities for cremation or burial.

Women may decide to arrange disposal themselves and they are free to do so. The RCN guidance for nurses and midwives on *Sensitive Disposal of All Fetal Remains* (2007) looks at the options.<sup>31</sup>

Among women who have an early medical abortion (up to 63 days), some choose to pass the products of conception outside of hospital or clinic premises. The DH advises that abortion service providers should make provision for women to return products of conception to the provider for disposal if they so wish.<sup>32</sup> Women should be made aware that information on disposal options is available if they wish to have access to it. If they then decide not to receive any information about, or take part in, the disposal of the fetal tissue, their wishes should be respected.



Abortions carried out after 24 weeks of gestation are required by law to be registered as stillbirths and the body to be buried or cremated. However, these circumstances lie outwith the scope of this guideline.

The Scottish Government is currently producing a national policy on the disposal of fetal remains, which will be available in 2011.

### 3.6 Use of fetal tissue for research purposes

In England and Wales, research on the fetus or fetal tissue is subject to the requirements of the Human Tissue Act 2004<sup>33</sup> and should be conducted in accordance with Codes of Practice published by the Human Tissue Authority.<sup>34</sup> Specific guidance on consent to the use of fetal tissue is contained in Code of Practice 1, *Consent* (this Code of Practice does not apply to Scotland but is recommended as good practice).<sup>35</sup>

### 3.7 Issues relating to consent to treatment

The British Medical Association's (BMA) guidance on *Law and Ethics of Abortion* updated in 2007<sup>36</sup> and the GMC's guidance *Consent: patients and doctors making decisions together* published in 2008<sup>37</sup> set out good practice in this area. In 2009, the DH updated its comprehensive reference guide to consent for examination or treatment.<sup>38</sup> The advice which follows has been updated with particular reference to the latter document.

#### Adults with capacity

In the case of an adult woman (that is, aged over 18 years, or 16 years in Scotland), for consent to be valid it must be given voluntarily and the woman must have the capacity to consent to the intervention in question. It should be assumed that an adult has full capacity to make a decision for themselves (the right to autonomy) unless it can be shown that they lack capacity.<sup>39</sup>

The test for assessing capacity to consent to or refuse medical treatment has been established by the Court and is now set out in the Mental Capacity Act (2005).<sup>40</sup> This test is based on the patient having the ability to:

- understand the information relevant to the decision
- retain the information relevant to the decision
- use or weigh the information
- communicate the decision (by any means).

#### Adults without capacity: England and Wales

The Mental Capacity Act 2005 applies in England and Wales.<sup>40</sup> The 2005 Act defines a person who lacks capacity as a person who is unable to make a decision for themselves because of an impairment or disturbance in the functioning of their mind or brain. It does not matter if the impairment or disturbance is permanent or temporary. If the person meets this diagnostic test, the next question is whether or not they can make a particular decision for themselves. This is decided by reference to the criteria set out below.

- Consider whether the woman is likely to regain capacity and, if so, whether the decision can wait.
- Involve the woman as fully as possible in the decision that is being made on her behalf.
- As far as possible consider:
  - the woman's past and present wishes and feelings (in particular if they have been written down)
  - any beliefs and values and any other relevant factors
  - the other factors that the woman would be likely to consider if she were able to do so.
- As far as possible, consult other people if it is appropriate to do so and take into account their views as to what would be in the best interest of the woman, especially:
  - anyone previously named by the woman as someone to be consulted
  - anyone engaged in caring for or interested in the woman's welfare
  - any attorney appointed under a Lasting Power of Attorney
  - any deputy appointed by the Court of Protection to make decisions for the woman.
- For decisions about serious medical treatment, where there is no-one appropriate other than paid staff, healthcare professionals have to instruct an independent mental capacity advocate.

Provided that the issues of the woman's capacity and best interests are clear and beyond doubt, and the terms of the Abortion Act are complied with, there is no need for a High Court declaration to authorise the carrying out of an abortion. However, an application to the court should be made in any case of doubt, including where there is any dispute about the woman's capacity or her best interests, where the Abortion Act has not been strictly complied with or in other exceptional circumstances.<sup>41</sup>

### **Adults without capacity: Scotland**

In Scotland, Part 5 of the Adults with Incapacity (Scotland) Act 2000 provides a framework for the medical treatment of incapacitated adults (those aged 16 years or over).<sup>42</sup> If an adult lacks the capacity to make healthcare decisions, a certificate of incapacity must, in normal circumstances, be issued by the practitioner primarily responsible for the patient's care and treatment, consulting with all those who have an interest in the patient's health and wellbeing as necessary before treatment commences. It is, however, recognised that this will not always be possible in life-threatening situations. (Dental practitioners, ophthalmic opticians or registered nurses who have undergone training on the assessment of incapacity can also complete the certificate, but only for a specific treatment they need to provide.) Once a certificate has been issued, doctors can act under the general authority to treat. However, before abortion can be carried out on an adult who lacks capacity, under the terms of the Adults with Incapacity (Specified Medical Treatments) (Scotland) Regulations 2002,<sup>43</sup> approval by a practitioner appointed by the Mental Welfare Commission is required (and in the case of an adult who is 16 or 17 years of age and is incapable in relation to a decision about that treatment, the medical practitioner appointed by the Mental Welfare Commission must have a qualification, or have special experience, in child and adolescent psychiatry or in another relevant specialism); the requirements of the Abortion Act must also be met. If patients who are detained under the Mental Health (Care and Treatment) (Scotland) Act 2003<sup>44</sup> require treatment for a physical condition, they should be assessed for their capacity to consent to such treatment and, if appropriate, treatment considered under the provisions of the Adults with Incapacity (Scotland) Act 2000.<sup>42</sup>

### Young people with capacity

#### *Young people aged 16–17 years: England and Wales*

By virtue of Section 8 of the Family Law Reform Act 1969, people aged 16 or 17 years are presumed to be capable of consenting to their own medical treatment and any ancillary procedures involved in that treatment, such as anaesthesia.<sup>45</sup> However, unlike the case with adults, the refusal of a competent person aged 16 or 17 years may, in certain circumstances, be overridden by a person with parental responsibility or by a court. In order to establish whether a young person aged 16 or 17 years has the requisite capacity to consent to an intervention, the same criteria as for adults should be used. If the requirements for valid consent are met, it is not legally necessary to obtain consent from a person with parental responsibility. However, it is good practice to involve the young person's family in decision making, unless the young person specifically wishes to exclude them.

#### *Young people aged under 16 years: England and Wales*

The House of Lords ruling in the Gillick case<sup>46</sup> was followed by the issuing of guidance by the DH in the form of a Health Circular [HC(FP)(86)1].<sup>47</sup> The legal position was stated as 'any competent young person, regardless of age, can give valid consent to medical treatment'.

The same working test for assessing capacity as described in relation to the adult with capacity should be applied. Although a young person may have the capacity to give consent, this is only valid if it is given voluntarily. To be valid, consent must be given voluntarily and freely, without pressure or undue influence being exerted on the person to either accept or refuse treatment.

Lord Fraser provided the Fraser criteria to guide doctors asked to provide contraception for girls aged under 16 years who refuse to involve their parents.<sup>48</sup> A doctor or clinician is justified in proceeding without the parents' consent or knowledge if:

- the young person will understand the advice
- she cannot be persuaded to inform her parents or to allow the doctor/clinician to inform her parents that she is seeking an abortion
- she cannot be persuaded to inform her parents or to allow the doctor/clinician to inform her parents that she is seeking contraceptive advice
- she is likely to begin or to continue having sexual intercourse with or without contraceptive advice
- unless she receives contraceptive advice or treatment, her physical or mental health, or both, is likely to suffer
- her best interests require the clinician/doctor to give her contraceptive advice, treatment or both without parental consent.

The case of *Axon vs The Secretary of State for Health* confirmed that the Gillick judgement also extends to cover abortion.<sup>49</sup> Doctors have an obligation to encourage a young person to involve her parent(s) or another adult (such as another family member or a specialist youth worker) but generally should not override the patient's views. Further guidance is contained in *Working Together to Safeguard Children*.<sup>50</sup>

#### *Young people aged under 16 years: Scotland*

Legislation in Scotland relating to consent for medical, surgical and dental procedures is based on the Age of Legal Capacity (Scotland) Act 1991.<sup>51</sup> Under the terms of this Act, the situation regarding

the ability of children under 16 years of age to consent to medical treatment is similar to the rest of Great Britain, but the overriding test is whether the child is 'capable of understanding the nature and consequences of the procedure or treatment' (Section 2(4) of the 1991 Act).

### **Young people without capacity**

#### *Young people aged under 16 years: England and Wales*

Only a holder of 'parental responsibility', or the Court, can give consent to treatment on behalf of a minor. Adults who do not hold parental responsibility cannot give such consent. In rare cases, where a young person seeking abortion is not felt to be competent to provide valid consent and where a parent (or other person holding parental responsibility) cannot give consent on the child's behalf, it may be wise to obtain a court order. A court order would also be needed if the parent or other person with parental responsibility refused to give their consent. Similar advice is provided by the BMA.<sup>36</sup>

#### *Wards of court*

The main exception to this general guidance is if the young woman is a ward of court. In such cases, the courts would need to approve an abortion.<sup>52</sup> It is therefore particularly important that medical records make it clear if a child is a ward of court.

#### *Young people aged under 16 years: Scotland*

Similar to the above, in Scotland persons having parental responsibilities in relation to a child under 16 years of age have the right to act as the child's legal representative (which includes the right to make decisions about the medical treatment of a child under 16 years of age who lacks the capacity to give such consent themselves). In addition, under Section 5 of the Children (Scotland) Act 1995, persons over 16 years of age who have care or control of a child under the age of 16 years, but who do not have parental rights or responsibilities in relation to that child, can nevertheless give consent to any surgical, medical or dental treatment or procedure where the child is not able to give such consent on their own behalf and it is not within the knowledge of the person that a parent of the child would refuse to give the consent in question.<sup>53</sup> This does not, however, apply to a person who has care of control of a child in a school setting.

Where questions arise as to parental rights and responsibilities, the matter can be referred to the sheriff court or the Court of Session.

## **3.8 Abuse of children and vulnerable people**

There are special difficulties in managing suspected child abuse, incest or abuse of the very vulnerable in abortion services. The need for a decision on an abortion may be urgent because of advanced gestation and both the girl and any accompanying adult may conceal the truth from assessing staff. The girl may have travelled away from her home area to assist with the concealment. Staff must be alert to the possibility of abuse, particularly when the girl refuses to involve her parents or GPs, has a history of repeat abortions or is accompanied by a controlling adult such as a male relative who wishes to remain particularly close to her.

When abuse is suspected, the primary concern must be the wellbeing of the girl and children she may have care or concern for. Clear protocols must be in place for all assessors, medical staff,

nurses and counsellors on action to be taken should abuse be suspected. It is suggested that all services should designate a small number of doctors/clinicians and counsellors to assess all girls under 16 years of age. Within the terms of confidentiality, it is the doctor's responsibility to liaise with the appropriate children's social care team in the local authority when it is thought that a girl has been abused or when other children are likely to be at risk. Guidance on this is contained within *Working Together to Safeguard Children*, published in 2010; particular paragraphs of interest are 5.25–5.31 and 6.2–6.4.<sup>50</sup> Similar considerations can arise in the case of vulnerable women (perhaps because of a learning disability).

Under Section 5 of the Sexual Offences Act 2003, a girl under 13 years of age is not considered capable of giving her consent to sexual intercourse.<sup>54</sup> The duty of a doctor who learns of such an allegation or has other reason to suspect abuse is to protect the child and secure the best possible outcome for that child. Where a doctor believes that a patient (whether or not that patient is a child) may be the victim of abuse or neglect, the patient's interests are paramount, and will usually require a doctor to disclose information to the children's social care team in the local authority or to the police. In cases where the police are informed, doctors/clinicians should be mindful of the need to preserve evidence. In the case of children, the responsibilities of healthcare professionals are set out in *What to do if you're worried a child is being abused*, published in 2006.<sup>55</sup>

Disclosure is not invariably required but it is usual in order that the interests of the child, which are paramount, may be protected. A doctor or clinician may be called upon to justify the action that he or she has taken before the court or the statutory professional body. When such concerns arise in the context of abortion, whether during counselling or subsequently, the duty of the doctor or clinician is clear, and those who practise in this field should ensure that they are familiar with the procedures to be observed. They should also bear in mind that other children in a family may be in need of protection.

### 3.9 Rights of the spouse or partner

The decision to have an abortion rests with the woman and her doctors. Legally, the woman's spouse and/or the putative father of the child has no right to demand or refuse an abortion. In individual cases which attracted much media attention (Kelly 1997,<sup>56</sup> Hansell 2001<sup>57</sup>), male partners brought unsuccessful legal actions in attempts to prevent women obtaining abortions. In *Paton vs BPAS*,<sup>58</sup> a husband applied unsuccessfully for an injunction to prevent a clinic from carrying out a termination of his wife's pregnancy. The case went to the European Commission of Human Rights.<sup>59</sup>

# Chapter 4

## Commissioning and organising services

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Abortion services should aim to provide high-quality, efficient, effective and comprehensive care which respects the dignity, individuality and rights of women to exercise personal choice over their management. An abortion service should be an integral component of a broader service for reproductive and sexual health, encompassing contraception, management of STIs and support.

While this guideline is primarily intended for clinicians providing services, the provision of care is a shared responsibility with commissioners of services. Commissioning is the means of ensuring that the healthcare services are provided effectively and meet the needs of the population. It is a process that includes assessing population needs, prioritising health outcomes, procuring services, monitoring service provision, ensuring meaningful consumer involvement and managing service providers.

It is the responsibility of the commissioners and providers of abortion services to ensure that the care is provided in accordance with current evidence and best practice identified within this guideline. National, regional and local data should also be used to inform the commissioning of services. The national service specification usefully defines the datasets to collect, recognising the importance of monitoring and evaluating services to inform needs and service delivery.

A full range of services should be commissioned, to include a choice of medical and surgical procedures for all gestations up to the legal limit, as part of a pathway of care. Individual local referral pathways should be used to support this, to include a clear process for managing women presenting at late gestation.<sup>60</sup>

Abortion care should be commissioned and delivered within a robust clinical governance framework to assure accessibility, clinical quality and patient safety.<sup>61</sup> Clinical staff working within the service must be appropriately trained and experienced. Clinical appraisal/revalidation procedures ensure that clinicians keep up to date with the continuing professional development requirements set down by their professional body and commissioners must monitor compliance to these standards.

Increasingly the independent sector is providing abortion care. In 2009, 94% of abortions were funded by the NHS; of these, over half (60%) took place in the independent sector under NHS contract.<sup>3</sup> This has been identified as a significant issue for clinical training and mentorship of clinicians undertaking abortions, particularly at later gestations.<sup>62</sup> The independent sector has neither the resources nor the responsibility to provide training, and as the amount of abortions performed in the independent sector increases, the opportunities for training in NHS facilities decrease.

The following recommendations relating to the organisation of abortion services are the joint responsibility of commissioners and providers of services.

### 4.1 Access to services

#### RECOMMENDATION 4.1

- ✓ Commissioners and providers of abortion services should have local strategies in place for providing information for women and healthcare professionals on routes of access, including self-referral.

#### Evidence supporting recommendation 4.1

People faced with an unintended pregnancy need information on their options and on relevant service provision. Information should include what local services, including general practices, do and do not offer.<sup>63</sup> The information should be available in a range of formats and provided in a range of settings. Inadequate provision, delayed access to services and lack of public awareness are strongly associated with subsequent adverse health outcomes.<sup>64</sup>

#### RECOMMENDATION 4.2

- ✓ Commissioners should ensure that women have access to abortion services locally.

#### Evidence supporting recommendation 4.2

Access to both early and late abortion services varies significantly across the country and some women continue to face difficulties. The Medical Foundation for AIDS & Sexual Health<sup>64</sup> urges commissioners to improve access to abortions and locate services in more community-based settings.

A full range of services should be commissioned according to the service specification for the NHS contract for abortion service providers (England),<sup>65</sup> including confirmation of pregnancy, referral procedures for all gestations and methods, and continuing care.<sup>66</sup>

Funding of NHS abortion services differs in various parts of the country. In some areas, the NHS will pay for abortions provided by the independent sector, but in other areas some women may need to pay for themselves. Women can contact the independent sector without being referred by a doctor. However, the NHS may not pay for this.

It is the responsibility of the commissioning organisation to ensure that eligible women have access to abortion care, irrespective of the funding arrangements or any other criteria that could restrict access.

#### RECOMMENDATION 4.3


- B** Services should have arrangements which facilitate access without delay for referrals from a wide range of sources.

### Evidence supporting recommendation 4.3

The earlier in pregnancy an abortion is performed, the safer it is. The proportion of procedures performed in England and Wales under 10 weeks of gestation has increased to 75%, reflecting an improvement in access; however, there is wide local variation.<sup>3</sup> Although advances in abortion care now mean that abortion at later gestations is safe, this is not provided by all services, which can lead to delay and the need to travel for care. The proportion of women accessing late abortion care has been remarkably static over time and research indicates that the reasons for late abortions (after 13 weeks of gestation) are complex but include service failures.<sup>64</sup> Women requesting abortion late are often vulnerable and may have complex difficulties. The development of an agreed best practice protocol for managing late abortion has been recommended by the CMO but not yet actioned.<sup>64</sup> Commissioners and providers should jointly agree local pathways to ensure that women do not suffer any undue delay.

Telephone referral services with the provision of dedicated outpatient appointment time facilitate earlier abortion.<sup>67</sup>


### RECOMMENDATION 4.4

-  Where services have no on-site provision for emergency care, there must be robust and timely pathways for referral.

### RECOMMENDATION 4.5

-  Commissioners should ensure that abortion providers do not restrict access on the grounds of age, ethnicity, religious beliefs, disability or sexual orientation.


### RECOMMENDATION 4.6

-  Commissioners should ensure that access is not restricted on the grounds of marital status or the number of previous abortions.

### Evidence supporting recommendations 4.5 and 4.6

The Equality Impact Assessment for National Sexual Health Policy<sup>68</sup> ensures services are provided fairly to all populations regardless of age, gender, ethnicity, language, disability, sexual orientation and religious or personal circumstances. It is the responsibility of both commissioners and providers to ensure that all strategies, service specifications, policy documents and service information are impact assessed. Data on age, ethnicity, language, disability and sexual orientation should be collected and analysed against data for the resident population to ensure equity of access.

### RECOMMENDATION 4.7

-  Professionals who are ethically opposed to abortion have a duty of care to refer onward women requesting abortion without delay.

### Evidence supporting recommendation 4.7

According to the GMC, 'you must treat your patients with respect, whatever their life choices and beliefs'.<sup>19</sup> The NMC document *Standards of conduct, performance and ethics for nurses and*



*midwives* clearly identifies this duty.<sup>69</sup> Physicians, nurses and others who refuse to provide referral or undertake abortions on religious grounds have a duty of care and must refer their patients (without delay) to non-objecting practitioners or agencies.

Some clinicians apply gestational limits to the abortion care they offer on the grounds of competency. This does not constitute conscientious objection.

### RECOMMENDATION 4.8

**B** Services should facilitate access for all women, particularly those who traditionally have difficulties accessing health services.

#### Evidence supporting recommendation 4.8

Teenagers, women with complex social problems and young women from minority ethnic groups are all at risk of unintended pregnancy and are known to have difficulty accessing healthcare services.<sup>70-74</sup>

## 4.2 Tailored care

### RECOMMENDATION 4.9

Services should make sure that a female member of staff is available if requested.

### RECOMMENDATION 4.10

Services should be culturally sensitive and professional interpreters should be available if required.

#### Evidence supporting recommendation 4.10

It should be noted that while women may choose to use family or friends as interpreters, in gaining consent to a procedure the provider needs to be absolutely certain that the woman is fully consenting. This can be guaranteed only if an independent professional interpretation service is used.

## 4.3 Information provision

### RECOMMENDATION 4.11

**C** Services should make sure that written, objective, evidence-guided information is available for women considering abortion to take away before the procedure. Information should be available in a variety of languages and formats.

### RECOMMENDATION 4.12

Services are encouraged to adapt nationally developed patient information for local use.

### RECOMMENDATION 4.13

- ✓ Staff providing abortion services should provide up-to-date evidence-guided information, supported by local data where robust, about complications and sequelae of abortion.

### RECOMMENDATION 4.14

- ✓ Women should have access to objective information and, if required, counselling and decision-making support about their pregnancy options.

### Evidence supporting recommendations 4.11–4.14

All women attending an abortion service will require a discussion to determine the degree of certainty of their decision and their understanding of its implications as part of the process of gaining consent. Careful and sensitive enquiry as to the reasons for requesting an abortion should be made, with the opportunity for further discussion, especially where women express any doubts or suggestion of pressure or coercion.

All information provided at the initial consultation must be backed up by good-quality, accurate, impartial written information that is well presented and easy to understand. People want to receive written information about medical and surgical interventions and, when given written information, are more likely to be satisfied with their care.<sup>75</sup>

A 2002 study examined the quality of information relating to medical abortion available to the public on the internet.<sup>76</sup> Incorrect and inappropriate information was common. Locally produced leaflets are often of poor quality.<sup>77</sup> Services should make use of the RCOG website<sup>78</sup> or Family Planning Association (FPA) patient information<sup>79</sup> and base local leaflets on this information. Where good-quality information is collected from audits of local services with sufficient throughput of women to allow robust data (such as local statistics for complication rates etc.), these should be provided.

### RECOMMENDATION 4.15

- C Information for women and providers should emphasise the duty of confidentiality.

### Evidence supporting recommendation 4.15

Abortion is still highly stigmatised and, without a guarantee of confidentiality, vulnerable women could be deterred from seeking help.

Women of all ages accessing such services have the right to confidentiality under the NHS code of practice.<sup>25</sup> Confidentiality is a key issue for young people. However, the right to confidentiality is not absolute and, if there are issues of safeguarding/child protection, information may need to be shared with or without the consent of the young person (for example, in cases of exploitation). All practitioners and front-line staff who have responsibilities for safeguarding and promoting the welfare of children should be appropriately trained and should have ready access to expert child protection advice.

The BMA states that decisions must be made on the basis of an assessment of the child's best interests, taking into consideration all relevant factors.<sup>80</sup>

## 4.4 Initial assessment

### RECOMMENDATION 4.16

- ✓ There should be a pathway to tertiary medical care for women with significant medical conditions.

### RECOMMENDATION 4.17

- C Women who decide to continue with the pregnancy should be referred for antenatal care without delay.

#### Evidence supporting recommendation 4.17

Women who delay seeking maternity care (and their babies) have worse outcomes than when care is accessed at an earlier stage of pregnancy.<sup>81</sup> Delayed presentation is particularly likely among women who misuse substances (alcohol and/or drugs), women who are recent migrants, asylum seekers or refugees, women who have difficulty reading or speaking English, young women aged under 20 years and women who experience domestic abuse.<sup>82</sup>

### RECOMMENDATION 4.18

- ✓ Women who have a non-viable pregnancy require appropriate management, not forgetting contraception and sexual health care.

### RECOMMENDATION 4.19

- C Services should identify issues which make women particularly vulnerable (such as child protection needs and domestic abuse/gender-based violence) and refer/signpost them on to appropriate support services in a timely manner.

#### Evidence supporting recommendation 4.19

The rate of domestic abuse is higher in women seeking abortion, especially repeat abortion,<sup>83</sup> and this has child protection implications. Abortion services offer an opportunity to identify such vulnerable women and enable them to receive support from or referral to trained advocates.<sup>84-86</sup>

A child who is pregnant and under 13 years of age has suffered a statutory rape and the appropriate authorities must be informed. Other underage children who present for an abortion may have been subject to abuse or violence. It is necessary to be aware of this and to give any underage girl the chance to disclose during a private moment when a parent or adult is not present.<sup>87</sup>

### RECOMMENDATION 4.20

- ✓ The assessment (including support services such as ultrasound) should be provided within a dedicated time and space and by a team committed to women requesting abortion, specifically separate from miscarriage and antenatal services.

**RECOMMENDATION 4.21**

**C** Elements of the assessment consultation can be provided via the telephone and/or the internet. However, women should be able to access face-to-face consultation, if preferred.

**Evidence supporting recommendation 4.21**

Increasingly, services are using technology as an alternative to some of the face-to-face consultations and service delivery. Anecdotally, women find telephone consultation (with a clinician) for the initial assessments highly acceptable. Protocols that require in-person follow-up after abortion may not be the best use of a woman's time, or that of the medical system.<sup>88–92</sup> Commissioners and providers should monitor the outcomes of all aspects of the assessment to ensure they meet women's needs and provide the necessary amount of information and opportunity for decision making.

**4.5 Arrangements for the procedure****RECOMMENDATION 4.22**

**✓** A system should be in place to ensure that doctors within the abortion service complete form HSA1 (Certificate A in Scotland) if a woman refers herself, or if the referring doctor is not willing to support the abortion.

**RECOMMENDATION 4.23**

**C** With respect to the method used to induce the abortion, service arrangements should be such that:

- Services should be commissioned for all women requesting induced abortion at all gestations.
- If a service cannot offer an abortion by any method after a specific gestation, timely onward referral must be ensured.
- All services should be able to offer abortion by at least one of the recommended methods for each gestation band.
- All services should be able to offer a **choice** of recommended methods for each gestation band.
- Services should provide surgical abortion under both local and general anaesthesia.

**Evidence supporting recommendation 4.23**

The GDG views induced abortion as a healthcare need. The Group therefore considers that services for a population should be able to provide abortion, by at least one recommended method, for women at any gestation at which abortion is permitted within the law.

Medical and surgical methods of abortion have unique advantages and disadvantages. These include the procedure duration, number of required visits, effectiveness, adverse effects and complication profile. A small number of trials have compared medical with surgical methods in an effort to determine which is optimal. However, few have included modern techniques and all were underpowered to precisely assess differences in rare complications such as continuing pregnancy or uterine perforation.

Medical abortion with mifepristone and misoprostol is associated with a longer duration of bleeding, more pain and gastrointestinal adverse effects, and a higher likelihood of being incomplete than vacuum aspiration under general anaesthetic up to 14 weeks of gestation.<sup>93,94</sup> One partially randomised preference trial, in which 1528 women received their method of choice and 349 were randomised to a vacuum aspiration under general anaesthetic or medical abortion, also found that rates of unplanned or emergency admissions were higher after medical than surgical procedures (4.2% and 0.7%, respectively), mainly owing to retained products of conception.<sup>94</sup> Overall complications were also more frequent in the medical group (5.0% and 2.6%, respectively); however, this difference achieved statistical significance in the preference arm only.

Similarly, in the limited number of comparative trials of D&E and medical abortion with mifepristone and misoprostol after 14 weeks of gestation, pain and bleeding were shown to be higher in women undergoing medical management.<sup>95,96</sup> One small trial found that cumulative adverse events were higher in the medical abortion group; however, these were limited to fever greater than 38°C and the need for curettage.<sup>95</sup>

Level III evidence and that which can be extrapolated from attempts at RCTs of medical and surgical methods confirms that many women have an a priori preference and value being offered a choice between medical and surgical options.<sup>94-99</sup> In addition, obtaining their method of choice is a predictor of satisfaction with treatment.<sup>100,101</sup> Where women have been willing to be randomised, a majority report greater acceptability with surgical methods in the weeks following the abortion.<sup>94,96,100,101</sup>

Therefore, the GDG recommends that services should be able to offer a choice of methods in each gestation band (Figure 7.1). Abortion by D&E requires special expertise, an adequate case load and particular staff attitudes. Specialist independent sector providers perform the majority of D&E procedures in Great Britain. Given recent evidence regarding preferences and acceptability of D&E compared with medical abortion, development of these services within the NHS should be a priority.

Where a service cannot provide an abortion by either method above a specific gestation, prompt referral is indicated. Delays between consultation and procedure contribute to the number of women obtaining abortions in the second trimester, particularly at 18 weeks of gestation or greater when the number of providers offering services decreases.<sup>102,103</sup> Abortion-related morbidity and mortality also increase with gestational age,<sup>104-106</sup> emphasising the importance of facilitating access as quickly as possible.

The issue of choice is important. With respect to minimising delay, recommendation 4.23 relates to service arrangements and should not affect a woman's right to wait or to delay appointments.

### RECOMMENDATION 4.24

**C** To minimise delay, service arrangements should be such that:

- Referral to an abortion provider should be made within 2 working days.
- Abortion services must offer assessment within 5 working days of referral or self-referral.
- Services should offer women the abortion procedure within 5 working days of the decision to proceed.
- The total time from seeing the abortion provider to the procedure should not exceed 10 working days.
- Women requiring abortion for urgent medical reasons should be seen as soon as possible.

**RECOMMENDATION 4.25**

- ✔ Women should be informed that they have a right to delay or cancel appointments and/or the procedure should they wish.

**Evidence supporting recommendations 4.24 and 4.25**

Currently, the specification for termination of pregnancy services (England) states that all service users should be offered an assessment appointment within 5 calendar days of referral or self-referral.<sup>65</sup>

An increase in the proportion of abortions performed under 10 weeks of gestation would result in significant cost savings for the NHS as a result of greater use of non-surgical and local anaesthetic methods, as well as the reduced risks to women consequent to reduced gestation.<sup>107</sup>

Appointments should be expedited for women who present beyond 12 completed weeks of gestation or who require abortion for urgent medical reasons, to minimise further risk to health. Services which provide abortions only up to a certain gestational age should ensure rapid transfer of these women to appropriate providers via robust care pathways.

Women who need more time to reach a decision should be free to delay the procedure and be provided with further counselling if requested. It is essential to ascertain that a woman is sure of her choice to proceed with abortion; however, when that is confirmed, there is no advantage in further delay since the risks associated with abortion increase with increasing gestation. Women should also be informed that they can change their mind at any time before the procedure and cancel the abortion.

**RECOMMENDATION 4.26**

- ✔ Upon referral, women should be given the service provider's contact details.

**RECOMMENDATION 4.27**

- C Inpatient services, provided in an appropriate centre and clinical setting, should be available for women who are unsuitable for or who do not desire home or day case care.

**Evidence supporting recommendation 4.27**

Day case care is cost-effective. The availability of abortion as a day case procedure can minimise disruption to women and their families. Treatment with mifepristone prior to mid-trimester abortion with a prostaglandin analogue reduces induction-to-abortion intervals to such an extent that many women undergoing these procedures may be managed as day cases. In a series of 500 women undergoing mid-trimester abortion carried out using prostaglandin analogues, over two-thirds were managed as day cases.<sup>108</sup>

Reasons why women might need to undergo induced abortion as inpatients rather than day cases include:

- medical problems requiring assessment prior to anaesthetic or overnight stay following the abortion
- social indications, such as lack of an adult companion at home
- geographical factors, such as distance or transport problems
- the woman's choice.

The percentage of women undergoing abortion requiring an overnight stay is very low. The availability of beds for these women must be agreed locally to reflect local circumstances and the need to respond to women's choices.

### RECOMMENDATION 4.28

- ✓ Services should have a protocol in place allowing early discharge after misoprostol for women undergoing medical abortion up to 9 weeks of gestation.

#### Evidence supporting recommendation 4.28

Early discharge after the administration of misoprostol for medical abortion up to 63 days of gestation is acceptable to women, allowing them to spend less time in hospital and thus maintaining their privacy and reducing disruption to their family.<sup>109</sup> This practice is within the terms of the Abortion Act<sup>13</sup> and could offer considerable savings to the NHS. It is not suitable or acceptable to all women, but services should have protocols in place to allow it to happen and to make arrangements to confirm complete abortion in women who choose to go home.

Currently in Great Britain, abortions are permitted only in NHS hospitals and independent sector sites approved by the DH. In various other countries, gynaecologists provide medical abortions in their office with no reports of increased rates of adverse effects or complications.<sup>110</sup> The 1990 amendment to the Abortion Act introduced a subsection 1(3A)<sup>16</sup> giving the Secretary of State for Health the power to approve a 'class of place' for medical abortions. Although this has never been enacted, a mechanism exists for places to be approved specifically for medical abortion. A pilot on early medical abortion in a community setting reported positive results.<sup>110</sup>

Since the first edition of this guideline (2000), the published literature on the safety, efficacy and acceptability of taking the misoprostol at home has grown.<sup>110-119</sup> A systematic review of the literature concluded that this process is safe, effective and acceptable.<sup>120</sup> While taking misoprostol at home is not legal in Great Britain, the evidence would support its use were that to be possible at some time in the future.

### RECOMMENDATION 4.29

- ✓ The setting for abortion should be sensitive and responsive to women's needs and should respect the need for privacy and dignity.

### RECOMMENDATION 4.30

Commissioners should ensure that services meet the recommendations relating to:

- B Contraception after the abortion
- A and C Antibiotic prophylaxis
- B STI screening
- C Information provision after the abortion
- C Counselling after the abortion

#### Evidence for recommendation 30

See chapters 6 and 8.

## Chapter 5

# Adverse effects, complications and sequelae of abortion: what women need to know

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### RECOMMENDATION 5.1

**B** Women should be informed that abortion is a safe procedure for which major complications and mortality are rare at all gestations.

### RECOMMENDATION 5.2

**✓** Complications and risks should be discussed with women in a way that they can understand and should emphasise the overall safety of the procedure.

### Evidence supporting recommendations 5.1 and 5.2

National reporting systems record major complications (including haemorrhage, sepsis and uterine perforation) that occur prior to discharge. Estimated complication rates are 1–2 per 1000 abortions,<sup>3</sup> although lack of standardisation of reporting criteria hampers collection of accurate data.

Although the absolute risk of major complications is low, there is evidence that complications increase with increasing gestation.<sup>121</sup> A Cochrane systematic review comparing surgical and medical methods of abortion in the first trimester<sup>93</sup> identified no significant difference in complications between methods, although there were few sufficiently powered randomised studies to identify different rates for rare events. A comparison of surgical and medical methods of abortion<sup>122,123</sup> after 13 weeks of gestation, by contrast, suggests that medical abortion is associated with higher all-cause adverse events, although this evidence is dependent on a few very small, underpowered randomised trials and cohort studies.

A recent large registry-based cohort study from Finland of more than 42 000 women compared complication rates (haemorrhage, infection, incomplete abortion, surgical injury, thromboembolic disease, psychiatric morbidity and death) in the first 6 weeks following medical and surgical abortion. Both methods are generally safe. The incidence of haemorrhage and incomplete abortion observed was higher in women undergoing medical abortion while complications requiring surgical treatment, although rare, were more common after surgical events. The rates of infection and serious morbidity did not differ between groups.<sup>124</sup>

Service providers should inform women that the risks of mortality associated with induced abortion are extremely low. In the triennium 2006–08, there were 107 direct maternal deaths in the UK and



154 indirect maternal deaths out of 2.29 million mothers who gave birth (overall maternal mortality rate 11.39/100 000 maternities). Of the 107 direct deaths, only two were associated with abortion and both of these were from genital tract sepsis, out of a total number of 628 342 abortions in the same time frame (maternal mortality rate 0.32/100 000 maternities).<sup>125</sup>

Communicating the risk of complications associated with abortion in an understandable way to women undergoing abortion is essential for informed decision making. Women need to be informed about which options for abortion are available to them and the risks and uncertainties associated with each procedure. Perception of risk is more important than actual risk and may vary widely among individuals.<sup>126,127</sup> Risk should be communicated in the form of numbers as well as words. This guideline recommends using the modified Calman scheme (Table 5.1)<sup>128</sup> to quantify risk alongside descriptors in a way that is straightforward for both clinicians and women to interpret.

**Table 5.1 Quantification of risk (modified from Calman et al., 1997<sup>128</sup>)**

Verbal descriptor	Risk
Very common	1 in 1 to 1 in 10
Common	1 in 10 to 1 in 100
Uncommon	1 in 100 to 1 in 1000
Rare	1 in 1000 to 1 in 10 000
Very rare	Less than 1 in 10 000

Women can also be referred to current RCOG guidance: *Understanding how risk is discussed in healthcare – information for you*.<sup>129</sup>

### RECOMMENDATION 5.3

**B** Services should provide women with information about the physical symptoms and sequelae that may be experienced after abortion.

#### Evidence supporting recommendation 5.3

Women experience a range of physical symptoms following medical and surgical abortion that are considered within the normal range. The most common of these are pain and bleeding; gastrointestinal symptoms are frequent, particularly after medical abortion. Women should be advised of this and of which features should alert them to seek further advice.

Compared with women undergoing surgical abortion, women undergoing medical abortion at less than 14 weeks of gestation report significantly more pain and gastrointestinal symptoms during the procedure<sup>94,98,100,101,130</sup> and more bleeding over the first 2 weeks of follow-up. This is hardly surprising, since during surgical abortion placental tissue and blood are removed by vacuum aspiration, while loss of the products of conception continues gradually for some days/weeks after medical abortion until the uterus is empty. A similar proportion of women who have had either surgical or medical procedures are still bleeding at 2 weeks after their abortion (around 22%), although women undergoing medical abortion report heavier blood loss.<sup>94</sup> The duration of bleeding is consistently reported to be longer after medical than surgical abortion and longer for abortion at 10–13 weeks

of gestation (when the placenta and therefore the source of bleeding, the placental site, is larger) compared with abortion at 9 weeks of gestation or earlier. Women are more likely to seek medical help for bleeding after medical than surgical abortion and report bleeding that is heavier than they expected.<sup>93,98,101,131,132</sup>

### RECOMMENDATION 5.4



Service providers should inform women about the range of emotional responses that may be experienced during and following an abortion. Providers should be aware that women with a past history of mental health problems are at increased risk of further problems after an unintended pregnancy.

### Evidence supporting recommendation 5.4

Women experience a range of emotions during and after abortion that includes relief, sadness, anger, guilt and regret.<sup>133</sup> Such reactions are normal. For some women, recurring thoughts can also occur later when triggered by other life events such as difficulties with subsequent pregnancies, life milestones and birthdays. Most major life decisions result in complex feelings and the decision to have an abortion is for most women a difficult choice. The circumstances that lead to the unplanned pregnancy, how women are supported when faced with indecision and how they are enabled to make the right choice for them will influence the emotions they may experience during and after abortion. Women with more severe problems may need to be referred for counselling.<sup>134–136</sup> Women with a prior history of mental health problems are more likely to develop a mental health problem after unintended pregnancy whether the pregnancy is continued or not (see recommendation 5.14).<sup>137</sup>

## 5.1 Abortion complications

### RECOMMENDATION 5.5



Women should be informed of the following rare but serious complication that may occur:

- Uterine rupture has been reported in association with medical abortion at late gestations. The risk is less than 1 in 1000.

### Evidence supporting recommendation 5.5

Uterine rupture during abortion is rare. Case reports<sup>138–141</sup> have described uterine rupture in women who have had previous caesarean section undergoing medical abortion at a gestation between 13 and 24 weeks with varied regimens. A large retrospective review of over 600 women undergoing mid-trimester medical abortion<sup>142</sup> suggested an almost 20-fold increase in the risk among women who have had a previous caesarean section, although more recent retrospective reviews of women undergoing abortion at different gestations failed to identify any cases of uterine rupture.<sup>143,144</sup> Recent systematic review evidence does support the finding that previous caesarean section is a risk factor for uterine rupture during abortion; the absolute risk is less than 0.4%,<sup>145,146</sup> which many women may find acceptable.

### RECOMMENDATION 5.6

**B** Women should be informed of the uncommon complications that may occur and of their possible clinical consequences. These may include:

- Severe bleeding requiring transfusion; the risk is lower for early abortions, occurring in less than 1 in 1000, rising to around 4 in 1000 at gestations beyond 20 weeks.
- Uterine perforation (surgical abortion only); the risk is in the order of 1–4 in 1000 and is lower for early abortions and those performed by experienced clinicians.
- Cervical trauma (surgical abortion only); the risk of damage to the external os is no greater than 1 in 100 and is lower for early abortions and those performed by experienced clinicians.

Women must be informed that, should one of these complications occur, further treatment in the form of blood transfusion, laparoscopy or laparotomy may be required.

### Evidence supporting recommendation 5.6

Haemorrhage is most commonly defined as blood loss greater than 500 ml or severe bleeding requiring transfusion. It is difficult to get a true estimate of the risk of haemorrhage at the time of abortion owing to the lack of standardised definitions and poor reporting. Many studies do not distinguish between immediate and later haemorrhage, its severity and the underlying aetiologies. Nonetheless, national estimates suggest that fewer than 0.2% of procedures are complicated by haemorrhage of more than 500 ml and the proportion requiring transfusion is less than this.<sup>3</sup> The risk is lower for early abortions (0.88 in 1000 at less than 13 weeks of gestation) than for late abortions (4.0 in 1000 at more than 20 weeks of gestation).

Although systematic review evidence comparing complications of medical and surgical abortion at different gestations suggested that haemorrhage is more common following medical than surgical abortions, this did not reach statistical significance.<sup>93,122</sup> A Finnish cohort study<sup>124</sup> demonstrated rates of haemorrhage of 2.1% for early surgical abortion compared with 15.6% for early medical procedures, although this was based on coded diagnosis over the 6 weeks following abortion, did not distinguish severity and may represent greater help seeking for bleeding problems among this group. The much smaller proportion of women in this group requiring surgical intervention were also significantly more likely to have had medical rather than surgical procedures (2.9% compared with 0.9%). Studies of mid-trimester procedures suggest that severe haemorrhage occurs in up to 0.9% of women undergoing D&E, with 0.2% requiring transfusion.<sup>147–151</sup> In an observational study of mid-trimester medical abortion, 0.7% of women required transfusion; however, a comparative cohort study of medical and surgical abortions failed to demonstrate a difference in transfusion rates between the two methods.<sup>152</sup>

Although the evidence overall may suggest that women are more likely to suffer heavy bleeding following medical rather than surgical procedures, it is important to note that the risk of severe haemorrhage across all methods and gestations remains uncommon.

Evidence table 3 summarises rates of uterine perforation during surgical abortion reported in large case series (more than 4000 women) that were identified during the development of the previous edition of this guideline. Series for inclusion were selected on the basis of study size (more than 4000 subjects). The more recent Danish cohort study<sup>153</sup> (56 117 subjects), published in 2002, reported a rate of uterine perforation of 2.3 in 1000 surgical abortions.

Evidence table 4 summarises incidences of cervical injury during surgical abortion at up to 12 weeks of gestation reported in large case series identified during development of the earlier edition

of this guideline. Rates vary considerably, with older studies reporting rates of around 1%<sup>154,155</sup> and more recent studies suggesting the rate is less than 0.2%,<sup>151,156–159</sup> which may be more typical of today's practice and reflect greater use of cervical preparation. However, some of the variation reflects the lack of an agreed definition of cervical injury and deficiencies in data collection. No new studies were identified.

## 5.2 Failed abortion and continuing pregnancy

### RECOMMENDATION 5.7

**B** Women should be informed that surgical and medical methods of abortion carry a small risk of failure to end the pregnancy (less than 1 in 100), necessitating another procedure.

#### Evidence supporting recommendation 5.7

The reported rate of failure from a study of 33 090 cases when suction aspiration was performed at 12 weeks of gestation or earlier was 2.3/1000 abortions.<sup>160</sup> The risk was greater for multiparous women, abortions performed at 6 weeks of gestation or earlier, when small cannulae were used, when the procedure was performed by a less experienced surgeon or if the woman had uterine abnormalities.

A meta-analysis of the efficacy of medical abortion<sup>161</sup> indicated that 'viable pregnancy' rates after all studied regimens increased with length of gestation. A comparative review of medical and surgical methods for early abortion reported continuing pregnancy rates of 0.9% for mifepristone/misoprostol abortion and 0.5% for vacuum aspiration,<sup>162</sup> while an observational study of 4132 cases indicated a continuing pregnancy rate of 0.1% at gestations up to 49 days and 0.5% at gestations of 50–63 days.<sup>130</sup>

### RECOMMENDATION 5.8

**C** Women should be informed that there is a small risk (usually much less than 5%) of the need for further intervention, such as surgical intervention following medical abortion or re-evacuation following surgical abortion.

#### Evidence supporting recommendation 5.8

Rates of surgical evacuation following either medical or surgical abortion vary according to experience, diagnostic criteria and intervention thresholds, and these will vary between centres. Local rates of repeat procedures should be quoted wherever possible.

There are few randomised trials of surgical versus medical methods. However, in a partially randomised study, significantly more women having surgical abortions did not require further surgical intervention (98% of women undergoing surgical abortions versus 94% of women undergoing medical abortions),<sup>163</sup> with a further study yielding similar results for procedures at 10–13 weeks of gestation (98% versus 95%).<sup>131</sup> The Finnish registry-based study of more than 42 000 women undergoing medical and surgical abortions at up to 9 weeks of gestation demonstrated that 6% of women having medical abortions needed surgical intervention for retained products of conception compared with fewer than 1% of those having surgical abortions.<sup>124</sup> In a further observational study of 4132 cases of medical abortion at less than 9 weeks of gestation,

2.3% required surgical evacuation, of which 1.6% were incomplete abortions, 0.35% delayed miscarriage and 0.3% continuing pregnancy.<sup>130</sup>

For medical abortion after 13 weeks of gestation, surgical evacuation may be required either at the time for retained placenta or later for persistent retained products of conception. Quoted rates for surgical intervention vary widely between studies and across different regimens, from 2.5% in one study<sup>164</sup> up to 53% in a UK multicentre study.<sup>165</sup>

### 5.3 Post-abortion infection

#### RECOMMENDATION 5.9

**B** Women should be informed that infection of varying degrees of severity may occur after medical or surgical abortion and is usually caused by pre-existing infection. Prophylactic antibiotic use and bacterial screening for lower genital tract infection reduces this risk.

#### Evidence supporting recommendation 5.9

Genital tract infection, including pelvic inflammatory disease, is a recognised complication of abortion. Post-abortion infection may later result in tubal infertility or ectopic pregnancy as well as causing morbidity in the immediate post-abortion period. Studies have shown that the presence of *C. trachomatis*, *Neisseria gonorrhoea*<sup>166–168</sup> and bacterial vaginosis<sup>169,170</sup> in the lower genital tract at the time of abortion is associated with an increased risk of infection. Incidence rates among the control groups in trials of prophylactic antibiotics for abortion suggest that infective complications occur in up to 10% of cases.<sup>171–176</sup>

In a systematic review of 46 421 women investigating the frequency of infection following medical abortion at all gestations, the incidence was low at 0.92%.<sup>177</sup> This is lower than has been reported in previous UK studies (2.54%), perhaps owing to variations in both diagnostic criteria and thresholds for prescribing antibiotics. Eligible studies included both confirmed and presumptive diagnoses of infection treated with antibiotics. In a registry-based Finnish study of 42 619 women undergoing both medical and surgical abortion,<sup>124</sup> the rate of reported infection in the 6 weeks following the procedure, based on outpatient and inpatient attendances, was 1.7%, with no difference seen between medical and surgical procedures. True ascertainment of rates is difficult owing to variations in diagnostic criteria, antibiotic thresholds and use of follow-up services.

### 5.4 Breast cancer

#### RECOMMENDATION 5.10

**A** Women should be informed that induced abortion is not associated with an increase in breast cancer risk.

#### Evidence supporting recommendation 5.10

In the past there has been conflicting evidence presented concerning a possible link between induced abortion and breast cancer,<sup>178,179</sup> and in the last edition of this guideline the Group concluded that there was no evidence that abortion increased the risk of breast cancer. Findings of

the 2003 report by the American College of Obstetricians and Gynecologists (ACOG),<sup>180</sup> which summarised evidence from the most methodologically robust studies, failed to demonstrate any associations, concluding that ‘Rigorous recent studies argue against a causal relationship between induced abortion and a subsequent increase in breast cancer risk’. Since then, there has been a growing body of evidence lending further support to these findings. Published evidence from a number of large cohort and case–control studies,<sup>181–183</sup> together with the European Prospective Study on the Investigation into Cancer<sup>184</sup> and the Nurses Health Study 2,<sup>185</sup> showed no increase in the relative risk of breast cancer in women undergoing induced abortion regardless of age, number of abortions or timing of the abortion.

Furthermore, an international collaboration involving over 40 000 women with breast cancer from 53 studies worldwide concluded that women with a history of one or more pregnancies that ended as an induced abortion were not at an increased risk of breast cancer compared with women with no such history (relative risk [RR] of breast cancer = 0.93; 95% confidence interval [CI] 0.89–0.96;  $P = 0.0002$ ). There was evidence that studies yielded misleading results if women were asked about their history of induced abortion after they developed breast cancer, possibly because the women who had developed breast cancer were, on average, more likely than women without breast cancer to disclose to study investigators that they had a history of previous induced abortions. Continued claims that induced abortion does cause breast cancer tend to lend undue weight to these studies rather than the more reliable studies that recorded women’s history of induced abortion before they developed breast cancer.<sup>186</sup>

WHO has concluded that induced abortion does not increase breast cancer risk.<sup>187</sup> Similarly, in a recent review of the evidence, ACOG concluded that ‘The relationship between induced abortion and the subsequent development of breast cancer has been the subject of a substantial amount of epidemiologic study. Early studies of the relationship between prior induced abortion and breast cancer risk were methodologically flawed. More rigorous recent studies demonstrate no causal relationship between induced abortion and a subsequent increase in breast cancer risk.’<sup>188</sup>

## 5.5 Future reproductive outcome

### RECOMMENDATION 5.11

**B** Women should be informed that there are no proven associations between induced abortion and subsequent ectopic pregnancy, placenta praevia or infertility.

#### Evidence supporting recommendation 5.11

No new evidence of a relationship between abortion and subsequent placenta praevia, ectopic pregnancy, subfertility or miscarriage was identified in the course of updating this guideline and much of the evidence presented is based on a review article of the long-term health consequences of abortion published in 2002 by Thorp et al.<sup>189</sup>

#### *Placenta praevia*

Thorp and colleagues reported an association between induced abortion and placenta praevia across a number of heterogeneous studies of variable quality. Subsequent studies, however, have reported more reassuring findings. A Danish cohort study based on national registry data linkage involved 15 727 women whose first pregnancy was terminated and a reference cohort of 46 026

women.<sup>190</sup> No association with placenta praevia was seen. A case–control study from the USA involved 192 cases of placenta praevia and 622 controls.<sup>191</sup> The investigators concluded that risk of placenta praevia might have increased in a dose–response fashion with sharp curettage abortions, but that vacuum aspiration did not confer an increased risk.

### *Ectopic pregnancy*

Thorp et al. reviewed seven case–control and two cohort studies relating to abortion and subsequent ectopic pregnancy.<sup>189</sup> Only two of the nine studies reported a positive association; these were relatively small case–control studies which relied on self-report of previous abortion. Large studies based on record linkage showed no association.

### *Subfertility*

Published studies strongly suggest that infertility is not a consequence of uncomplicated induced abortion.<sup>192–194</sup> Although women with a previous induced abortion appeared to be at an increased risk of infertility in countries where abortion is illegal and therefore usually unsafe, this is not the case in legal settings. There are some discrepancies among studies,<sup>195</sup> but none was of sufficient power to detect a small association. In the review by Thorp et al., three case–control studies and four cohort studies relating to abortion and infertility were appraised. Two relatively small case–control studies, both from Greece, showed a positive association of abortion with subfertility.<sup>195,196</sup> Other studies found no association. Thorp et al.<sup>189</sup> commented on the methodological limitations of all studies which date from before 1999. No relevant new studies were identified during the updated literature search.

### *Miscarriage*

Thorpe et al. reviewed two cohort and three case–control studies examining associations between induced abortion and miscarriage, and no significant association was identified.<sup>189</sup> Moreover, those that analysed data according to the number of abortions found no dose–response effect. However, some studies report conflicting findings. A study by Zhou suggests that women who become pregnant within 3 months of abortion are at increased risk of miscarriage.<sup>197</sup> A further cohort study from Shanghai of nearly 3000 women comparing primigravid women with women undergoing abortion by vacuum aspiration reported an adjusted odds ratio (OR) of 1.72 for miscarriage (95% CI 1.09–2.72) between abortion and reference cohorts.<sup>198</sup>

### *Preterm birth*

## RECOMMENDATION 5.12

**B** Women should be informed that induced abortion is associated with a small increase in the risk of subsequent preterm birth, which increases with the number of abortions. However, there is insufficient evidence to imply causality.

## Evidence supporting recommendation 5.12

A systematic review and meta-analysis by Shah et al. in 2009<sup>199</sup> reported that a history of abortion is associated with a small increase in the risk of preterm birth, giving an adjusted odds ratio of 1.27 (95% CI 1.12–1.44) increasing to 1.62 (95% CI 1.27 to 2.07) with more than one abortion. A recent large Australian population study of 42 269 births<sup>200</sup> comparing term with preterm deliveries supports these findings. Among women with no history of miscarriage or induced abortion, 7.1% had a preterm birth compared with 8.9% of women who had one or more induced abortion (OR 1.25, 95% CI 1.13–1.40). Among women with a history of one or more miscarriages, 8.4% had a preterm birth, which also represents a borderline increased risk (OR 1.11, 95% CI 1.00–1.23).

However, these findings should be interpreted with caution since few of the reviewed studies controlled for important confounders associated with preterm birth (such as socioeconomic status), and the associations have not yet been shown to have a causal relationship.

In addition, the Shah review was confined to surgical methods of abortion. Where medical (mifepristone and prostaglandin) and surgical methods have been compared, there has been no significant difference reported in the risk of preterm birth.<sup>201–203</sup>

Furthermore, evidence increasingly points to an association between miscarriage and preterm birth. While previous reviews have been conflicting,<sup>189,204,205</sup> a recent systematic review<sup>206</sup> suggests that the odds of preterm birth are similarly increased for both miscarriage and induced abortion. It has been postulated that the increased risk may be related to instrumentation of the cervix and uterus at the time of surgical evacuation.

Further research is needed to understand this and other risk factors for preterm birth as well as abortion methods and gestation.

## 5.6 Psychological sequelae

### RECOMMENDATION 5.13

**B** Women with an unintended pregnancy should be informed that the evidence suggests that they are no more or less likely to suffer adverse psychological sequelae whether they have an abortion or continue with the pregnancy and have the baby.

### RECOMMENDATION 5.14

**B** Women with an unintended pregnancy and a past history of mental health problems should be advised that they may experience further problems whether they choose to have an abortion or to continue with the pregnancy.

## Evidence supporting recommendation 5.13 and 5.14

For most women the decision to have an abortion is not easy and the experience is stressful and probably unpleasant. Most women will experience a range of emotions around the time of the decision and the abortion procedure.<sup>133</sup> However, long-term feelings of sadness, guilt and regret appear to linger in a minority of women.<sup>207</sup>

The great majority of women who have abortions do not experience adverse psychological sequelae. Two recent systematic reviews addressed the relationship between unintended pregnancy,



abortion or childbirth and mental health; both concluded that abortion of an unintended pregnancy was no more likely to be associated with poor mental health outcomes than if the pregnancy continued.<sup>208,209</sup> The quality of the studies included in the reviews was mostly poor to fair, with large variation in the study design, measurement methods and outcomes reported: sample sizes were variable and sometimes small, and there was a lack of adequate control for confounding variables including pregnancy intention and previous pregnancy history.

A good-quality population-based cohort study, published in 2010, linked information from a number of Danish registries to explore rates of first-time psychiatric contact (inpatient admission or outpatient visit) for any type of mental disorder within the 12 months after the abortion or childbirth compared with the 9-month period preceding the event.<sup>210</sup> Data from 84 620 girls and women having an abortion and 280 930 having a baby between 1995 and 2008 were used. The relative risk of a psychiatric contact did not differ significantly after abortion compared with before abortion ( $P = 0.19$ ) but did increase after childbirth compared with before childbirth ( $P < 0.001$ ). The authors concluded that there is no evidence of an increased risk of mental disorders after a first-trimester induced abortion.

A systematic review on the mental health impact of induced abortion was undertaken in 2010 by the National Collaborating Centre for Mental Health in the UK.<sup>137</sup> This review aimed to build upon the American Psychological Association and Charles reviews to establish a better understanding of the complex relationship between abortion and mental health, and included the Danish study discussed above. The review concluded that whether a woman with an unintended pregnancy opts for an abortion or continues the pregnancy, the mental health outcomes will be the same. For women who have a prior history of mental health problems, there is a higher likelihood of mental health problems following both abortion and birth.

# Chapter 6

## Pre-abortion management

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### RECOMMENDATION 6.1



Prior to referral, pregnancy should be confirmed by history and a reliable urine pregnancy test.

### Evidence supporting recommendation 6.1

Confirmation of pregnancy from a clinical history and with a reliable CE-marked\* urinary pregnancy test before referring a woman to an abortion service will avoid a needless consultation which wastes time and money for both the woman and the receiving service.

## 6.1 The abortion decision

### RECOMMENDATION 6.2



Healthcare staff caring for women requesting abortion should identify those who require more support in the decision-making process.

### RECOMMENDATION 6.3



Women who are certain of their decision to have an abortion should not be subjected to compulsory counselling.

### Evidence supporting recommendations 6.2 and 6.3

All women attending an abortion service will require a discussion to determine the degree of certainty of their decision and their understanding of its implications. Clinic staff must be sensitive to the different stages of decision making that individual women have reached and must be able to identify those who may require additional support and counselling. These may include young women, women with mental health problems, women with poor social support and where there is evidence of coercion. This help should be tailored to age, comprehension and social circumstances.

Not all women requesting an abortion will require intensive counselling.<sup>211</sup> In an English study of 231 women presenting for abortion in the early 1980s, 91% of women had an unwanted pregnancy, only 6% were unsure of their decision to have an abortion and only 3% had a pregnancy

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\* *conformité européenne* certifying that the product has met European Union consumer safety, health or environmental requirements

which had initially been wanted.<sup>212</sup> More recently, a formal measure of intendedness of pregnancy was used in two studies in Scotland. In the first,<sup>213</sup> 92% of 316 women and in the second 89.7% of women requesting an abortion had a clearly unintended pregnancy.<sup>214</sup>

### RECOMMENDATION 6.4

- ✓ Pathways to additional support, including counselling and social services, should be available.

#### Evidence supporting recommendation 6.4

While only a small minority of women experience clinically significant psychological sequelae after abortion (see recommendation 8.9), screening tests to identify women at risk and allow timely intervention may be useful. In a 2-year follow-up study of 80 Norwegian women, pressure from a male partner was found to be the strongest predictor of emotional distress 2 years after an abortion, whereas women who chose abortion because they 'had enough children' had slightly better psychological outcomes than average.<sup>215</sup>

For the minority of women who require formal, therapeutic counselling, services should have referral pathways in place with access to trained counsellors with appropriate expertise.

The GDG favours the use of the term 'support' rather than 'counselling' to describe the routine responsibilities of an abortion service, but acknowledges that any of three recognised forms of counselling identified in the Human Fertilisation & Embryology Authority Code of Practice<sup>216</sup> may be required by women considering or undergoing induced abortion:

- Implications counselling: aims to enable the person concerned to understand the implications of the proposed course of action for themselves and for their family.
- Support counselling: aims to give emotional support at times of particular stress.
- Therapeutic counselling: aims to help people with the consequences of their decision and to help them resolve problems that may arise as a result.

### RECOMMENDATION 6.5

- ✓ Women should be given information about the different methods of abortion appropriate to gestation, the potential adverse effects and complications and their clinical implications.

### RECOMMENDATION 6.6

- ✓ Where possible, women should be given the abortion method of their choice.

#### Evidence supporting recommendations 6.5 and 6.6

Women will vary in the amount and type of information that they require prior to deciding on their preferred method of abortion. They should be provided with information that is relevant to their gestation, in a format that is appropriate for their age and degree of comprehension. The information should include the characteristics, potential adverse effects and complications (including their long-term implications) of the different abortion methods.

Several studies have shown that the reasons for women preferring a particular abortion method are numerous and complex. The most common reason for choosing surgical abortion is to avoid repeated visits to the abortion facility. Medical abortion is favoured because of fear of surgery and a perception that it is easier, less painful and maintains privacy.<sup>98,217</sup>

Provision before the abortion consultation of written information about choices of abortion method has been shown to help women make more informed decisions. In an RCT there was no significant difference in the abortion method chosen by women in Great Britain who were given an information leaflet compared with those who were not, but the former group were better informed, found decision making easier and had lower risk-perception scores about both methods and more positive attitudes about medical abortion than those who did not receive written information.<sup>218</sup>

A partially randomised study assessed 445 Scottish women's preferences for, and acceptability of, medical and surgical abortion at 10–13 weeks of gestation. Despite having a preference for a particular method, women were content with alternatives; however, women were more likely to choose the same abortion method again if they had shown a preference for that method prior to abortion. The authors concluded that the availability of medical abortion is an important option for many women who wish to avoid surgery or anaesthesia and should be offered routinely in the late first trimester.<sup>219</sup>

In a randomised study of 1080 women assessing the predictors of acceptability of medical abortion, the authors concluded that satisfaction with medical abortion may be limited by differences between women's expectations of pain and bleeding and their actual symptoms.<sup>220</sup> Information regarding the severity of symptoms, including risk of failure, should be incorporated into patient information sources and counselling.

## 6.2 Initial assessment

### *Blood tests*

#### RECOMMENDATION 6.7

**C** Pre-abortion assessment should always include:

- determination of rhesus blood status.

Where clinically indicated, pre-abortion assessment should also include:

- determination of blood group with screening for red cell antibodies
- measurement of haemoglobin concentration
- testing for haemoglobinopathies.

#### Evidence supporting recommendation 6.7

Ascertainment of rhesus status is required in order that anti-D prophylaxis can be instituted as appropriate.<sup>221,222</sup> If clinically indicated by a woman's history or family history, the 'group and screen' procedure should also include screening for IgG antibodies in case cross-matching and blood transfusion are required.

A systematic review investigating routine preoperative testing found that haemoglobin was lower than 10.0–10.5 g/dl in fewer than 5% of patients.<sup>221</sup> The National Institute for Health and Clinical Excellence (NICE) was unable to identify any direct evidence that measuring preoperative haemoglobin, haematocrit and full blood count in adults improved health outcomes for patients.<sup>223</sup> A retrospective American study demonstrated that the prevalence of anaemia (defined as haemoglobin < 9 g/dl) among 9586 patients scheduled for elective low-risk surgery was 0.8%, and

that those who required transfusion (0.05%) all had clear pretest clinical indicators of potential anaemia.<sup>224</sup> The National Abortion Federation (NAF) Clinical Policy Guidelines recommend haemoglobin testing before first-trimester medical or surgical abortion in women with a history of significant anaemia and in all women undergoing second-trimester surgical or medical abortion.<sup>225,226</sup> However, the NAF 2010 Clinical Policy Guidelines make no reference to haemoglobin testing for either medical or surgical abortion at any gestation.<sup>225</sup>

The GDG was unable to find any evidence for routine screening for sickle cell trait prior to abortion or routine gynaecological surgery. However, sickle cell screening should be considered in those who have not been tested previously and have a family history of sickle cell disease or trait and/or who belong to one of the following ethnic groups: North African, West African, South/Sub-Saharan African, Afro-Caribbean.<sup>223</sup>

### RECOMMENDATION 6.8

**B** It is not cost-effective or necessary to routinely cross-match women undergoing induced abortion.

#### Evidence supporting recommendation 6.8

The incidence of haemorrhage after surgical abortion (with or without transfusion) ranges from 0.07 to 1.5 in 1000 with vacuum aspiration up to 14 weeks of gestation, increases in the mid-trimester to 5.6–8.6 in 1000 and has been reported to be as high as 21 in 1000 when D&E is performed with urea feticide.<sup>227</sup> The risk of haemorrhage requiring transfusion after early medical abortion has been reported as 1.3 in 1000<sup>228</sup> and 6 in 1000 in second-trimester medical abortion.<sup>152</sup> Given such low rates of haemorrhage requiring transfusion it is not cost-effective or necessary to routinely cross-match women undergoing abortion.

#### *VTE risk assessment*

### RECOMMENDATION 6.9

**✓** All women undergoing an abortion should have a VTE risk assessment.

#### Evidence supporting recommendation 6.9

From June 2010, all providers of NHS acute services, including the independent sector, are required to report the proportion of admitted adult patients who have been assessed for a risk of VTE using local admission procedures which use or incorporate the elements of the national VTE risk assessment tool. Women undergoing surgical abortion and women who are admitted for medical abortion should have a VTE risk assessment, in line with NICE clinical guideline 92.<sup>229</sup>

Non-admitted day cases and outpatients are out of the scope of the national policy with respect to reporting but nevertheless still require assessment of VTE risk.

## 6.3 Cervical cytology

### RECOMMENDATION 6.10

- ✓ Women who have not had cervical cytology screening within the recommended interval should be offered screening within the abortion service, or advised on when and where to obtain it.

### Evidence supporting recommendation 6.10

A woman's attendance at an abortion service is an opportunity to review broader aspects of her reproductive health care. If cervical cytology is due and the woman has missed or defaulted from a previous appointment, consideration should be given to her having cytology during pregnancy. The NHS Cancer Screening Programme recommends that unscheduled cervical screening is not justified in association with pregnancy unless a previous screening test was abnormal, providing the woman is in the age group to be screened and has undergone screening within the previous 3–5 years.<sup>230</sup> Providers need to be aware of the different age for the commencement of cervical cytology screening in Scotland and Northern Ireland compared with England and Wales.

The GDG is of the view that it is entirely appropriate for abortion services, particularly within the NHS, to embrace these broader aspects of reproductive health care. However, cervical cytology screening should not be an essential function of an abortion service. Where abortion services are provided through agency arrangements with independent providers, services might lack appropriate mechanisms for ensuring that results of cytology are followed up appropriately. If a cervical cytology screen is taken within the abortion service, mechanisms are essential to ensure that the result is communicated to both the woman and, with permission, her GP, acted upon appropriately and recorded within the local cervical cytology programme. If the woman declines to give permission for correspondence with her GP, she should be advised to attend her GP or local contraceptive and sexual health service for a smear 6 weeks after the abortion.

## 6.4 Ultrasound scanning

### RECOMMENDATION 6.11

- B** Use of **routine** pre-abortion ultrasound scanning is unnecessary.

### RECOMMENDATION 6.12

- C** Ultrasound scanning must be available to all services as it may be required as part of the assessment.

### RECOMMENDATION 6.13

- ✓ Ultrasound scanning should be provided in a setting and manner sensitive to the woman's situation.

### Evidence supporting recommendations 6.11–6.13

Ultrasound is used commonly to assess pregnancies in women before they undergo abortion to confirm gestation and identify abnormalities such as ectopic pregnancy or uterine anomalies. This practice started when medical abortion was introduced with a strict upper limit for eligibility of 9 weeks of gestation, and has now become routine. However, there is no direct evidence that routine ultrasound improves either the safety or efficacy of abortion procedures and no RCTs have been undertaken comparing the outcome of abortions with and without routine preprocedure ultrasound.

A number of studies have compared the estimation of gestation as assessed by ultrasound with that estimated by clinical assessment (pelvic examination and/or the date of the last menstrual period).<sup>231–236</sup> None of the studies was randomised and in all cases the evidence is weak. It is clear, however, that while there are inevitably discrepancies between clinical estimation of gestation and ultrasound estimation, the discrepancy is rarely large. In one US study, 87% of physicians correctly assessed the gestational age of 1016 women presenting for early medical abortion as being less than 63 days and gestation was underestimated in only 1% of cases.<sup>233</sup> In a second US study, ultrasound dating matched clinical dating in 81% of cases.<sup>232</sup> A UK study reported discrepancy between ultrasound estimation and clinical estimation of dates in 30% of cases, but in 50% the discrepancy underestimated gestation by more than 7 days while in the other 50% gestation was overestimated.<sup>234</sup> Unsurprisingly, a Cochrane review on the use of ultrasound for fetal assessment in early pregnancy involving 11 studies and 37 505 women concluded that routine ultrasound in early pregnancy improves gestational dating.<sup>236</sup>

Since both medical and surgical methods are now considered to be appropriate methods for inducing abortion at all gestational ages, a small discrepancy in gestational age should not make a difference to the outcome of the procedure. Medical abortion is provided safely in resource-poor settings which do not have access to routine ultrasound<sup>114</sup> and pre-abortion ultrasound is not routine before early medical abortion in France. A recent study undertaken in the USA tested the feasibility and efficacy of foregoing the routine use of ultrasound for the determination of eligibility for medical abortion. In ten clinics involving 4484 women undergoing medical abortion, reliance on the date of the last menstrual period together with physical examination resulted in only 63 in 4008 women (1.6%) being accepted for medical abortion outside 63 days of gestation on ultrasound.<sup>237</sup> The insistence of the need for routine pre-abortion ultrasound limits the settings in which abortion can be offered in Great Britain. Where ultrasound is routine, it adds to the costs of the service and, in some places, limits the number of assessment appointments that can be made available. Many women are certain of the date of their last menstrual period and some even know the date of conception.<sup>238</sup> Unless women are uncertain of the date of their last menstrual period, there are clinical reasons to suspect 'wrong dates' or the woman is obese or difficult to examine, in the absence of a uterus that is palpable above the pubic symphysis, ultrasound is arguably not indicated to confirm the gestation and the absence of access to routine ultrasound should not be used as a reason to limit options for service delivery. A recent review of provision of medical abortion without the routine use of ultrasound reached a similar conclusion.<sup>239</sup>

Inevitably, ultrasonography will identify abnormalities such as ovarian cysts which would be missed on clinical examination; however, many of these are incidental findings which do not change the management of the woman. Selective preprocedure ultrasound in the first trimester, only performed in case of discrepancy between last menstrual period and uterine size, bleeding or symptoms indicative of ectopic pregnancy, has been reported as being both safe and effective when women are cared for by experienced clinicians.<sup>240</sup>

**RECOMMENDATION 6.14**

- C** Before ultrasound is undertaken, women should be asked whether they would wish to see the image or not.

**Evidence supporting recommendations 6.14**

A systematic review<sup>240</sup> considered the acceptability of the woman seeing the ultrasound image pre-abortion. The majority of women who chose to view the image found it a positive experience (although some did not). None of the women changed their mind about having the abortion after seeing the ultrasound image.

**6.5 Prevention of infective complications****RECOMMENDATION 6.15**

- A** Services should offer antibiotic prophylaxis effective against *C. trachomatis* and anaerobes for both surgical abortion (evidence grade: A) and medical abortion (evidence grade: C).

**RECOMMENDATION 6.16**

- C** The following regimens are suitable for peri-abortion antibiotic prophylaxis:
- azithromycin 1 g orally on the day of abortion **plus** metronidazole 1 g rectally or 800 mg orally prior to or at the time of abortion
- OR**
- doxycycline 100 mg orally twice daily for 7 days starting on the day of abortion, **plus** metronidazole 1 g rectally or 800 mg orally prior to or at the time of abortion
- OR**
- metronidazole 1 g rectally or 800 mg orally prior to or at the time of abortion for women who have tested negative for *C. trachomatis* infection.

**Evidence supporting recommendations 6.15 and 6.16**

Genital tract infection, including pelvic inflammatory disease, occurs in up to 10% of women undergoing induced abortion.<sup>171–176</sup> This is particularly relevant in procedures which access the endometrial cavity through the cervix as some bacterial contamination is inevitable.<sup>241</sup> Post-abortion infection not only causes immediate morbidity but may also lead to tubal subfertility and an increased risk of ectopic pregnancy.<sup>171</sup>

Five to ten percent of sexually active women under the age of 24 years in Great Britain are currently infected with *C. trachomatis*, the majority of whom are asymptomatic.<sup>242</sup> The presence of *C. trachomatis*, *N. gonorrhoea*<sup>166–168</sup> or bacterial vaginosis<sup>169,170</sup> in the lower genital tract at the time of abortion is associated with an increased risk of post-abortion infection.

There are three main strategies commonly in use to minimise infective complications following abortion:



- universal prophylaxis
- universal screening and treatment of positive cases ('screen and treat')
- universal screening and universal prophylaxis (so-called 'belt and braces').

### *Antibiotic prophylaxis for surgical abortion*

A systematic review by Sneyders et al.<sup>243</sup> concluded that the use of antibiotics was effective in preventing pelvic inflammatory disease after first-trimester surgical abortion. Nitromidazoles (e.g. metronidazole), penicillin and tetracycline were the most effective antibiotic agents studied. Single-dose pre- or peri-abortion antibiotic administration was as effective as a short course of antibiotics. The SFP in the USA<sup>241</sup> recommends the universal routine use of antibiotic prophylaxis prior to surgical abortion, preferably with a single dose or short course (3 days) of doxycycline initiated on the day of the procedure. While the optimal antibiotic and dosing regimens remain unclear, both tetracyclines (e.g. doxycycline) and nitromidazoles are proven to confer significant and comparable protection against post-abortion upper genital tract infection.

A wide range of antibiotic regimens for peri-abortion antibiotic prophylaxis are recommended around the world. All have been shown to be better than placebo<sup>244</sup> and practice changes as more evidence accrues. The above regimen suggested by the GDG is felt to be practical, affordable and covers both anaerobes (including bacterial vaginosis) and *C. trachomatis*, whose presence in the lower genital tract at the time of abortion is associated with an increased risk of subsequent infective morbidity. Both doxycycline and azithromycin have been shown in vitro to have some activity against certain strains of *N. gonorrhoea*.<sup>245</sup> The recommended regimen represents an approach which combines prophylaxis and treatment and maximises efficacy and likely compliance. Doxycycline, azithromycin and metronidazole rarely cause allergic reactions and are well absorbed when taken orally. Single-dose regimens should minimise the risk of adverse reactions and antibiotic resistance. Based upon indirect pharmacokinetics, an 800 mg dose of metronidazole (2 tablets of 400 mg) would achieve similar serum concentrations to a 1 g rectal dose.<sup>246</sup>

Given the finding that antibiotic prophylaxis at the time of surgical abortion is also of benefit to women with negative *C. trachomatis* testing, the RCOG recommends that metronidazole on its own would be appropriate for the prophylaxis/treatment of anaerobic organisms in these women.

A large retrospective analysis of the rates of 'serious' infection (defined as fever and pelvic pain treated with intravenous antibiotics, or sepsis, or death caused by infection) among women having early medical abortion in Planned Parenthood clinics in the USA<sup>247</sup> compared rates over a 3-year period. During this time, routine treatment protocols for early medical abortion varied with respect to the route of administration of misoprostol, testing for *C. trachomatis* and the introduction of prophylactic antibiotic therapy.<sup>247</sup> Among the 227 823 women having medical abortion in this study, 92 'serious' infections were reported. The analysis demonstrated a considerable reduction in the rate of serious infection over time, from 0.25/1000 abortions to 0.06/1000 (76%). The study was retrospective and observational and not only the administration of antibiotics but also the route of administration of misoprostol changed during the period of study; however, the sample size was huge.<sup>247</sup>

*Clostridium sordellii* is a Gram-positive anaerobic bacillus that has been reported as a cause of infection in eight deaths in women undergoing medical abortion in North America (data up to 2010).<sup>248</sup> No such deaths have been reported in Europe, where experience with medical abortion is greater. It has been hypothesised that this may be attributable to differences in modes of administration of misoprostol in Europe and the USA or greater use of antibiotic prophylaxis in Europe.<sup>247</sup>

Both doxycycline and metronidazole show in vitro efficacy against *C. sordelli*.<sup>249,250</sup> It has been estimated (based upon the Planned Parenthood study data) that approximately 5000 women would need to be treated with doxycycline to prevent one case of 'serious infection'. However, given the importance of preventing serious infection and the rare fatalities owing to clostridial toxic shock, antibiotic prophylaxis for women undergoing medical abortion is recommended by the RCOG using the same suggested regimens as for surgical abortion.

Neither WHO<sup>2</sup> nor the SFP<sup>241</sup> recommends universal routine antibiotic prophylaxis prior to medical abortion. However, the NAF guidelines recommend that antibiotics should be given to all women at the time of surgical abortion and that women undergoing medical abortion should be able to have antibiotic prophylaxis if they are considered to be 'high risk' or upon request.<sup>225</sup>

In the context of service delivery in Great Britain, the GDG agreed to recommend antibiotic prophylaxis for all women undergoing abortion regardless of the method.

### STI screening

#### RECOMMENDATION 6.17

**B** All women should be screened for *C. trachomatis* and undergo a risk assessment for other STIs (such as HIV, gonorrhoea, syphilis), and be screened for them if appropriate.

#### RECOMMENDATION 6.18

**C** A system for partner notification and follow-up or referral to a sexual health service should be in place.

#### RECOMMENDATION 6.19

**✓** Services should make available information about the prevention of STIs and offer condoms for STI prevention to women undergoing abortion.

### Evidence supporting recommendations 6.17–6.19

Ten to thirteen percent of women attending abortion services screen positive for *C. trachomatis* infection.<sup>251</sup> Routine universal antibiotic prophylaxis without prior screening for STIs misses the opportunity to identify women with STIs and the opportunity to screen and treat their sexual partners. Bacteriological screening of the lower genital tract before abortion, with treatment of those found to be carrying genital tract organisms, is considered by some to be a cheaper and more appropriate strategy.<sup>166,167,170–176,242,243,247,252</sup>

Sepsis (particularly associated with group A streptococcal infection) was the leading cause of direct maternal death in Great Britain in the 2006–2008 triennium, accounting for 29 deaths.<sup>253</sup> While abortion is not specifically mentioned, the report recommends that appropriate antibiotic prophylaxis is crucial peri-abortion and that women should be given information regarding the risks, signs and symptoms of genital tract infection.

With regard to treatment regimens, the British Association for Sexual Health and HIV recommends doxycycline 100mg twice daily for 7 days or azithromycin 1g orally for the treatment of uncomplicated *C. trachomatis*.<sup>242</sup> The Scottish Intercollegiate Guidelines Network endorses azithromycin 1g orally together with follow-up and partner notification of all positive women.<sup>254</sup>

Treatment of bacterial vaginosis is recommended by the British Association for Sexual Health and HIV and involves metronidazole, either 400 mg twice daily for 5–7 days or 2 g as a single dose.<sup>255</sup>

Abortion services protocols should include policies on offering HIV tests in line with the UK national guidelines for HIV testing,<sup>256</sup> and should take into account the local prevalence of HIV and resource constraints. Similar criteria should apply to testing for gonorrhoea. In areas where more than 2 in 1000 people in the general population have diagnosed HIV, the guidelines recommend that an HIV test is considered for everyone at GP registration and hospital admission.<sup>256</sup> In areas of low HIV prevalence, testing should be offered to all women requesting abortion who come from a country of high HIV prevalence; who report sexual contact abroad or in the UK with someone from a country of high HIV prevalence; who have symptoms that may indicate HIV; who are diagnosed with an STI; or whose partner is known to be HIV positive.<sup>257</sup> Where abortion services choose to offer HIV testing, local protocols must ensure that verbal consent is obtained.<sup>256</sup>

It may be appropriate to offer immunisation to women at high risk of hepatitis B, regardless of the results of pre-abortion testing. High-risk groups include intravenous drug users and commercial sex workers. However, hepatitis B immunisation should not be an essential function of an abortion service. Where abortion services are provided through agency arrangements with independent providers, services might lack appropriate mechanisms for ensuring that the immunisation regime is completed once the woman returns home. If hepatitis B immunisation is initiated within the abortion service, mechanisms are essential to ensure that this is communicated to both the woman and, with permission, her GP, and acted upon appropriately. When managing such women, abortion service staff should seek guidance from their local virology department regarding the need for immunisation and the appropriate vaccine course.

There should be a clear pathway for referring women who test positive for HIV or other complex STIs into a specialist genitourinary medicine service.

## 6.6 Contraception

### RECOMMENDATION 6.20

**C** All appropriate methods of contraception should be discussed with women at the initial assessment and a plan agreed for contraception after the abortion.

### Evidence to support recommendation 6.20

The evidence regarding the value of discussing contraceptive options before the abortion is conflicting.

A randomised trial of 420 Icelandic women comparing pre-abortion contraceptive counselling with post-abortion counselling demonstrated no significant effect on contraceptive use 4–6 months after the abortion (86% and 85%, respectively).<sup>258</sup> By contrast, a retrospective case note review of 272 US women undergoing abortion found an increase in the number attending for follow-up and a decrease in the number of women without a contraceptive plan among those counselled about contraception before the abortion.<sup>259</sup>

In the absence of good evidence, the GDG agreed that advising women about contraception at every opportunity during the abortion process seems sensible.

## 6.7 Feticide

### RECOMMENDATION 6.21

**C** Feticide should be performed before medical abortion after 21 weeks and 6 days of gestation to ensure that there is no risk of a live birth.

### Evidence supporting recommendation 6.21

Inducing fetal death before medical abortion may have beneficial emotional, ethical and legal consequences.<sup>260</sup> The RCOG guidance on termination of pregnancy for fetal abnormality (published in 2010) clearly explains the legal situation around late-stage abortions (see Chapter 2).<sup>7</sup> Where a decision to abort a pregnancy after 21 weeks and 6 days is taken, feticide should be routinely offered. In abortions where the fetal abnormality is not compatible with life, abortion without feticide may be preferred. However, in cases where the fetal abnormality is not lethal or the abortion is not for fetal abnormality and is being undertaken after 21 weeks and 6 days of gestation, failure to perform feticide could result in a live birth and survival, which contradicts the intention of the abortion.<sup>261</sup> Regarding fetal pain and awareness, the RCOG has published guidance and concluded that 'In reviewing the neuroanatomical and physiological evidence in the fetus, it was apparent that connections from the periphery to the cortex are not intact before 24 weeks of gestation and, as most neuroscientists believe that the cortex is necessary for pain perception, it can be concluded that the fetus cannot experience pain in any sense prior to this gestation.'<sup>262</sup>

Very few abortions on grounds C or D are undertaken at late gestations. Only 9% of abortions occur after 13 weeks and only 1.5% occur after 20 weeks of gestation.<sup>3</sup> In Great Britain, those few are, for the most part, undertaken within the specialist independent sector. When the method of abortion chosen by a specialist practitioner is surgical (D&E), the nature of the procedure ensures that there is no risk of a live birth, although in one study 91% of women indicated a preference that the fetus was dead.<sup>263</sup> When medical abortion is chosen, special steps are required to ensure that the fetus is dead at the time of abortion. The RCOG recommends feticide for abortions over 21 weeks and 6 days of gestation, except in the case of lethal fetal abnormality, and that feticide should always be performed by an appropriately trained practitioner (under consultant supervision) using aseptic conditions and with continuous ultrasound.<sup>7</sup>

The RCOG recommends intracardiac potassium chloride (KCl) 2–3 ml strong (15%) injection into a cardiac ventricle. A repeat injection may be required if asystole has not occurred after 30–60 seconds. Asystole should be observed for at least 2 minutes and fetal demise should be confirmed by ultrasound scan after 30–60 minutes.<sup>7</sup>

Fetal demise may also be induced by intra-amniotic or intrathoracic injection of digoxin (up to 1 mg) and by umbilical venous or intracardiac injection of 1% lidocaine (up to 30 ml); however, neither procedure consistently induces fetal demise.<sup>7</sup>

A dose of digoxin 1 mg given either intra-amniotically or intrafetally will cause fetal death in 87% of cases; the latter method is much more rapid.<sup>264</sup> A dose of digoxin 1.5 mg given intra-amniotically caused death within 20 hours (in most cases there was still fetal cardiac activity at 4 hours).<sup>265</sup> In a large retrospective review, Molaei et al. (2008) concluded that the overall failure rate with digoxin was 7%, although there were no failures with an intrafetal dose of 1 mg.<sup>266</sup> Importantly, in this review there were no adverse effects at any of the doses used.

Intracardiac injection of either KCl or intrathoracic injection of digoxin requires considerably more skill than intra-amniotic injection of digoxin. While the latter may be slightly less effective in inducing fetal demise, its use may be an option for services that lack personnel with sufficient skill in administering intracardiac injections.

# Chapter 7

## Abortion procedures

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Abortion on grounds relating to the physical or mental health of the woman or of any existing children can be performed within the law at gestations up to 24 weeks.<sup>16</sup> At all gestations up to this limit, abortion can be performed using either surgical or medical methods; however, different abortion techniques are appropriate at different gestations. Figure 7.1 summarises those methods considered by the GDG to be appropriate for use in abortion services in Great Britain for women presenting in different gestation bands. As this guideline focuses on abortion for maternal health reasons, methods for abortion beyond 24 weeks of gestation are not discussed. General recommendations about abortion procedures are discussed in Chapter 4, while recommendations in this chapter relate to specific techniques.

Since many of the recommendations refer to abortions at different gestations, the GDG has produced Table 7.1 reminding readers of the duration of pregnancy in days for each week of gestation as determined from the first day of the last menstrual period.

**Table 7.1 Clarifying gestation**

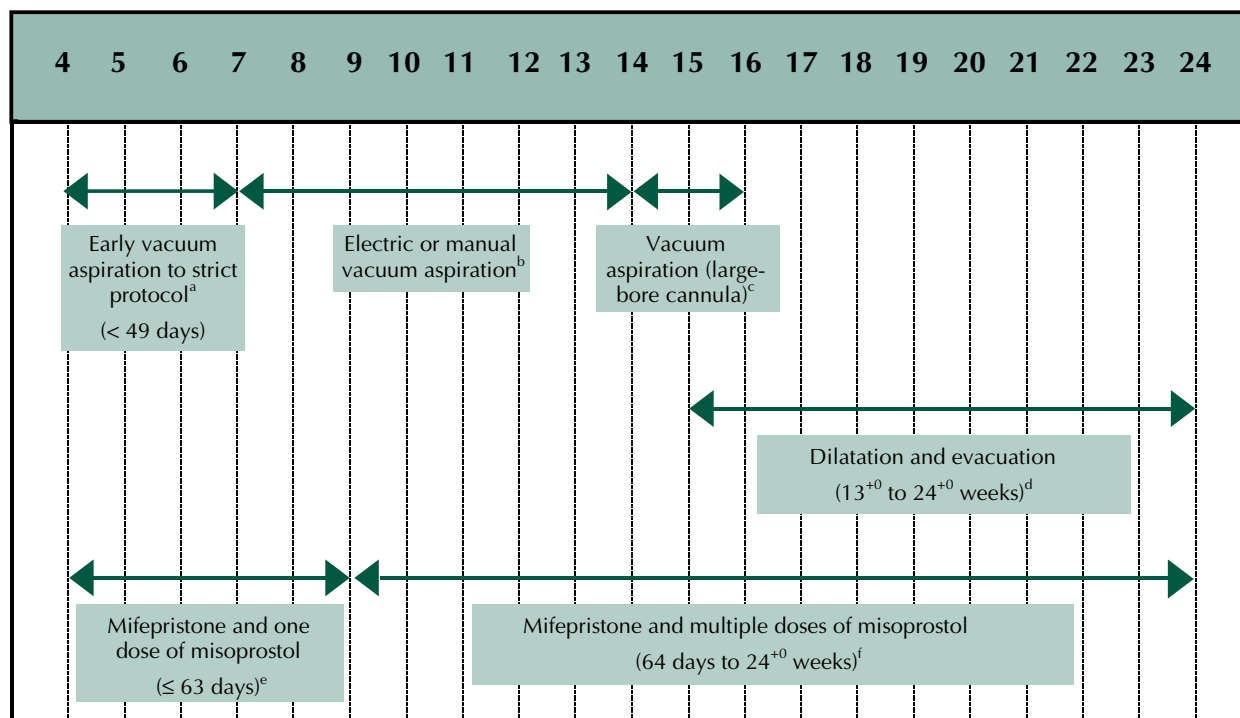
Completed weeks	0	1	2	3	4	5	6	7	8	9	10	11	12
Days	0–6	7–13	14–20	21–27	28–34	35–41	42–48	49–55	56–62	63–69	70–76	77–83	84–90
Completed weeks	13	14	15	16	17	18	19	20	21	22	23	24	
Days	91–97	98–104	105–111	112–118	119–125	126–132	133–139	140–146	147–153	154–160	161–167	168–174	

### 7.1 Surgical methods of abortion

#### *Vacuum aspiration*

#### **RECOMMENDATION 7.1**

**B** Vacuum aspiration is an appropriate method of surgical abortion at gestations up to 14 weeks.



- a. Surgical abortion by means of vacuum aspiration at gestations below 7 weeks. To increase confidence that the gestation sac has been removed, protocols should include safeguards such as examination of the aspirate for the presence of the gestational sac and follow-up serum human chorionic gonadotrophin estimation if needed.
- b. Surgical abortion using electric or manual vacuum aspiration. The uterus is emptied using a suction cannula. Sharp curettage is not recommended.
- c. Surgical abortion using vacuum aspiration which may require large-bore suction cannula and tubing.
- d. Surgical abortion using a combination of vacuum aspiration and specialised forceps.
- e. Medical abortion using a single oral dose of the antiprogesterone mifepristone, followed by a single dose of a prostaglandin analogue.
- f. Medical abortion using a single oral dose of the antiprogesterone mifepristone, followed by multiple doses of a prostaglandin analogue.

**Figure 7.1** Summary of abortion methods appropriate for use in abortion services in Great Britain by gestational age in weeks

## RECOMMENDATION 7.2

- A** Either electric or manual vacuum aspiration may be used as both are effective and acceptable to women and clinicians.

### Evidence supporting recommendations 7.1 and 7.2

It is accepted practice in Great Britain, and a recommendation in the WHO abortion guidance,<sup>2</sup> that vacuum aspiration is preferable to sharp curettage for surgical abortion. An updated Cochrane review,<sup>267</sup> which included only two trials (dating from the 1970s), identified few statistically significant differences between methods, but vacuum aspiration was associated with shorter operating times than sharp curettage. Comparative trials of evacuation methods for miscarriage management also found that vacuum aspiration takes less time to perform, as well as being associated with significantly less blood loss and pain than sharp curettage.<sup>268</sup>

Manual vacuum aspiration (MVA) is a uterine evacuation technique employing a hand-held syringe. Local anaesthesia and analgesia are commonly used for pain management during the procedure; however, it can also be performed under general anaesthetic or conscious sedation. In comparative trials with electric vacuum aspiration, there were no differences in complications, duration of procedure or women's preferences.<sup>267</sup> Clinicians did report more frequent difficulty when performing the abortion by MVA at gestations greater than 9 weeks. Thus, either an electric or manual device may be used for vacuum aspiration procedures; however, clinicians must be aware of their skill level when using MVA at gestations higher than 9 weeks.

One randomised trial found no statistically significant differences in cervical injury, febrile morbidity, blood transfusion, antibiotic use or incomplete evacuations with flexible compared with rigid vacuum cannulae.<sup>267</sup> A small randomised trial has investigated the usefulness of a specially lubricated cannula for early surgical abortion.<sup>269</sup> Results were inconclusive and no recommendation can be made.

### RECOMMENDATION 7.3

**B** Vacuum aspiration under 7 weeks of gestation should be performed with appropriate safeguards to ensure complete abortion, including inspection of aspirated tissue.

#### Evidence supporting recommendation 7.3

A prospective cohort study of abortion procedures performed in the 1970s found that electric vacuum aspiration (EVA) performed at 6 weeks of gestation or less had a higher failure rate than when performed at 7–12 weeks of gestation.<sup>160</sup> This finding led to the recommendation that surgical abortion should be avoided at very early gestations. However, in a series of 2399 surgical abortions undertaken to a rigorous protocol – which included pre-abortion urinary pregnancy testing and ultrasound assessment, MVA, inspection of aspirated products and follow-up by serum human chorionic gonadotrophin (hCG) estimation in those women in whom no gestation sac was verified in the aspirate – the failed abortion rate at 6 weeks or less was only 0.13% or lower.<sup>270</sup>

A subsequent study using a rigorous similar protocol reported on the outcome of 1132 procedures performed at three clinics.<sup>271</sup> The treatment algorithm differed in that surgeons could use either electric or manual vacuum evacuation. The failed abortion rate was 1.5% for the total study population and 2.3% among the 750 women successfully followed up at 2 weeks. EVA was used in 40% of cases and, although not statistically significantly different, procedures performed by MVA were associated with the lowest continuing pregnancy rate (1.1%). Nevertheless, this is higher than the rate reported by Creinin and Edwards<sup>270</sup> and also higher than the rate of 0.1% among women at less than 49 days of gestation reported by Ashok et al. in a UK series of early medical abortions.<sup>130</sup>

The GDG was unable to identify any RCTs comparing such protocols with mifepristone and misoprostol for early medical abortion. A number of randomised trials have compared prostaglandin-analogue-only regimens or mifepristone with other prostaglandin analogues and vacuum aspiration.<sup>93,272–277</sup> The results of these studies did not strongly favour either method as continuing pregnancy was rarely, if ever, reported.

In view of these findings, the GDG recognises that very early surgical abortion is an option, but advises that the procedure should be undertaken using a rigorous protocol and appropriate safeguards. Women should be advised of the potential need for further evaluation with serum blood testing and additional follow-up visits if there is suspicion of a failed procedure.



#### RECOMMENDATION 7.4

- A** Vacuum aspiration may be performed from 14 to 16 weeks of gestation; large-bore cannulae and suction tubing may be required to complete the procedure without the use of forceps to remove larger fetal parts.

#### Evidence supporting recommendation 7.4

Vacuum aspiration can be performed from 14 to 16 weeks of gestation using large-bore cannulae (15.9 mm in diameter) and suction tubing.<sup>278</sup> Cannulae greater than 12 mm in diameter may not be readily available in Great Britain, in which case intrauterine manipulation with forceps may be necessary to remove larger fetal parts. The method of choice at gestations above 13 weeks therefore varies according to resources and the skills and experience of local clinicians.

A cohort study from Oxford has shown that morbidity after first-trimester abortion is directly related to gestation and inversely related to the seniority of the surgeon.<sup>279</sup> This finding suggests that abortion procedures, particularly those at 12 weeks and above, should not be delegated to junior team members without appropriate supervision.

#### RECOMMENDATION 7.5

- ✓** During vacuum aspiration, the uterus should be emptied using the suction cannula and blunt forceps (if required) only. The procedure should not be routinely completed by sharp curettage.

#### RECOMMENDATION 7.6

- C** Access to ultrasound during vacuum aspiration is recommended but not routinely required for uncomplicated procedures.

#### Evidence supporting recommendations 7.5 and 7.6

Clinicians differ in the techniques they use to ensure that the uterus has been completely emptied. The GDG believes there is no need to undertake routine sharp curettage at the end of a vacuum aspiration. The 'gritty' sensation resulting from the completely emptied uterus clamping down around the suction cannula provides sufficient reassurance. A report of a comparative trial also highlighted the risks of sharp curettage, including Asherman's syndrome, and suggested routine intraoperative ultrasound as a means of obviating the need for sharp curettage.<sup>280</sup>

GDG members report that ultrasound is commonly used to assess the uterus during and after vacuum aspiration to confirm a complete abortion, particularly where closed suction systems are used or when the procedure is challenging. No trials were identified that specifically evaluated the use of ultrasound to assess the uterus during and after vacuum aspiration to confirm a complete abortion.

Two trials were identified which evaluated the impact of ultrasound at the time of vacuum aspiration on intra- and postoperative complications. In each study, routine sharp curettage was also performed. In the first trial, continuous abdominal ultrasound did not significantly affect the incidence of immediate complications. The use of ultrasound was associated with a significant reduction in the rate of evacuation for retained products of conception (0% versus 4.7%) and infection (1.9% versus 7.5%); however, the complication rate in the control group was higher than

published in other studies.<sup>281</sup> Other outcomes such as blood loss, procedure time, days of analgesia use, postoperative bleeding and convalescence were also lower in the intervention group. In the other trial, a single transvaginal ultrasound examination was performed at the completion of the evacuation and a repeat aspiration performed in most cases if the endometrial thickness was  $\geq 8$  mm.<sup>282</sup> Retained products of conception were later diagnosed significantly less frequently in the intervention groups; however, these results should be interpreted with caution. Other studies have shown that the uterine cavity has a variable appearance following successful evacuation<sup>283,284</sup> and that endometrial thickness is not a useful predictor of the need for subsequent uterine evacuation for retained products of conception.<sup>285</sup>

Therefore, while access to ultrasound may prove useful in some cases, routine use is not a requirement for the safe performance of vacuum aspiration procedures.

### *Dilatation and evacuation (D&E)*

## **RECOMMENDATION 7.7**

**A** Surgical abortion by D&E, preceded by cervical preparation, is appropriate for pregnancies above 14 weeks of gestation.

## **RECOMMENDATION 7.8**

**B** Continuous ultrasound guidance during D&E is recommended to reduce the risk of surgical complications.

### **Evidence supporting recommendations 7.7 and 7.8**

D&E is a safe and effective method of surgical abortion following specialised training.<sup>122,286</sup> A retrospective cohort study of 297 women compared the complication rates of D&E with misoprostol-only regimens of medical abortion.<sup>287</sup> Overall, women who underwent medical abortion were significantly more likely to have a complication than women who underwent D&E (29% versus 4%). Women who underwent medical abortion with misoprostol were less likely to have complications than women treated with other regimens, but still had more complications than those having D&E (22% versus 4%). The most common complication of medical abortion was retained products of conception requiring surgical evacuation but, even when these cases were excluded, women who underwent medical abortion still had more complications, including one case of uterine rupture. A recent study from the USA involved a retrospective case note review of 242 women between 14 and 24 weeks gestation undergoing either D&E or medical abortion following either unintended pregnancy (121 women) or fetal demise (121 women). The primary aim of the study was to compare induced abortion and the treatment of fetal demise, but there were no statistically significant differences in morbidity between the two conditions. Medical abortion (induction of labour) was associated with higher rates of morbidity compared with D&E for both groups of women. However, treatment with intravenous antibiotics for 'presumed infection' accounted for all the excess morbidity in women undergoing medical abortion and the authors suggested that shivering and pyrexia commonly associated with prostaglandin induction of labour had been mistakenly attributed to infection.<sup>288</sup>

The use of real-time ultrasound scanning during D&E can reduce the perforation rate. In a study comparing 353 elective abortions (at 16 and 24 weeks of gestation) performed without ultrasound

with 457 abortions in which ultrasound was routinely employed,<sup>289</sup> the rate of uterine perforation was 0.2% in the scanned group compared with 1.4% in the control group.

Historically, it has been considered that D&E is a risk factor for subsequent adverse pregnancy outcomes, including cervical weakness, pregnancy loss and preterm birth. A retrospective case series included 600 women who underwent mid-trimester D&E between 1996 and 2000.<sup>290</sup> Interpretation of the findings is difficult, as no reference cohort of women who had not undergone D&E was described. Nevertheless, rates of adverse pregnancy outcomes appeared similar to those of unselected populations. The authors concluded that 'second-trimester D&E is not a risk factor for mid-trimester pregnancy loss or spontaneous preterm birth'.

D&E is the most common method used at gestations above 14 weeks in non-NHS abortion services in England. Few surgeons in the NHS perform D&E. D&E can be undertaken safely by providers who have been trained in the technique and have the necessary instruments and a caseload sufficient to maintain their skills. For those lacking the necessary expertise and caseload, medical abortion using mifepristone and a prostaglandin analogue is appropriate.

### *Cervical preparation for surgical abortion*

#### **RECOMMENDATION 7.9**

**B** Cervical preparation should be considered in all cases.

#### **RECOMMENDATION 7.10**

**B** The following regimens are recommended for cervical preparation up to 14 weeks of gestation:

- misoprostol 400 micrograms administered vaginally 3 hours prior to surgery or sublingually 2–3 hours prior to surgery.

#### **RECOMMENDATION 7.11**

**B** Vaginal misoprostol can be administered either by the woman herself or by a clinician.

#### **RECOMMENDATION 7.12**

**B** After 14 weeks of gestation, osmotic dilators provide superior dilatation to medical methods; however, misoprostol is an acceptable alternative up to 18 weeks of gestation.

### **Evidence supporting recommendations 7.9–7.12**

Routine cervical preparation before surgical abortion may be beneficial in all cases, but is particularly beneficial where risk factors for cervical injury or uterine perforation exist, such as adolescents aged ≤ 17 years, advanced gestational age (particularly among multiparae), cervical anomalies or previous surgery, or when a less experienced surgeon is operating.<sup>121,155</sup> The existing evidence is insufficient to determine at what gestational age cervical priming should be routine. The risk of complications tends to increase after 9 weeks of gestation and even more in the 12th and 13th weeks of gestation. The current WHO recommendation is that cervical preparation may be considered at any gestational age, but is recommended at 12–14 weeks of gestation.<sup>2</sup>

Methods of cervical ripening include pharmacological agents and osmotic dilators. All methods are generally safe, although their efficacy and adverse effects vary.<sup>291</sup> No published study has investigated whether pharmacological methods of cervical priming reduce uncommon complications such as uterine perforation and cervical laceration. However, medical methods do decrease the duration of the abortion procedure. This may be particularly important with increasing gestational age when mechanical dilation takes longer and becomes more difficult. The adverse effects that women experience with cervical ripening, such as pain, need to be balanced against the reduction in the time taken to complete the procedure. Mifepristone 200 mg, osmotic dilators and misoprostol 400 micrograms administered either vaginally or sublingually are all effective for cervical preparation.<sup>291</sup> Nitric oxide donors are not recommended as they are ineffective.<sup>292</sup>

Gemeprost 1 mg vaginally 3 hours prior to surgery or mifepristone 200 mg orally 36–48 hours prior to surgery are both effective and are licensed preparatory regimens. Although misoprostol is not licensed for cervical preparation, it is recommended by the GDG based on its overall profile of effectiveness, adverse effects, cost and ease of use. Women may be reassured that these regimens are evidence based, safe and widely used.

Misoprostol by the vaginal route is associated with the fewest gastrointestinal adverse effects and 3 hours is the optimal duration of use. Efficacy is not compromised if women self-administer the vaginal tablets; women find self-administration acceptable.<sup>109,293,294</sup> Sublingual administration for 2–3 hours is superior to vaginal administration but is associated with more gastrointestinal adverse effects.

Administration of cervical priming agents can be associated with painful cramps, bleeding and unexpected expulsions. Therefore, extending the duration of use beyond those recommended should be avoided.<sup>291</sup>

Cervical dilation for D&E must be sufficient to allow passage of operative instruments and fetal parts without causing injury to the cervical canal.<sup>295</sup> Few RCTs exist from which to determine the optimal regimen for cervical preparation before D&E, particularly beyond 20 weeks.<sup>296</sup> Buccal misoprostol in doses ranging from 400 to 800 micrograms appears to achieve adequate cervical preparation up to 18 weeks of gestation.<sup>149,150,297</sup> Repeated doses are sometimes necessary and additional manual dilatation is frequently required.

Overnight placement of osmotic dilators results in greater cervical dilation and easier subsequent manual dilatation than prostaglandin analogues administered on the day of surgery.<sup>298,299</sup> The addition of misoprostol shortly before D&E did not significantly improve initial cervical dilation in women at 13–21 weeks of gestation.<sup>300</sup> A recent systematic review concluded that osmotic dilators were superior to prostaglandins with respect to cervical dilation throughout the second trimester and with respect to procedure time within the early second trimester.<sup>301</sup>

The only study which examines mifepristone for cervical preparation prior to D&E<sup>302</sup> compared a combination regimen with misoprostol alone. Greater initial cervical dilation was achieved with the addition of mifepristone; however, several women in this group aborted spontaneously before surgery.

### *Prophylactic uterotonics*

#### **RECOMMENDATION 7.13**

**A** Use of medications containing oxytocin or ergometrine are not recommended for prophylaxis to prevent excessive bleeding at the time of vacuum aspiration.

Cohort studies from the 1970s suggested that blood loss with vacuum aspiration increases with gestational age and could be reduced with the administration of uterotonics such as oxytocin and ergometrine.<sup>303,304</sup> Routine or prophylactic use of uterotonics subsequently became commonplace.

Four RCTs have since been published assessing the effect of routine administration of oxytocin on blood loss during first-trimester vacuum aspiration under general anaesthetic (see evidence table 6).<sup>305–308</sup> Two trials also included an arm to test the utility of ergometrine. All of the studies were small and therefore underpowered to determine the utility of uterotonics in reducing rare complications such as haemorrhage. One study in 64 women undergoing vacuum aspiration at 9 weeks of gestation or greater demonstrated a median blood loss in those receiving oxytocin of 17.6 ml (range 6.1–72.7 ml) compared with 24.5 ml (range 6.7–94.3 ml) in the placebo group.<sup>306</sup> Although this was statistically significant ( $P = 0.02$ ), the reduction in blood loss was of a magnitude unlikely to be of clinical relevance. None of the remaining studies showed any statistical difference in blood loss with uterotonics compared with placebo or no treatment. Women who received ergometrine were more likely to experience postoperative vomiting.<sup>308</sup>

Based on these randomised trials, there appears to be no benefit to the routine or prophylactic use of uterotonic medications at the time of vacuum aspiration. However, the use of oxytocin is likely to be effective at inducing uterine contraction sufficient to reduce blood loss in the event of heavy bleeding.

Regimens intended to reduce blood loss associated with paracervical block have been tested. One clinical trial in which women undergoing abortion by D&E were randomised to one of four paracervical block regimens containing 0.5% bupivacaine alone or in combination with dilute adrenaline (epinephrine) and/or 0.2 mg methylergonovine\* failed to demonstrate any significant differences in blood loss between groups.<sup>309</sup> In a double-blind, randomised, placebo-controlled trial,<sup>310</sup> women undergoing D&E were randomised to a paracervical block containing 4 units of vasopressin in 20 ml 1% mepivacaine or a block containing only 20 ml mepivacaine. No differences were seen in women undergoing D&E at  $\leq 14$  weeks of gestation, but statistically significant reductions in blood loss were seen with the addition of vasopressin in women at later gestations, with a difference in blood loss of 81 ml at 15–16 weeks ( $P > 0.001$ ), 147 ml at 17–18 weeks ( $P < 0.001$ ) and 221 ml at  $\geq 19$  weeks ( $P < 0.01$ ). There were also fewer women with blood loss  $\geq 500$  ml in the vasopressin group (1.7% versus 8.4%;  $P = 0.004$ ). One subsequent small trial of 33 women found no differences in uterine artery blood flow in women undergoing D&E with a mean gestational age of 16.8 weeks (SD 1.7) who were randomly assigned to paracervical injection of saline (10 ml) with or without the addition of 4 units of vasopressin.<sup>311</sup> There were also no differences in blood loss, but the study was underpowered to assess this outcome. Vasopressin is not used for vasoconstriction in the UK.

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\* ergot alkaloid, marketed in the USA

## Pain relief for surgical abortion

### *Anaesthesia*

#### RECOMMENDATION 7.14

**B** Services should be able to provide surgical abortions without resort to general anaesthesia.

#### Evidence supporting recommendation 7.14

In the 1970s, the relative safety of surgical abortion performed with either local or general anaesthesia had not been clearly established. A number of observational and partially randomised studies comparing the two techniques demonstrated the benefits of local anaesthesia on a variety of outcomes (evidence table 7). A more recent study from India suggested that women see advantages in local anaesthesia and some are willing to accept additional short-term pain in exchange for these advantages.<sup>312</sup>

Local anaesthesia may be preferable to service providers because it can be administered outside a theatre setting and with fewer personnel, making it less costly. For women, its use removes the need to fast in preparation for the procedure, has quicker recovery and avoids the drowsiness and other after effects of the sedating medication given with general anaesthesia or conscious sedation.

Women and clinicians in Great Britain are relatively unfamiliar with abortion under local anaesthesia, although its use is increasing. The GDG feels strongly that services should make the option of abortion under local anaesthesia available, starting with low-gestation procedures and advancing in gestational age as experience increases.

A paracervical block is the usual local anaesthesia for first-trimester surgical abortion, although data on its effectiveness are heterogeneous and limited.<sup>313–316</sup> The technique is not standardised, but some variations do show a small reduction in pain compared with others. The pain of cervical dilation is reduced with deep injection of the paracervical block,<sup>317,318</sup> with waiting 3 minutes between injection and dilation<sup>319</sup> and with adding a 4% intrauterine lidocaine infusion.<sup>320</sup> Deep injections and intrauterine infusions also decreased pain with aspiration, while premedication with ibuprofen or naproxen improved intra- and postoperative pain.<sup>321,322</sup>

An alternative to an injected local anaesthetic is the application of a topical anaesthetic jelly to the cervical canal.<sup>332</sup>

#### RECOMMENDATION 7.15

**C** If conscious sedation is used during surgical abortion, it should be undertaken only by trained practitioners and in line with DH guidance.

#### Evidence supporting recommendation 7.15

Conscious sedation is used in place of general anaesthesia by some abortion providers. Regimens typically include an intravenous opioid (such as fentanyl) plus an intravenous sedative (such as midazolam or propofol).

In a Cochrane review of pain control for first-trimester surgical abortion,<sup>323</sup> three studies investigating conscious sedation were discussed. The authors concluded that the addition of

conscious intravenous sedation using diazepam and fentanyl to paracervical block decreased procedural pain.

Two UK reports set out the requirements for services choosing to offer conscious sedation.<sup>324,325</sup>

### *Analgesia*

#### **RECOMMENDATION 7.16**

**B** Women should routinely be offered pain relief (for example, NSAIDs) during surgical abortion.

#### **Evidence supporting recommendation 7.16**

In routine clinical practice, analgesia is offered to women following surgical abortion and both during and after medical abortion. One randomised trial evaluated the use of an NSAID, diclofenac, at the time of cervical priming with oral misoprostol prior to suction termination under sedation with sublingual lorazepam,<sup>326</sup> but reported no differences in pain control with aspiration or postoperatively, or with acceptability of pain control. However, this study provided reassurance that treatment with an NSAID did not reduce the efficacy of misoprostol cervical priming.

There is little research evidence to guide the choice of analgesic regimens.

#### **RECOMMENDATION 7.17**

**A** Prophylactic paracetamol (oral or rectal) is ineffective in reducing pain after surgical abortion and is not recommended.

#### **Evidence supporting recommendation 7.17**

Four randomised trials have assessed the utility of prophylactic oral or rectal paracetamol on pain after surgical abortion.<sup>327–330</sup> None demonstrated a benefit of paracetamol over placebo. A Cochrane review on pain control in first-trimester surgical abortion also concluded that there was no benefit to premedication with paracetamol or a compound containing paracetamol with codeine.<sup>313</sup> This review found the most consistent reduction in pain postoperatively occurred in women who had received an opioid (particularly fentanyl) together with propofol and some benefit to premedication with intramuscular ketorolac or diclofenac or oral lornoxicam.

## **7.2 Medical methods of abortion**

#### **RECOMMENDATION 7.18**

**B** Medical abortion regimens using 200 mg oral mifepristone and misoprostol are effective and appropriate at any gestation.

#### **Evidence supporting recommendation 7.18**

Evidence from a randomised trial (Level Ib evidence) indicates that a dose of 200 mg has similar efficacy compared with 400 mg or 600 mg.<sup>331</sup> This study used the prostaglandin analogue

gemeprost, but Level III evidence from large case series using 400 micrograms of oral misoprostol following either 200 mg or 600 mg of mifepristone confirmed that there was no difference in efficacy between the two doses of mifepristone.<sup>332</sup>

An early WHO multicentre trial included women at gestations up to 56 days.<sup>331</sup> WHO has since conducted a similar trial involving 896 women at gestations of 57–63 days comparing 200 mg and 600 mg of mifepristone in combination with gemeprost 1 mg vaginally.<sup>333</sup> Again, both regimens had similar efficacy.

Some studies have investigated whether the dose of mifepristone could be lowered further. One multicentre trial (1224 women at gestations of less than 57 days) investigated the impact of reducing the dose of mifepristone to 50 mg; however, this dose was associated with a 1.6-fold higher failure rate than the 200 mg dose.<sup>334</sup>

A more recent study aimed to determine whether 100 mg and 200 mg mifepristone followed by 800 micrograms of vaginal misoprostol taken 24 or 48 hours later were equivalent in efficacy.<sup>335</sup> Equivalence was demonstrated between both the doses of mifepristone and the two intervals for administration of misoprostol. This suggests that a dose of 100 mg mifepristone may be adequate. However, verification from studies in other centres is required before this dose is adopted in routine practice.

The GDG evaluated systematic reviews of the studies that resulted in the combined mifepristone and prostaglandin analogue regimens in current use for early medical abortion. Single-agent regimens have been found to have unacceptable failure rates. In a randomised, double-blind, placebo-controlled trial comparing a regimen of mifepristone and misoprostol with misoprostol alone up to 56 days of gestation, complete abortion rates were 96% and 88%, respectively ( $P < 0.05$ ).<sup>336</sup> A Cochrane review examined 39 trials of early medical abortion including combined and prostaglandin analogue only regimens.<sup>337</sup> All but one of the five trials reported higher effectiveness with the combined regimen.

Single-agent regimens are not considered to have a role in abortion practice in Great Britain, where mifepristone is readily available, and are not considered further in this guideline.

In a multicentre randomised trial comparing a combination of methotrexate and misoprostol with mifepristone and misoprostol, abortions with mifepristone were completed faster than those with methotrexate but the overall success rate, adverse effects and complications were similar.<sup>338</sup> Although methotrexate may have a place in countries where mifepristone is unavailable, it is not considered further in this guideline.

Historically, the conventional prostaglandin E1 analogue used for abortion procedures was gemeprost. A 1 mg vaginal pessary costs approximately £43 and is highly temperature sensitive. A series of studies reviewed by the GDG demonstrated that the alternative E1 analogue, misoprostol, which costs less than £1 per dose, is as if not more effective for early medical abortion, cervical priming and medical abortion from 13 to 24 weeks of gestation.<sup>339–345</sup> In addition, a single-centre study suggested that women felt more pain with gemeprost.<sup>346</sup>

The GDG therefore recommends the use of misoprostol.

The following are licensed uses for mifepristone with a prostaglandin analogue for abortion care in Great Britain:<sup>347</sup>

- Medical abortion up to 49 days of amenorrhoea:
  - 600 mg oral mifepristone followed 36–48 hours later by misoprostol 400 micrograms orally
  - 600 mg or 200 mg oral mifepristone followed 36–48 hours later by 1 mg gemeprost vaginally.



- Medical abortion between 50 and 63 days of amenorrhoea:
  - 600 mg or 200 mg oral mifepristone followed 36–48 hours later by 1 mg gemeprost vaginally.
- Preparation for the action of prostaglandin analogues in the termination of pregnancy for medical reasons beyond the first trimester:
  - 600 mg oral mifepristone taken 36–48 hours prior to scheduled prostaglandin administration which will be repeated as often as indicated.
- Softening and dilating of the cervix prior to surgical termination during the first trimester:
  - 200 mg oral mifepristone followed 36–48 hours later, but not beyond, by surgical termination of pregnancy.

Several of the regimens and routes of administration of mifepristone and misoprostol recommended in this guideline are outside of the medications' licenses. However, the European Economic Community Council Directive 65/65/EEC specifically permits doctors to use 'licensed medicines for indications or in doses or by routes of administration outside the recommendations given in the licence'.<sup>348</sup> Women should be properly informed before a drug is prescribed for an unlicensed indication.<sup>349</sup> Drugs prescribed by doctors outside the licence can be dispensed by pharmacists and administered by nurses and midwives. It is essential to have signed local protocols or individual prescriptions in respect of any substance prescribed outside the terms of its product licence. Provided a medical practitioner has prepared and signed a local protocol or individual prescription, midwives, health visitors or nurses may administer the drug. It should be noted that mifepristone and misoprostol, when used with the intention of inducing an abortion, cannot be provided under a patient group direction (previously known as 'group protocol').

### *Medical abortion at ≤ 63 days of gestation (early medical abortion)*

#### **RECOMMENDATION 7.19**

**B** The following regimens are recommended for early medical abortion:

- At ≤ 63 days of gestation, mifepristone 200 mg orally followed 24–48 hours later by misoprostol 800 micrograms given by the vaginal, buccal or sublingual route.
- At ≤ 49 days of gestation, 200 mg oral mifepristone followed 24–48 hours later by 400 micrograms of oral misoprostol.

#### **RECOMMENDATION 7.20**

**B** For women at 50–63 days of gestation, if abortion has not occurred 4 hours after administration of misoprostol, a second dose of misoprostol 400 micrograms may be administered vaginally or orally (depending upon preference and amount of bleeding).

#### **Evidence supporting recommendations 7.19 and 7.20**

Misoprostol is as or more effective when used vaginally, sublingually or buccally than when used orally for inducing early medical abortion.<sup>350–352</sup> As gestation advances beyond 49 days, however, vaginal misoprostol is more effective than oral misoprostol<sup>339</sup> and has fewer adverse effects than sublingual or buccal misoprostol.<sup>337</sup> Nevertheless, some women may prefer an oral route of administration.<sup>353</sup>

Given its relative effectiveness, buccal or sublingual administration of misoprostol in combination with mifepristone is acceptable at ≤ 63 days of gestation and oral misoprostol may be used with

mifepristone at  $\leq 49$  days of gestation. Women should be advised of the greater risk of adverse effects with non-vaginal routes.

Several studies have examined the time interval between administration of mifepristone and misoprostol and these have been summarised in two reviews published in 2006 and 2010.<sup>354,355</sup> These studies investigated simultaneous administration of mifepristone and misoprostol together with separate administration at intervals of 6–8 hours, 24 hours, 36 hours, 48 hours and 72 hours. Meta-analyses of five pooled RCTs showed no statistical difference in efficiency between shorter and longer dosing intervals. However, there was a trend to lower success rates with intervals of less than 8 hours.

The rate of surgical intervention following medical abortion has been shown to be the same for women with a body mass index of less than 30 and those with a body mass index greater than 30.<sup>356</sup>

### *Place of misoprostol administration*

## **RECOMMENDATION 7.21**



It is safe and acceptable for women who wish to leave the abortion unit following misoprostol administration to complete the abortion at home. There must be an adequate support strategy and robust follow-up arrangements for these women.

### **Evidence supporting recommendation 7.21**

In England, Scotland and Wales, according to the DH (England) interpretation of the Abortion Act, both mifepristone and misoprostol must be given in premises licensed for abortion, although there is no legal restriction on where the abortion actually takes place. Several studies have confirmed that home use of misoprostol is safe, acceptable and effective up to 63 days of gestation and in many other countries it is the standard of care.<sup>357–359</sup>

In a Swedish study of women undergoing early medical abortion at home at up to 49 days of gestation, the home regimen was safe and 98% of women said they would use this method if they had a further abortion.<sup>360</sup> Furthermore, there was no difference in women's satisfaction between those with a gestational length of up to 49 days compared with women at 50–63 days of gestation.<sup>361</sup>

Data on home use of misoprostol in Great Britain are limited owing to legal restrictions. In 2005, a multicentre questionnaire assessed the acceptability of home medical abortion among 553 women who had just undergone abortion in hospital. Three hundred and sixty-six women returned the questionnaire. Most felt that they would be able to manage the pain and bleeding associated with a medical abortion at home, but only 36% would choose home use of misoprostol if given the option.<sup>362</sup> This contrasts with the opinions of women in other studies who had actually experienced abortion at home in which consistently over 90% would choose to have a further abortion outside a clinical setting. The DH looked at three types of community setting and conducted in-depth interviews with women. Most were satisfied with the community rather than hospital setting but did not feel that community or home settings would be suitable for all women. Few women were concerned with the safety of abortion outside a hospital setting.<sup>110</sup>

In the only publication on home administration of misoprostol in Great Britain, 49 women at up to 56 days of gestation, following the administration of mifepristone 200 mg in hospital, were given 600 micrograms of misoprostol to administer sublingually at home.<sup>363</sup> Forty-eight women took the misoprostol and aborted at home and one woman elected to return to the hospital for misoprostol

administration. Ninety-two percent of the women returned study questionnaires; 82% were very satisfied and 14% satisfied with undergoing treatment at home, and none was dissatisfied.

In a recent publication, 249 women who completed their abortions at home in England and Wales were surveyed. One hundred and sixty-two women responded and, of these, 85% preferred being able to complete their abortion in a home rather than in a clinical setting.<sup>364</sup> Ninety-six percent found the experience acceptable and 96% felt that they would have been able to obtain clinical help if required. Home completion was less acceptable among those who had a pregnancy greater than 49 days of gestation and among Asian women.

In a recent Scottish study, 145 women elected to complete early medical abortion at home.<sup>293</sup> Sixty-nine percent returned a questionnaire recording their views of the experience. Eighty-one percent of women found the bleeding, and 58% found the pain, to be 'as expected' or 'not as bad as expected'. Eighty-four percent of women would recommend early discharge to complete medical abortion at home.

It is clear that women who are able to choose their method of abortion are more satisfied with the outcome than women denied a choice. Neither early medical abortion nor home administration of misoprostol suits all women. However, published data do not suggest any clinical reason why women should remain in hospital during their abortion, and demonstrate that it is safe for women to administer misoprostol at home.

### *Medical abortion at 9–13 weeks of gestation*

## **RECOMMENDATION 7.22**

**A** The following regimen is recommended for medical abortion between 9 and 13 weeks of gestation:

- Mifepristone 200 mg orally followed 36–48 hours later by misoprostol 800 micrograms vaginally. A maximum of four further doses of misoprostol 400 micrograms may be administered at 3-hourly intervals, vaginally or orally.

### **Evidence supporting recommendation 7.22**

In a case series of 253 women at 63–83 days of gestation managed using a regimen of mifepristone 200 mg followed 36–48 hours later by a single dose of misoprostol 800 micrograms vaginally, the complete abortion rate was 95%, rising to 96% after repeat misoprostol administration in three women.<sup>365</sup>

In a randomised trial involving 368 women at 10–13 weeks of gestation, participants were randomly allocated to surgical abortion by vacuum aspiration under general anaesthesia or medical abortion with mifepristone 200 mg followed 36–48 hours later by repeated doses of misoprostol.<sup>131</sup> Complete abortion rates were 95% in the medical group and 98% in the surgical group (difference not significant). There were more adverse events in the medical group, but 70% indicated that they would opt for the same method in the future.

The same group subsequently reported a consecutive series of 483 women at 64–91 days of gestation, managed using the same regimen.<sup>366</sup> The complete abortion rate was 95% and was gestation related. In this series, up to five doses of misoprostol were permitted.

A small case series (25 women at 9–12 weeks of gestation) using mifepristone 200 mg followed by gemeprost 1 mg to a maximum of five doses reported a complete abortion rate of 96%. All women except one were managed as day cases.<sup>367</sup>

In a randomised trial involving 340 women, oral and sublingual misoprostol were equally effective, but there were more adverse effects with sublingual administration.<sup>368</sup>

### *Medical abortion at 13–24 weeks of gestation*

## **RECOMMENDATION 7.23**

**A** The following regimen is recommended for medical abortion between 13 and 24 weeks of gestation:

- Mifepristone 200 mg orally, followed 36–48 hours later by misoprostol 800 micrograms vaginally, then misoprostol 400 micrograms orally or vaginally, 3-hourly, to a maximum of four further doses.

If abortion does not occur, mifepristone can be repeated 3 hours after the last dose of misoprostol and 12 hours later misoprostol may be recommenced.

### **Evidence supporting recommendations 7.23**

Second-trimester medical abortion with mifepristone followed by a prostaglandin analogue is effective and is associated with considerably shorter induction-to-abortion intervals than methods using a prostaglandin analogue alone.<sup>369,370</sup> As discussed above, the dose of mifepristone recommended for first-trimester medical abortion is 200 mg.<sup>331</sup> Likewise, evidence from a randomised trial resulted in a similar recommendation for the dose of mifepristone in second-trimester abortions.<sup>371</sup>

In a series of 500 cases of medical abortion at 13–24 weeks of gestation,<sup>108</sup> only 9.4% of cases needed subsequent surgical evacuation following medical abortion. In a similar series of 956 women, the rate was 11.5%.<sup>108</sup>

Three studies published since 1999 on combined mifepristone and prostaglandin analogue mid-trimester regimens have been identified.

Ngai et al. reported a randomised trial of 142 women at 14–20 weeks of gestation comparing vaginal (200 micrograms, 3-hourly) and oral (400 micrograms, 3-hourly) misoprostol after mifepristone 200 mg.<sup>372</sup> The efficacy of the two regimens was similar (complete abortion rate: 81% oral versus 75% vaginal). Although there were significantly more adverse effects in the oral group, this route was preferred by women.

A case series of 956 women at 12–24 weeks of gestation managed using a regimen comprising mifepristone 200 mg followed by gemeprost 1 mg vaginally 6-hourly for 24 hours, followed by gemeprost 1 mg 3-hourly for 12 hours if required, reported complete abortion rates of 96.4% and 98.8% within 24 and 36 hours, respectively.<sup>373</sup>

Bartley and Baird compared gemeprost and misoprostol in a randomised trial of 100 women at 12–20 weeks of gestation.<sup>374</sup> All subjects received mifepristone 200 mg; the gemeprost group then received 1 mg vaginally every 6 hours for 18 hours; the misoprostol group then received one dose of 800 micrograms vaginally followed by 400 micrograms orally 3-hourly for 12 hours. Complete abortion rates, induction-to-abortion intervals, surgical evacuation rates and adverse effect profiles were similar in the two groups.

An abortion rate of 97.9% was reported in 386 consecutive cases between 12 and 20 weeks of gestation.<sup>375</sup> If abortion had not occurred by 15 hours, a second dose of 200 mg mifepristone was administered and the course of prostaglandin analogues repeated starting 24 hours after the first dose. Over 99% of women aborted within 36 hours.

Brouns<sup>376</sup> conducted a small randomised study of abortion between 14 and 24 weeks of gestation using 200mg mifepristone and either 200 or 400 micrograms misoprostol. Both doses of misoprostol were effective, but the induction-to-delivery interval was longer with the 200 micrograms dose.

A systematic review<sup>377</sup> which included 40 RCTs addressing various regimens for abortion between 12 and 28 weeks of gestation concluded that the combination of mifepristone and misoprostol appeared to have the highest efficacy and shortest abortion time interval. The optimal route for administering misoprostol was vaginally, preferably using tablets at 3-hourly intervals. However, the authors stated that conclusions from this review were limited by the gestational age ranges and variable medical regimens, including dosing, administrative routes and intervals of medication, of the included trials.

### RECOMMENDATION 7.24

**B** Surgical evacuation of the uterus is not required routinely following medical abortion between 13 and 24 weeks of gestation. It should only be undertaken if there is clinical evidence that the abortion is incomplete.

#### *Pain relief for medical abortion*

### RECOMMENDATION 7.25

**B** Women should routinely be offered pain relief (for example NSAIDs) during medical abortion.

### RECOMMENDATION 7.26

**A** Oral paracetamol has not been shown to reduce pain more than placebo during medical abortion and is not recommended.

### RECOMMENDATION 7.27

**B** Some women may require additional narcotic analgesia, particularly after 13 weeks of gestation.

### Evidence supporting recommendations 7.25–7.27

In routine clinical practice, analgesia is offered to women both during and after medical abortion. There is little research evidence to guide the choice of analgesic regimen. In a large case series of early medical abortion, data on analgesic use were available for over 3000 women.<sup>130</sup> Of these, 37% required no analgesia, 58% received oral analgesia only (paracetamol 500 mg plus dihydrocodeine 10 mg) and 5% received parenteral opiate (morphine 10 mg).

A case series of 2747 women from the USA reported on analgesic use during home abortion:<sup>358</sup> 79% of the women used an oral narcotic analgesic on the day of the misoprostol administration. This

level of use was higher than the 27% reported by the same investigators in a series of 2121 women undergoing supervised medical abortion.<sup>378</sup>

A placebo-controlled, randomised trial evaluated the efficacy of ibuprofen or acetaminophen (paracetamol) with codeine in the context of early medical abortion with methotrexate and misoprostol.<sup>321</sup> The agents were taken at the time of misoprostol administration, prior to the onset of pain. Severe pain was reported by almost 25% of women. There were no significant differences in pain scores between treatment groups. The authors concluded that pain experienced in medical abortion causes significant distress and more research is needed to reduce it.

In a randomised study examining the effect of paracetamol and codeine or diclofenac given with the first dose of misoprostol to women undergoing medical abortion between 13 and 22 weeks of gestation,<sup>379</sup> the NSAID did not interfere with the action of the misoprostol and women using diclofenac had a reduced need for opiate injections.

In a systematic review of pain control in medical abortion, only 10 of 361 articles identified met the inclusion criteria.<sup>380</sup> The main positive finding was that ibuprofen given after the onset of pain reduced further analgesic use. Acetaminophen, acetaminophen plus codeine and alvarine (an antispasmodic) appeared to be ineffective. Despite its antiprostaglandin analogue effects, ibuprofen did not interfere with the action of misoprostol. The authors concluded that further research is needed to determine the optimal analgesic regimen for medical abortion.

## 7.3 Histopathology

### RECOMMENDATION 7.28

**C** Routine histopathological examination of tissue obtained at abortion procedures is not recommended.

#### Evidence supporting recommendation 7.28

Three prospective cohort studies have examined the usefulness of routine histopathological examination of tissue obtained at abortion.<sup>381–383</sup> Two of them concluded that there was no obvious benefit from routine histological examination. The third study involved review of histological findings from 1000 consecutive induced abortions at 7–13 weeks of gestation.<sup>381–383</sup> Pathological findings were reported in 5.6% of cases, including one diagnosis of fetal polycystic kidney disease. The authors reported that this information enabled the woman to undergo prenatal diagnosis in future pregnancies and argued a case for routine histological examination of abortion material. However, none of the pathologies reported influenced the immediate care of the woman.

The Royal College of Pathologists' guidance on histopathological examination of tissue obtained at abortion finds it to be of limited or no clinical value and advises that for 'social termination of pregnancy', specimens should not be sent to the laboratory if fetal parts are visible.<sup>384</sup> With early surgical abortion, fetal parts may not be visible. Therefore, histological examination would be indicated when a gestational sac is not seen in the aspirate (see recommendation 7.3).

### *Gestational trophoblastic neoplasia (GTN)*

#### **RECOMMENDATION 7.29**

**C** Routine screening of women for GTN at the time of abortion is not recommended; providers should be aware of the signs and symptoms and, where appropriate, facilitate referral into a GTN monitoring programme.

#### **Evidence supporting recommendation 7.29**

The incidence of GTN in women seeking abortion has been estimated to be 1 in 600 to 1 in 2699, with variations dependent on gestational age.<sup>385-387</sup> The authors of a retrospective review of 51 cases of GTN diagnosed at or following an abortion advocated routine screening, based on their finding that those without a diagnosis at the time of their procedure were significantly more likely to have serious complications of GTN and to require surgical intervention and chemotherapy.<sup>388</sup>

It is unclear how screening would be achieved in practice and no studies of screening protocols have been undertaken. Gross and/or histological examination of aspirated tissue as a method of identifying GTN may also be unreliable, as early molar pregnancies do not always conform to the classic appearance.<sup>389</sup> At present, there is insufficient evidence to recommend a screening strategy for GTN in the abortion care setting.

# Chapter 8

## Care after the abortion

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### 8.1 Rhesus prophylaxis

#### RECOMMENDATION 8.1

**B** Anti-D IgG should be given, by injection into the deltoid muscle, to all non-sensitised RhD-negative women within 72 hours following abortion, whether by surgical or medical methods.

#### Evidence supporting recommendation 8.1

The RCOG recommends that RhD-negative women should be given anti-D IgG immunoprophylaxis following abortion.<sup>390</sup> The recommended dose is 250 iu before 20 weeks of gestation and 500 iu thereafter. A 500 iu dose gives protection for fetomaternal haemorrhage of up to 4 ml. For abortions undertaken after 20 weeks of gestation, the size of fetomaternal haemorrhage should be assessed using either the traditional Kleihauer acid elution test or the more accurate flow cytometry. If the test indicates a fetomaternal haemorrhage of greater than 4 ml, an additional 125 iu/ml of anti-D IgG should be administered.<sup>390</sup> Anti-D IgG should be injected into the deltoid muscle, as injections into the gluteal region often reach only the subcutaneous tissues and absorption may be delayed.<sup>390</sup>

In a Cochrane review of the evidence for rhesus prophylaxis after first-trimester miscarriage, the authors concluded that there is minimal evidence that administering Rh immune globulin for first-trimester vaginal bleeding prevents maternal sensitisation or development of haemolytic disease of the newborn.<sup>391</sup> It is not difficult to argue that women undergoing medical abortion before 9 weeks of gestation probably do not need anti-D IgG. However, a structured review that appraised ten published studies relating to the necessity for anti-D prophylaxis for early first-trimester abortion<sup>392</sup> concluded that, although evidence to support the use of prophylaxis in the first trimester is sparse, there is theoretical evidence of its necessity. Since some studies indicate that fetomaternal haemorrhage in the first trimester is of sufficient volume potentially to cause immunosensitisation, the RCOG continues to recommend anti-D administration as routine. Other national guidelines make similar recommendations.<sup>393</sup> Further research is required.

It is fruitless to administer anti-D IgG to RhD-negative women who, on antibody screening, are found to be sensitised already. It is wasteful of anti-D IgG and unnecessarily exposes women to any risks inherent in human blood products. Inadvertent administration of prophylactic anti-D IgG to an already sensitised woman, however, would not of itself cause any harm to her.



## 8.2 Information after the abortion

### RECOMMENDATION 8.2

- ✓ On discharge, all women should be given a letter providing sufficient information about the procedure to allow another practitioner elsewhere to manage any complications.

### RECOMMENDATION 8.3

- ✓ Following abortion, women should be provided with verbal and written information about:
  - symptoms they may experience, emphasising those which would necessitate an urgent medical consultation
  - symptoms suggestive of continuing pregnancy.

### RECOMMENDATION 8.4

- ✓ Independent providers of abortion services should have arrangements in place for referring women into NHS services for emergency assessment/admission.

### RECOMMENDATION 8.5

- ✓ A 24-hour telephone helpline number should be available for women to use after abortion if they have any concerns.

## 8.3 Follow-up after abortion

### RECOMMENDATION 8.6

- B** There is no medical need for routine follow-up after surgical abortion or after medical abortion if successful abortion has been confirmed at the time of the procedure.

### Evidence supporting recommendation 8.6

Continuing pregnancy after surgical abortion is uncommon (2.3 in 1000 cases of surgical abortion)<sup>160</sup> and, in contrast to medical abortion, surgeons have the opportunity to check for products of conception. Risk factors for continuing pregnancy include the presence of a uterine anomaly, a less experienced surgeon and gestational age of less than 6 weeks.<sup>160,279,394</sup> Two systematic reviews concluded that routine follow-up after surgical abortion cannot therefore be justified solely to exclude a continuing pregnancy.<sup>395,396</sup> Since many women fail to attend for follow-up, much outpatient time is wasted by insisting that all women be given a routine appointment. Rather, every effort should be made to ensure that women leave the abortion facility with effective contraception and with information about where to go for further advice or treatment of symptoms, emotional problems or for contraception if it was declined at the time of the procedure.

**RECOMMENDATION 8.7**

- ✓ Women having a medical abortion in whom successful abortion has **not** been confirmed at the time of the procedure should be offered follow-up to exclude continuing pregnancy.

**Evidence supporting recommendation 8.7**

Continuing pregnancy after medical abortion, while still uncommon, occurs in 0.5–1% of cases after mifepristone–misoprostol regimens.<sup>161,162,336,350,397</sup> Continuing pregnancies after misoprostol intake are at risk of teratogenicity.<sup>398–400</sup> Continuing pregnancy is more common in parous women, older women who have had previous abortions and at later gestational ages.<sup>131,161,401–405</sup> Continuing symptoms or signs of pregnancy, or very little/no vaginal bleeding after the procedure, should alert the clinician to the possibility of a continuing pregnancy.

For women in whom products of conception are not identified by an experienced health professional at the time of medical abortion, and for women who choose to go home immediately after misoprostol administration, a reliable method for excluding continuing pregnancy is important. A systematic review of nine studies examined alternative modalities to ultrasound for detecting continuing pregnancy, including women’s self-assessment, clinician assessment, serum hCG measurement and urine pregnancy testing.<sup>395</sup> A woman’s self-assessment of continuing pregnancy following medical abortion appears fairly accurate compared with ultrasound examination or clinician assessment,<sup>115,406–408</sup> but may be less accurate at gestations over 50 days when continuing pregnancy is more likely.<sup>115</sup> Studies assessing the accuracy of serum hCG and urine pregnancy testing to detect failed medical abortion have been limited by the inherent high success rate of medical abortion and thus the small numbers of continuing pregnancies.<sup>409–413</sup>

The largest study of alternative follow-up strategies after medical abortion (3054 women at less than 63 days of gestation) evaluated different algorithms among women who underwent clinician assessment, self-assessment, low-sensitivity urine pregnancy test (performed by a laboratory technician) and ultrasound.<sup>414</sup> None was sufficiently sensitive on its own to identify all continuing pregnancies. However, a combination of either self-assessment or clinician assessment with a pregnancy test identified all 20 continuing pregnancies. Use of either of these algorithms would have resulted in an additional 64 (34%) of women who were not pregnant screening ‘positive’ and requiring ultrasound evaluation.

One small study of 139 women examined a strategy of telephone follow-up 1 week after misoprostol administration followed by a self-performed pregnancy test at 30 days. One-third of women ‘screened positive’ and were required to attend a clinic to confirm complete abortion.<sup>91</sup>

Further research is required to determine whether a combination of pregnancy testing at home and questions about pregnancy symptoms/signs could be used to screen for continuing pregnancy after medical abortion and to identify those women who require a clinic follow-up. Currently, in the absence of evidence to recommend a particular process for routine follow-up to exclude continuing pregnancy after medical abortion (when expulsion of the products of conception has not been confirmed by an experienced health professional), services should agree a protocol for local use taking into consideration the length of time an individual woman stays in the abortion service after misoprostol, her risk factors for failure and the distance she would have to travel to attend follow-up. It may be considered appropriate for the majority of women to be contacted by telephone to ask about post-procedure bleeding and symptoms together with a carefully performed urine pregnancy test or serum hCG determination.

### RECOMMENDATION 8.8

- ✓ All women having an abortion should be able to choose to return for routine follow-up if they so wish.

### RECOMMENDATION 8.9

- ✓ Referral should be available for any woman who may require additional emotional support or whose mental health is perceived to be at risk.

#### Evidence supporting recommendation 8.9

Most women who undergo induced abortion are certain of their decision<sup>211,214,415</sup> and are unlikely to experience serious regret. While there is good evidence that the great majority of adult women who have an abortion do not experience mental health problems,<sup>209,416</sup> a few will find it hard to come to terms with their decision and/or their experience of undergoing abortion and will require further emotional support or counselling. Women with a past history of mental health problems, those with a negative reaction to the abortion or those who are experiencing other stressful life events are more likely to develop mental health problems.<sup>137</sup> Services should be available for such women, including the possibility of self-referral.

### RECOMMENDATION 8.10

- ✓ All women should be advised where to seek help if they have any concerns or if they need further contraceptive advice or provision.

### RECOMMENDATION 8.11

- C Ultrasound examination should not be used routinely to screen women for incomplete abortion.

### RECOMMENDATION 8.12

- C The decision to evacuate the uterus following incomplete abortion should be based on clinical signs and symptoms and not on ultrasound appearances.

#### Evidence supporting recommendations 8.11 and 8.12

While ultrasound examination will reliably exclude continuing pregnancy, its routine use in women suspected of incomplete abortion can be misleading. Ultrasound appearances and measurements of endometrial thickness correlate poorly both with symptoms suggestive of retained products of conception and with later histological examination. Ultrasound appearances are not a clinically useful predictor for the subsequent need for surgical evacuation.<sup>417-421</sup> The decision to undertake uterine evacuation should be based upon the presence of signs and symptoms.

## 8.4 Contraception after the abortion

### RECOMMENDATION 8.13

**B** Abortion services should be able to provide all methods of contraception, including long-acting methods, immediately after abortion.

### RECOMMENDATION 8.14

**B** Women should be advised of the greater effectiveness of long-acting reversible methods of contraception.

### RECOMMENDATION 8.15

**B** Before she is discharged, future contraception should have been discussed with each woman and contraceptive supplies should have been offered.

### Evidence supporting recommendations 8.13–8.15

Ovulation occurs within 1 month of first-trimester abortion in over 90% of women.<sup>422</sup> Initiation of contraception immediately following induced abortion has advantages. The woman is known not to be pregnant, her motivation to use effective contraception may be high and she is already accessing health care. There is evidence among contraceptive users in general that immediate initiation of contraception, avoiding delays imposed by the need for return visits to a medical facility, has short-term positive effects on contraceptive use.<sup>423</sup> Delaying insertion of an intrauterine device (IUD) after abortion has been shown to be a barrier to uptake.<sup>424</sup>

There is evidence that efforts to increase the uptake of effective methods of contraception can be effective. In an RCT undertaken in Scotland, women receiving individualised, tailored contraceptive advice and immediate provision of their chosen method after abortion were significantly more likely to leave the abortion service with a method of contraception (particularly contraceptive implants) than women offered a more limited choice of methods.<sup>425</sup> In a US trial, availability of immediate IUD insertion in the abortion facility resulted in an increase in the percentage of women leaving the facility with an IUD.<sup>426</sup>

Long-acting reversible methods of contraception rely less (injectables) or not at all (intrauterine methods and implants) on compliance for their effectiveness compared with oral contraceptives or barrier methods. NICE recommends that increased uptake of long-acting reversible methods of contraception should reduce unintended pregnancy rates.<sup>427</sup> Increased IUD use facilitated by immediate insertion should theoretically prevent significant numbers of repeat abortions.<sup>428–430</sup> Evidence for the effectiveness of interventions designed to improve contraceptive use in terms of reducing repeat abortions is hard to come by.<sup>431</sup> However, in a US study women who chose immediate insertion of an IUD after abortion had a lower rate of subsequent repeat abortions than women who chose other methods.<sup>429,430,432</sup>

### RECOMMENDATION 8.16

**B** The chosen method of contraception should be initiated immediately.

### RECOMMENDATION 8.17

**B** Intrauterine contraceptives can be inserted immediately following medical and surgical abortion at all gestations as long as it is reasonably certain that the woman is not still pregnant.

### RECOMMENDATION 8.18

✓ Women who choose not to start a contraceptive method immediately should be given information about local contraceptive providers in addition to their GP.

### RECOMMENDATION 8.19

✓ Abortion services should have an agreed pathway of care to local community sexual health services.

### Evidence supporting recommendations 8.16–8.19

WHO's Medical Eligibility Criteria and Selected Practice Recommendations for Contraceptive Use (WHOMEK and WHOSPR, respectively) provide evidence-based recommendations on eligibility for methods and on maximising effective contraceptive use.<sup>433,434</sup> Both have been adapted for use in Great Britain.<sup>435,436</sup> The WHOMEK recommend that the benefits of combined hormonal contraceptives started immediately following first- or second-trimester abortion outweigh any risks. Similarly, the WHOSPR recommend that progestogen-only contraceptive pills, implants and injectables can all be started immediately following abortion. Ideally, these methods should be started on the day of the abortion, when contraceptive protection is immediate.

A systematic review of the literature concluded that the provision of combined oral contraceptives immediately following surgical or medical abortion was safe.<sup>437</sup> Use of the combined oral contraceptive pill does not affect either duration or amount of vaginal bleeding or the complete abortion rate. While there is no direct evidence, it seems likely that administration of combined hormonal contraceptives by other routes (transdermal, vaginal) will have similar effects.

There are few data specifically relating to IUD or levonorgestrel-releasing intrauterine system (LNG-IUS) insertion following medical abortion, and recommendations vary. The WHOMEK do not distinguish between medical and surgical abortion when recommending that IUD and LNG-IUS can be inserted without restriction following first-trimester abortion and that the benefits outweigh the risks of immediate insertion after second-trimester abortion. The GDG suggests that an IUD/IUS may be inserted immediately (within 48 hours) following first- or second-trimester medical abortion. Otherwise, insertion should be delayed until 4 weeks following medical abortion (as for postpartum insertions). The Faculty of Sexual & Reproductive Healthcare recognises that waiting for 4 weeks may put some women at risk of pregnancy and suggests that, after counselling, an IUD/IUS can be inserted at any time after medical abortion by an experienced clinician if it is reasonably certain that the pregnancy is not continuing.<sup>438</sup> Clearly, further evidence is required.

If insertion of intrauterine contraception is to be delayed, women leaving the abortion unit and choosing an IUD or IUS for later insertion should be provided with effective contraception to use in the interim.

A systematic review including nine randomised trials and a total of 4476 woman-years of data suggested that the insertion of a copper-bearing intrauterine contraceptive device at the time of

surgical abortion was safe and practical.<sup>439</sup> No difference was found in readmission rates for pelvic infection following abortion in 229 women having an IUD inserted at the time of first-trimester abortion compared with 594 women not having an IUD inserted.<sup>56,439</sup> No prophylactic antibiotics were used and IUD continuation rates at 1 year were 72.8%. Expulsion rates were higher for insertions following second-trimester abortion than following first-trimester abortion. However, in a modelling exercise in which expulsion rates as high as 30% for immediate insertion after second-trimester abortion were assumed, immediate insertion of an IUD resulted in a theoretical reduction in repeat abortions.<sup>428</sup> There is insufficient evidence available to compare the safety and efficacy of IUDs inserted immediately after abortion versus delayed insertion. However, the WHOME C recommend the benefits of IUD insertion immediately following first-trimester abortion (category 1: unrestricted use) or second-trimester abortion (category 2: benefits generally outweigh any risks).<sup>433</sup> The UK Medical Eligibility Criteria (UKMEC) recommend that an IUD can be inserted immediately following surgical abortion or after the second part of medical abortion up to 24 weeks of gestation.<sup>53,435</sup>

There are fewer data on the use of LNG-IUS after surgical abortion. The Cochrane review cites a small randomised trial that investigated bleeding patterns associated with an IUD or LNG-IUS inserted following either induced abortion or menstruation.<sup>440</sup> Women having an LNG-IUS inserted following surgical abortion described fewer bleeding problems compared with women having one inserted postmenstrually. This may be attributable to an enhanced effect of levonorgestrel on the endometrium following removal of most of the superficial endometrium during the surgical procedure. Other studies have demonstrated the safety and efficacy of the LNG-IUS inserted immediately after surgical abortion.<sup>441–443</sup> The UKMEC recommend that an IUS can be inserted immediately following surgical abortion or after the second part of medical abortion up to 24 weeks of gestation.<sup>435</sup>

### *Sterilisation*

## **RECOMMENDATION 8.20**

**B** Sterilisation can be safely performed at the time of induced abortion, although may be more likely to be associated with regret and failure.

### **Evidence supporting recommendation 8.20**

The lifetime failure rate for sterilisation is approximately 1 in 200.<sup>444</sup> The RCOG evidence-based guideline on male and female sterilisation highlighted that there is potentially a higher failure rate associated with sterilisation at the time of abortion.<sup>444</sup> The Medico-Legal Committee of the RCOG has commented: 'In view of the increased failure rate of sterilisation procedures on those currently pregnant, it is questionable whether such operations should be carried out at all'.<sup>445</sup>

Two cohort studies have shown that the immediate and short-term complications of sterilisation performed at the time of abortion are similar to the total morbidity associated with the two procedures when performed separately.<sup>446,447</sup> Earlier reports, based on statutory notifications, overestimated complications owing to most sterilisations being performed by laparotomy as opposed to the laparoscopic techniques now favoured. There are no data on hysteroscopic sterilisation or sterilisation by mini-laparotomy at the time of abortion.

Apart from the potential increased risk of failure, the possibility of feelings of regret has been voiced as a reason for performing sterilisation as an interval procedure. Regret associated with sterilisation

may be hard to predict.<sup>448</sup> In one randomised trial, women who had requested sterilisation at the time of abortion were randomised to a combination or an interval procedure.<sup>446</sup> Of the women allocated to the 'interval' group, 33% failed to attend for sterilisation, suggesting a change of mind once they had been able to distance themselves from the abortion itself. This study emphasises the need for careful counselling relating to sterilisation in association with abortion.

The WHOMECS recommend that sterilisation can be performed immediately after abortion unless the abortion is complicated by sepsis, fever, severe haemorrhage or genital tract trauma.<sup>433</sup>

# Chapter 9

## Standards for audit and service accreditation

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Women seeking induced abortion need non-directive information and support to enable them to make the most appropriate decisions. All women should be offered comprehensive sexual health care, including full contraceptive provision and an STI risk assessment. Referral for induced abortion is also an opportunity to identify vulnerable women, particularly those in abusive situations or with safeguarding/child protection needs, and enable them to disclose these matters and receive support from, or referral to, trained advocates.

The DH Mandated Service Specification for abortion care and/or any local commissioning contracts should be taken into account when reviewing standards as part of clinical audit and review of commissioning arrangements.<sup>65</sup>

Abortion services must conduct regular audit of the care they provide. The recommendations within this guideline can serve as criteria for audit. Some suggestions for audit of abortion services have already been provided within the RCOG *Standards in Gynaecology*.<sup>84</sup> Having reviewed and updated this guideline, the members of the GDG discussed the recommendations with a view to suggesting a list of auditable standards. While most of the recommendations could provide the basis for audit, the GDG lists below those which they felt were the most important. The specific recommendations being audited are shown in brackets within the list.

The RCOG publication *Understanding Audit*<sup>49</sup> provides useful advice on undertaking high-quality audit. In brief, services need to collect data to assess their performance against a specified standard, feed back the findings to service staff (and other stakeholders), agree and then implement changes required to improve the quality of care and repeat the data collection to determine whether care has been improved. For most of the auditable standards listed below, data can be simply collected by case note review or by self-completed questionnaires issued to women or staff.

All clinical staff should attend regular, minuted clinical governance meetings. Standard agenda items should include audit, critical incidents, complaints and service development.

### 9.1 Pathways of care

A number of recommendations in the guideline highlight the need for services to have clear pathways of care for the management/referral of women whose needs cannot be met by their own service, including pathways to:

- tertiary care for women with significant medical conditions **(16)**
- antenatal care for women deciding to continue their pregnancy **(17)**



- care (including contraception and sexual health care) for women with non-viable pregnancy **(18)**
- specialist services for vulnerable women (for example child protection needs, domestic/sexual abuse) **(19)**
- the appropriate method of inducing abortion if that method is not available in-house (for example D&E) or if the service is not provided for certain gestations **(23)**
- additional emotional support after the abortion for women who need it **(104)**.

Services should undertake audit to determine whether their staff are familiar with all these pathways of care and whether those pathways are being used appropriately and effectively.

### 9.2 Information provision

A number of recommendations highlight the need for women at various stages during their journey through the abortion service to receive information about a range of topics, including:

- routes of access to abortion (including self-referral) **(1)**
- pregnancy options **(11, 14)**
- abortion procedures **(11, 48, 77)**
- complications, risks, adverse effects and sequelae **(13, 31–43)**
- prevention of STIs **(62)**
- care after abortion (including contraceptive provision) **(98, 105, 109, 113)**.

Services should undertake regular audit to determine whether this information (including information in an appropriate format which women can take home) is being offered to all women undergoing abortion **and** that the information is understood.

### 9.3 Women's choice

A number of recommendations in the guideline highlight the need for women's choice in the abortion process. Regular audit should be undertaken to determine whether women are being offered (where appropriate) a choice of:

- abortion method **(23)**
- completion of medical abortion (before 9 weeks of gestation) at home or in the clinic **(28, 86)**
- routine follow-up **(103)**
- the full range of contraceptive methods **(110)**.

### 9.4 Pre-abortion assessment

Regular audit should be undertaken to determine the percentage of women undergoing:

- determination of rhesus status **(50)**
- rhesus prophylaxis **(96)**
- VTE risk assessment **(52)**
- *C. trachomatis* screening **(60)**
- STI risk assessment **(60)**
- the process and outcome of telephone assessment (if being used) **(21)**.

## 9.5 Abortion procedures

Services should regularly audit their success in meeting the standards relating to:

- minimising delay in providing/accessing abortion (**3, 24**)
- rates of complications (**13**)
- the prevention of infective complications (**58**)
- failure rates (**67**)
- cervical preparation (**73**)
- provision of alternatives to general anaesthesia for surgical abortion (**78**).

## 9.6 Care after the abortion

- The robustness of follow-up arrangements (including telephone assessment) for women choosing early discharge after medical abortion should be audited (**28, 86**).
- Services should regularly audit the number of staff competent to provide all methods of contraception, including contraceptive implants and intrauterine methods, and the availability of such staff during the working week (**108**).
- Services should regularly audit the percentage of women with whom contraception after abortion has been discussed, offered and provided (**110, 111**) and the percentage leaving the abortion service with one of the more effective methods of contraception (**109**).

# Chapter 10

## Further research

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In revising this guideline on abortion care, the GDG became aware of gaps in our knowledge of how best to deliver abortion services in Great Britain. While no means an exhaustive list, the GDG considers the following topics to be research priorities.

### **Organising and commissioning services**

- Extending the role of nurses in abortion services.
- Models of service delivery designed to improve integration of abortion and community services (family planning and genitourinary medicine clinics).
- The use of tele-health in the management of abortion.
- The effect on willingness to participate in abortion services of exposing undergraduates and postgraduates to abortion provision.

### **Adverse effects, complications and sequelae of abortion: what women need to know**

- What is meant by cervical injury and what its relevance is to the safety and long-term consequences of abortion.
- Differential effects of various techniques of inducing abortion on the risk of long-term sequelae.

### **Pre-abortion management**

- National data on the incidence of HIV infection in women requesting abortion.
- National data on the incidence of non-viable/ectopic pregnancy in women requesting abortion.
- The role of ultrasound in pre-abortion assessment in the UK.
- Optimal antibiotic prophylaxis regimens.

### **Abortion procedures**

- The cost-effectiveness of mifepristone for cervical ripening in second-trimester abortion.
- The most cost-effective regimens for analgesia for early and late medical abortion.
- The safest and most cost-effective regimens for pain relief (including anaesthesia) for surgical abortion, including MVA.

### **Care after the abortion**

- The consequences of fetomaternal haemorrhage.
- The safety and cost-effectiveness of immediate insertion after medical abortion of intrauterine contraceptives.
- The effect of interventions on continuation rates of contraception after abortion.
- The role of ultrasound in managing post-abortion complications.

# Appendix 1

## Declarations of interests and good standing

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All members of the GDG and peer reviewers were asked to sign a declaration of interests and good standing and respond to the following questions:

1. Do you or any member of your immediate family receive sponsorship or paid consultancy work within commercial organisations related to obstetrics and gynaecology?
2. Do you or any member of your immediate family have any commercial interest such as personal shares with any company related to obstetrics and gynaecology?
3. Does your department or unit receive financial support from commercial organisations related to obstetrics and gynaecology?
4. Are you a consultant to or member of any national body, charity or pressure group whose work is related to obstetrics and gynaecology?
5. Do you receive significant editorial fees for commissioned articles for publication (in any format) or are you paid for editorial work for any publication related to obstetrics and gynaecology?
6. Do you or your department hold a patent (existing or pending) related to obstetrics and gynaecology?

### GDG members

Answers to the questions are reproduced verbatim.

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- |                               |   |
|-------------------------------|---|
| <b>Professor Anna Glasier</b> | 1. YES<br><i>Both my husband and I do occasional work for pharmaceutical companies</i>        |
|                               | 2. NO   |
|                               | 3. YES<br><i>Research funds and support for meetings</i>                                      |
|                               | 4. YES<br><i>I am a member of the Board of Trustees of the Population Council in New York</i> |
|                               | 5. YES<br><i>Honoraria for writing chapters – but never &gt; £200</i>                         |
|                               | 6. NO   |

**Ms Toni Belfield**

1. NO
  2. NO
  3. NO
  4. YES  
*FPA, FSRH, Cochrane Fertility Regulation Group, Reproductive Health Matters*
  5. YES  
*Not significant fees! Work undertaken includes – author, book chapters, book editing, peer review*
  6. NO
- 

**Dr Sharon Cameron**

1. YES  
*I received financial support from HRA Pharma to attend 'European Society of Gynaecology' meeting in Rome Sept 2009 and to present results of study of which I was PI (emergency contraception)*
  2. NO
  3. YES  
*Research grant was from HRA Pharma to conduct study of which I was PI (2006–2009) on emergency contraception*
  4. NO  
*I published article on contraception in gynaecology for 'Best Practice & Research Clinical Obstetrics & Gynaecology – Elsevier' 2009 and received fee for this*
  5. NO
- 

**Ms Joanne Fletcher**

1. NO
  2. NO
  3. NO
  4. YES  
*Abortion Rights, FPA*
  5. NO
  6. NO
- 

**Dr Katharine A Guthrie**

1. NO
  2. YES  
*Hold shares in Medivend/Engage Now, who make kiosks for sexual health information and goods vend*
  3. YES  
*Pharma industry support for educational events. Dept part of multicentre trial on Implanon for Schering Plough*
  4. YES  
*Member of FPA, DWCA, Voice for Choice, Brooke*
  5. NO
  6. NO
-

**Dr Sarah Jarvis**

1. NO
2. NO
3. NO
4. YES  
*Women's Health spokesperson, RCGP*
5. NO
6. NO

---

**Dr Patricia Lohr**

1. NO
2. NO
3. NO
4. YES  
*Member of Doctors for a Woman's Choice of Abortion (UK),  
Physicians for Reproductive Choice and Health (US), National  
Abortion Federation (US), International Consortium on Medical  
Abortion (Intl), FIAPAC (Intl)*
5. NO
6. NO

---

**Ms Fiona Loveless**

1. NO
2. NO
3. NO
4. YES  
*Work for Marie Stopes International*
5. NO
6. NO

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**Dr Tahir Mahmood**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Dr Susan Mann**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Dr R Kristina A Naidoo**

1. YES  
*I receive a fee from 'Ethicon – Women's Health and Urology' to provide clinical education and practical training in outpatient hysteroscopy held at the NHS trust where I am employed*
2. NO
3. YES  
*'Ethicon – Women's Health and Urology' provide an educational grant to an endowment fund at St Mary's Hospital, Manchester to provide practical training courses in hysteroscopy*
4. NO
5. NO
6. NO

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**Mr Kamal N Ojha**

1. NO
2. NO
3. NO
4. YES  
*International Society of Fallopian Tube (ISFT) – non commercial organisation – Treasurer of the society*
5. NO
6. NO

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**Dr Kate Paterson**

1. NO
2. NO
3. NO
4. YES  
*Member of bpas clinical governance committee*
5. NO
6. NO

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**Dr Alison Richardson**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Ms Jackie Routledge**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Professor Allan Templeton**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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### Nominated peer reviewers

Answers to the questions are reproduced verbatim

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**Ms Myat Arrowsmith**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Dr Edna Astbury-Ward**

1. NO
2. NO
3. NO
4. YES  
*Member of Research & Ethics Committee of British Pregnancy Advisory Service*
5. NO
6. NO

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**Mrs Tracy Burton**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Dr Lucy E Caird**

1. NO
2. NO
3. NO
4. NO
5. NO

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**Ms Sima Chaudhury**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Ms Dianne Crowe**

1. NO
2. NO
3. NO
4. YES  
*Royal College of Nursing, Women's Health Forum*
5. NO
6. NO

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## The Care of Women Requesting Induced Abortion

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**Ms Sarah Doran**

1. NO
  2. NO
  3. NO
  4. NO
  5. NO
  6. NO
- 

**Ms Su Everett**

1. NO
  2. NO
  3. NO
  4. YES  
*Member of the clinical effectiveness Unit 'over 40's  
contraception' for the Faculty of Reproductive Sexual Healthcare*
  5. NO
  6. NO
- 

**Dr Kathy French**

1. NO
  2. NO
  3. NO
  4. NO
  5. NO
  6. NO
- 

**Professor Kristina Gemzell  
Danielson**

1. NO
  2. NO
  3. NO
  4. NO
  5. NO
  6. NO
- 

**Professor David A Grimes**

1. YES  
*Consultant to Bayer + Merck*
  2. NO
  3. NO
  4. YES  
*ACOG, ASRM, SFP and others*
  5. NO
  6. NO
- 

**Dr Sally Hope**

1. NO
  2. NO
  3. NO
  4. YES  
*Am one of the two GP National reps on the Women's Health  
Advisory Board for the MHRA*
  5. YES  
*I am one of the Deputy Editors of Maturitas [£600/year for  
reviewing 2 articles/week]*
  6. NO
-

**Dr Allyson Lipp**

1. NO
2. NO
3. NO
4. YES  
*I am a member of the all-Wales Termination of Pregnancy group which comprises nurses + midwives*
5. NO
6. NO

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**Ms Mandy Myers**

1. NO  
*Employed by British Pregnancy Advisory Service (bpas) as Director of Nursing*
2. NO
3. NO
4. YES  
*Member of Steering Committee for Women's Health Forum of Royal College of Nursing*
5. NO
6. YES  
*Semi quantitative lateral flow pregnancy test*

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**Dr Victoria M Pickles**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Ms Laura Rutherford**

1. NO
2. NO
3. NO
4. YES  
*Member of faculty of family planning and reproductive healthcare*
5. NO
6. NO
7. NO

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**Dr John A D Spencer**

1. YES  
*Senior Clinical Consultant, Marie Stopes International*
2. NO
3. NO
4. YES  
*Senior Clinical Consultant, Marie Stopes International*
5. NO
6. NO

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## The Care of Women Requesting Induced Abortion

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**Dr Jane Wells**

1. NO
2. NO
3. NO
4. NO
5. NO
6. NO

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**Dr Christine P West**

1. NO
2. NO  
*Possibly but I am not personally involved with any such arrangements*
3. NO
4. NO
5. NO

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**Ms Maureen Whittaker**

1. NO
  2. NO
  3. NO
  4. NO
  5. NO
  6. NO
-

# Appendix 2

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## Systematic reviews

In updating this guideline, the GDG was fortunate to have access to a large number of relevant systematic reviews. These render redundant some of the evidence tables included in the appendix of the previous version. For the benefit of readers who would like a quick reference guide to the sources of evidence used in the guideline, the major systematic reviews are listed according to the topic covered. Where systematic reviews were either not available or not sufficient for our purposes, the evidence tables are displayed. For some topics for which no systematic reviews have been published, the tables published in the 2004 guideline are reproduced since no new evidence was found.

### Use of ultrasound

- Kaneshiro B, Edelman A, Sneeringer RK, Ponce de Leon RG. Expanding medical abortion: can medical abortion be effectively provided without the routine use of ultrasound? *Contraception* 2011;83:194–201. (Ref. 239)
- Kulier R, Kapp N. Comprehensive analysis of the use of pre-procedure ultrasound for first- and second-trimester abortion. *Contraception* 2011;83:30–3. (Ref. 240)
- Whitworth M, Bricker L, Neilson JP, Dowswell T. Ultrasound for fetal assessment in early pregnancy. *Cochrane Database Syst Rev* 2010;(4):CD007058. (Ref. 236)

### Cervical preparation

- Kapp N, Lohr PA, Ngo TD, Hayes JL. Cervical preparation for first trimester surgical abortion. *Cochrane Database Syst Rev* 2010;(2):CD007207. (Ref. 291)
- Newmann SJ, Dalve-Endres A, Diedrich JT, Steinauer JE, Meckstroth K, Drey EA. Cervical preparation for second trimester dilation and evacuation. *Cochrane Database Syst Rev* 2010;(8):CD007310. (Ref. 301)
- Promsonthi P, Preechapornprasert D, Chanrachakul B. Nitric oxide donors for cervical ripening in first-trimester surgical abortion. *Cochrane Database Syst Rev* 2009;(4):CD007444. (Ref. 292)

### Abortion methods

- Kahn JG, Becker BJ, Maclsaal L, Amory JK, Neuhaus J, Olkin I, et al. The efficacy of medical abortion: a meta-analysis. *Contraception* 2000;61:29–40. (Ref. 161)
- Kulier R, Cheng L, Fekih A, Hofmeyr GJ, Campana A. Surgical methods for first trimester termination of pregnancy. *Cochrane Database Syst Rev* 2001;(4):CD002900. (Ref. 267)

- Kulier R, Gülmezoglu AM, Hofmeyr GJ, Cheng L, Campana A. Medical methods for first trimester abortion. *Cochrane Database Syst Rev* 2004;(1):CD002855. (Ref. 337)
- Lohr PA, Hayes JL, Gemzell-Danielsson K. Surgical versus medical methods for second trimester induced abortion. *Cochrane Database Syst Rev* 2008;(1):CD006714. (Ref. 122)
- Say L, Brahma D, Kulier R, Campana A, Gülmezoglu AM. Medical versus surgical methods for first trimester termination of pregnancy. *Cochrane Database Syst Rev* 2005;(1):CD003037. (Ref. 93)
- Tuncalp O, Gülmezoglu AM, Souza JP. Surgical procedures for evacuating incomplete miscarriage. *Cochrane Database Syst Rev* 2010;(9):CD001993. (Ref. 268)
- Wildschut H, Both MI, Medema S, Thomee E, Wildhagen MF, Kapp N. Medical methods for mid-trimester termination of pregnancy. *Cochrane Database Syst Rev* 2011;(1):CD005216. (Ref. 377)

### Pain control

- Fiala C, Swahn ML, Stephansson O, Gemzell-Danielsson K. The effect of non-steroidal anti-inflammatory drugs on medical abortion with mifepristone and misoprostol at 13–22 weeks gestation. *Hum Reprod* 2005;20:3072–7. (Ref. 379)
- Renner RM, Jensen JT, Nichols MD, Edelman A. Pain control in first trimester surgical abortion. *Cochrane Database Syst Rev* 2009;(2):CD006712. (Ref. 313)

### Abortion complications: immediate

#### *Uterine rupture*

- Berghella V, Airoidi J, O'Neill AM, Einhorn K, Hoffman M. Misoprostol for second trimester pregnancy termination in women with prior caesarean: a systematic review. *BJOG*. 2009;116:1151–7. (Ref. 146)
- Goyal V. Uterine rupture in second-trimester misoprostol-induced abortion after cesarean delivery: a systematic review. *Obstet Gynecol* 2009;113:1117–23. (Ref. 145)

#### *Infection*

- Achilles SL, Reeves MF; Society of Family Planning. Prevention of infection after induced abortion: release date October 2010: SFP Guideline 20102. *Contraception* 2011;83:295–309. (Ref. 241)
- Shannon C, Brothers LP, Philip NM, Winikoff B. Infection after medical abortion: a review of the literature. *Contraception* 2004;70:183–90. (Ref. 177)
- Low N, Mueller M, Van Vliet HAAM, Kapp N. Antibiotic prophylaxis for medical and surgical first-trimester induced abortion. *Cochrane Database Syst Rev*. In preparation. (Ref. 243)

### Abortion complications: long-term sequelae

- Thorp JM Jr, Hartmann KE, Shadigian E. Long-term physical and psychological health consequences of induced abortion: review of the evidence. *Obst Gynecol Surv* 2002;58:67–79. (Ref. 189)

#### *Future reproductive outcome*

- Gan C, Zou Y, Wu S, Li Y, Liu Q. The influence of medical abortion compared with surgical abortion on subsequent pregnancy outcome. *Int J Gynaecol Obstet* 2008;101:231–8. (Ref. 203)

- Shah PS, Zao J; Knowledge Synthesis Group of Determinants of preterm/LBW births. Induced termination of pregnancy and low birthweight and preterm birth: a systematic review and meta-analyses. *BJOG* 2009;116:1425–42. (Ref. 199)
- Sun Y, Che Y, Gao E, Olsen J, Zhou W. Induced abortion and risk of subsequent miscarriage. *Int J Epidemiol* 2003;32:449–54. (Ref. 198)
- Swingle HM, Colaizy TT, Zimmerman MB, Morriss FH Jr. Abortion and the risk of subsequent preterm birth: a systematic review with meta-analyses. *J Reprod Med* 2009;54:95–108. (Ref. 206)

### Mental health

- American Psychological Association. Task Force on Mental Health and Abortion. *Report of the Task Force on Mental Health and Abortion*. Washington, DC: APA; 2008 [<http://www.apa.org/pi/wpo/mental-health-abortion-report.pdf>]. (Ref. 208)
- Charles VE, Polis CB, Sridhara SK, Blum RW. Abortion and long-term mental health outcomes: a systematic review of the evidence. *Contraception* 2008;78:436–50. (Ref. 209)
- Major B, Appelbaum M, Beckman L, Dutton MA, Russo NF, West C. Abortion and mental health: Evaluating the evidence. *Am Psychol* 2009;64:863–90. (Ref. 416)
- National Collaborating Centre for Mental Health. *Induced abortion and mental health. A systematic review of the mental health impact of induced abortion*. London: Academy of Medical Royal Colleges; 2011. In press. (Ref. 137)

### Breast cancer

- Committee on Gynecologic Practice. ACOG Committee Opinion No. 434: induced abortion and breast cancer risk. *Obstet Gynecol*. 2009;113:1417–8. (Ref. 188)

### Follow-up

- Grossman D, Grindlay K. Alternatives to ultrasound for follow-up after medication abortion: a systematic review. *Contraception* 2011;83:504–10. (Ref. 396)

### Contraception after abortion

- Ferreira AL, Lemos A, Figueiroa JN, de Souza AI. Effectiveness of contraceptive counselling of women following an abortion: a systematic review and meta-analysis. *Eur J Contracept Reprod Health Care* 2009;14:1–9. (Ref. 431)
- Gaffield ME, Kapp N, Ravi A. Use of combined oral contraceptives post abortion. *Contraception* 2009;80:355–62. (Ref. 437)
- Grimes DA, Lopez LM, Schulz KF, Stanwood NL. Immediate postabortal insertion of intrauterine devices. *Cochrane Database Syst Rev* 2010;(6):CD001777. (Ref. 439)

## Evidence tables

**Evidence table 1. Studies relating to the relative safety of abortion at increasing gestations**

Authors	Size of study (n)	Study type	Outcome
<b>Grimes et al.</b> <i>JAMA</i> 1984;251:2108–11	67 175	Multicentre, prospective, observational cohort study (up to 13 weeks and later)	RR 1.4 (95% CI 1.2–1.7) associated with each 2-week increment in gestation
<b>RCGP/RCOG</b> <i>J R Coll Gen Pract</i> 1985;35:175–80	6105	Multicentre, prospective cohort study, observational with controls (up to 17 weeks)	Compared with abortion at < 9 weeks: <ul style="list-style-type: none"> <li>operations at 9–12 weeks had 5 x risk of haemorrhage</li> <li>operations at &gt; 12 weeks had 7 x risk of haemorrhage</li> </ul> Increasing gestation was a factor in increasing the overall morbidity rate but did not reach statistical significance
<b>Jacot et al.</b> <i>Am J Obstet Gynecol</i> 1993;168:633–7	3772	Retrospective cohort study; single centre (compared < 15 weeks with 15–20 weeks)	Fewer complications in later gestation group ( $P = 0.056$ ): <ul style="list-style-type: none"> <li>5.1% &lt; 15 weeks</li> <li>2.9% 15–20 weeks</li> </ul>
<b>Buehler et al.</b> <i>Am J Obstet Gynecol</i> 1985;153:14–9	82 030	Multicentre, prospective, observational cohort study (up to 24 weeks)	Increased risk of serious complications if > 12 weeks; below 13 weeks, non-significant increase with gestation; after 12 weeks, RR for each 2-week increment in gestation 1.42 (95% CI 1.30–1.55) Increased risk of febrile morbidity at > 12 weeks: RR 1.43 (95% CI 1.21–1.69); RR for transfusion 2.00 (95% CI 1.10–3.64) for each 2-week gestation increment at < 12 weeks; RR for transfusion 1.48 (95% CI 1.33–1.65) for each 2-week gestation increment at > 12 weeks
<b>Ferris et al.</b> <i>CMAJ</i> 1996;154:1677–85	83 469	Retrospective database cohort study, multicentre; abortions at all gestations	Complications at: <ul style="list-style-type: none"> <li>≤ 9 weeks: 1</li> <li>9–12 weeks: 1.3 (95% CI 1.02–1.63)</li> <li>17–20 weeks 3.3 (95% CI 2.23–5.00)</li> </ul>
<b>Glasier and Thong</b> <i>Health Bull (Edinb)</i> 1991;49:254–9	1988: 2204; 1989: 2210	Surgical abortions up to 20 weeks; before and after study	Change of referral system in November 1988 Analysed notes for first half of 1989; only referrals from family planning service were compared in the before and after study (88 before and 71 after) Outcome of change in referral system: <ul style="list-style-type: none"> <li>reduction in wait to be assessed from 11 to 5 days</li> <li>increase in proportion of abortions performed at early gestations (from 40% to 60% at ≤ 9 weeks and from 21% to under 10% at ≥ 12 weeks)</li> </ul>

Evidence table 2. Studies relating to induced abortion and subsequent breast cancer risk

Authors	Study design	Subjects (n)	Conclusions
<b>Thorp et al.</b> <i>Obst Gynecol Surv</i> 2002;58:67–79	Narrative review		Cannot exclude a significant association; OR 1.3 (95% CI 1.2–1.4)
<b>Tavani et al.</b> <i>Eur J Cancer</i> 1999;35:1361–7	Case–control	579 cases 668 controls	Abortion was not related to risk of breast cancer at age < 40 years; OR 0.87 (95% CI 0.63–1.22)
<b>Marcus et al.</b> <i>Am J Public Health</i> 1999;89:1244–7	Case–control	862 cases 790 controls	Abortion during adolescence does not influence breast cancer risk; RR 1.2 (95% CI 0.6–2.7)
<b>Fioretti et al.</b> <i>Br J Cancer</i> 1999;79:1923–8	Case–control	1041 cases 1002 controls	Abortion was not related to breast cancer risk in nulliparous women; OR 0.97 (95% CI 0.64–1.47)
<b>Newcomb and Mandelson</b> <i>Cancer Causes Control</i> 2000;11:777–81	Case–control 252 controls	138 cases	Abortion was not related to risk of breast cancer; RR 0.9 (95% CI 0.5–1.6)
<b>Lazovich et al.</b> <i>Epidemiology</i> 2000;11:76–80	Cohort	37 247	No excess risk of breast cancer among women who reported having an abortion; RR 1.1 (95% CI 0.8–1.6)
<b>Tang et al.</b> <i>Epidemiology</i> 2000;11:177–80	Case–control	463 cases 2201 controls	Abortion does not increase risk of breast cancer; RR 0.9 (95% CI 0.7–1.2)
<b>Robertson et al.</b> <i>Breast</i> 2001;10:291–8	Case–control	624 cases 624 controls	Abortion was not associated with a statistically significant elevated risk in any parity group
<b>Sanderson et al.</b> <i>Int J Cancer</i> 2001;92:899–905	Case–control	1459 cases 1556 controls	There was no relation between abortion and breast cancer; OR 0.9 (95% CI 0.7–1.2)
<b>Goldacre et al.</b> <i>J Epidemiol Community Health</i> 2001;55:336–7	Case–control	28 616 cases 325 456 controls	Abortion does not increase the risk of breast cancer; OR 0.83 (95% CI 0.74–0.93)
<b>Ye et al.</b> <i>Br J Cancer</i> 2002;87:977–81	Cohort and case–control	267 040 (cohort) 652 cases 694 controls	Abortions are not an important cause of breast cancer; RR 0.51 (95% CI 0.31–1.50)
<b>Mahue-Giangreco et al.</b> <i>Cancer Epidemiol Biomarkers Prev</i> 2003;12:209–14	Case–control	744 cases 744 controls	Does not support the hypothesis that abortion increases breast cancer risk; OR 0.71 (95% CI 0.49–1.02)
<b>Becher et al.</b> <i>Int J Epidemiol</i> 2003;32:48–50	Case–control	706 cases 1633 controls	A history of abortion showed no significant effect
<b>Erlandsson et al.</b> <i>Int J Cancer</i> 2003;103:676–9	Case–control	1759 cases 1759 controls	Abortion is not associated with an increased risk of breast cancer; OR 0.80 (95% CI 0.64–1.00)
<b>Paoletti et al.</b> <i>Int J Cancer</i> 2003;106:270–6	Cohort	92 767	There is no relationship between breast cancer and induced abortion; RR 0.91 (95% CI 0.82–0.99)
<b>Reeves et al.</b> <i>Int J Cancer</i> 2006; 119:1741–5	Cohort	267 361	Induced abortion is not associated with risk of breast cancer; OR 1.07 (95% CI 0.99–1.14)
<b>Michels et al.</b> <i>Arch Intern Med</i> 2007;167:814–20	Cohort	105 716	Induced abortion was not associated with an increased risk of breast cancer; OR 1.01 (95% CI 0.88–1.17)
<b>Rosenblatt et al.</b> <i>Cancer Causes Control</i> 2006;17:1275–80	Cohort	267 400	Induced abortion was not associated with increased risk of breast cancer; OR 1.01 (95% CI 0.92–1.12)
<b>Lash et al.</b> <i>Int J Cancer</i> 2004;110:443–8	Case–control	1665 cases 4972 controls	Induced abortion was not associated with increased risk of breast cancer; adjusted OR 0.91 (95% CI 0.79–1.0)
<b>Henderson et al.</b> <i>Contraception</i> 2008;77:391–6	Cohort	109 893	Induced abortion was not associated with increased risk of breast cancer in nulliparous or gravid women; OR 0.96 (95% CI 0.79– 1.18) and OR 1.05 (95% CI 0.92–1.20), respectively



**Evidence table 3. Studies relating to the rate of uterine perforation during termination of pregnancy**

Authors	Size of study (n)	Gestation	Perforation rate
<b>Andolsek et al.</b> <i>Stud Fam Plann</i> 1977;8:118–24	3004 in Ljubljana 1466 in Singapore	7–12 weeks	1.3 in 1000 in Ljubljana 1.4 in 1000 in Singapore
<b>Lindell et al.</b> <i>Acta Obstet Gynecol Scand</i> 1995;74:373–5	84 850	< 18 weeks	145 (1.7 in 1000)
<b>Hakim-Elahi et al.</b> <i>Obstet Gynecol</i> 1990;76:129–35	170 000	First trimester	16 (0.09 in 1000)
<b>Kaali et al.</b> <i>Am J Obstet Gynecol</i> 1989;161:406–8	(a) 6408 (b) 706 b = at time of laparoscopic sterilisation	First trimester	Before direct visualisation: (a) 8 (1.3 in 1000) (b) 2 (2.8 in 1000) Unsuspected perforations: 12 (15.6 in 1000) True incidence in the laparoscopic group was 14 (2 + 12) in 706 or 19.8 in 1000
<b>Heisterberg et al.</b> <i>Acta Obstet Gynecol Scand</i> 1987;66:201–4	5851	≤ 9 weeks 10–12 weeks All gestations	10 (0.4 in 1000) 12 (0.3 in 1000) 22 (0.4 in 1000)
<b>RCGP/RCOG</b> <i>J R Coll Gen Pract</i> 1985;35:175–80	6105	9–12 weeks	22 (3.6 in 1000) Women treated in private sector had one-third the risk of trauma compared with women treated in NHS
<b>Grimes et al.</b> <i>JAMA</i> 1984;251:2108–11	67 175	Up to 24 weeks (86% < 13 weeks)	0.9 in 1000
<b>King et al.</b> <i>Am J Obstet Gynecol</i> 1980;137:530–3	11 885	8238 in first trimester 3647 in second	9 perforations ? all first trimester; if so 1.1 in 1000 perforation rate
<b>Hodgson et al.</b> <i>Am J Obstet Gynecol</i> 1974;120:802–7	104 453	< 14 weeks	10 (1.1 in 1000)
<b>Nathanson et al.</b> <i>N Engl J Med</i> 1972;286:403–7	26 000	First trimester	36 (1.4 in 1000)
<b>Beric et al.</b> <i>Lancet</i> 1971;2:619–21	14 261 by curettage 22 905 by vacuum aspiration	Up to 12 weeks	18 (1.2 in 1000) 13 (0.4 in 1000)

**Evidence table 4. Summary of the incidence of cervical injury during first-trimester abortion by vacuum aspiration reported in illustrative large case series**

Study	Gestation	Abortions (n)	Cervical injury	Rate/1000
<b>Andolsek et al.</b> <i>Stud Fam Plann</i> 1977;8:118–24	7–12 weeks	6655	4	0.6
<b>Ferris et al.</b> <i>CMAJ</i> 1996;154:1677–85	87% < 13 weeks	83 460	63	0.7
<b>RCGP/RCOG</b> <i>J R Coll Gen Pract</i> 1985;35:175–80	88% < 13 weeks	6105	11	1.8
<b>Jacot et al.</b> <i>Am J Obstet Gynecol</i> 1993;168:633–7	5–14 weeks	3225	1	0.3
<b>Hakim-Elahi et al.</b> <i>Obstet Gynecol</i> 1990;76:129–35	Up to 14 weeks	170 000	18	0.1
<b>Heisterberg et al.</b> <i>Acta Obstet Gynecol Scand</i> 1987;66:201–4	First trimester	5851	5	0.8
<b>Schulz et al.</b> <i>Lancet</i> 1983;1:1182–84	≤ 12 weeks	15 438	159	10.3

**Evidence table 5. Summary of the incidence of cervical injury during second-trimester abortion by dilatation and evacuation in illustrative large case series**

Authors	Gestation	Abortions (n)	Cervical injury	Rate/1000
<b>Jacot et al.</b> <i>Am J Obstet Gynecol</i> 1993;168:633–7	15–26 weeks	547	0	
<b>Schulz et al.</b> <i>Lancet</i> 1983;1:1182–4	13–20 weeks	6213	72	11.6
<b>Peterson et al.</b> <i>Obstet Gynecol</i> 1983;62:185–90	14–16 weeks	9916	109	11.6

**Evidence table 6. Effect of routine uterotonics on blood loss during vacuum aspiration abortion in randomised controlled trials**

Authors	Population	Intervention	Findings
<b>Nygaard et al.</b> <i>Acta Obstet Gynecol Scand</i> 2011;90:174–8	309 women at no more than 12 weeks gestation undergoing VA abortion	Single-blind RCT of 5 units syntocinon IV or no oxytocic. All women received misoprostol for cervical preparation. Procedures performed under general anaesthetic with propofol, in some cases combined with alfentanil and nitrous oxide. Vaginal bleeding recorded by weighing pads immediately after the surgical procedure and counting pads during the 3 following days. Pain and nausea assessed using visual analogue scales.	Mean blood loss at the hospital was 5 g (range 0–70) in the syntocinon group and 5 g (range 0–64) in the no treatment group, which was not a statistically significant difference ( $P = 0.81$ ). Blood loss at home, pain and nausea scores were also not statistically significantly different between the groups.
<b>Ali and Smith</b> <i>Anaesthesia</i> 1996;51:483–5	64 women at $\geq 9$ weeks gestation undergoing VA abortion	Single-blind RCT of 10 units syntocinon or 1 ml saline IV following cervical dilation. All women received gemeprost pessary for cervical preparation. Procedures performed under general anaesthetic with propofol and fentanyl. Blood loss calculated colorimetrically. Uterine contractility graded by blinded surgeon.	Median gestation age 10 weeks (SD 1.3) in syntocinon group, 10 weeks (SD 1.0) in placebo group. Median blood loss in syntocinon group 17.6 ml (range 6.1–72.7 ml). Median blood loss in placebo group 24.5 ml (range 6.7–94.3 ml; $P = 0.02$ ). 6 patients in saline group had unsatisfactory uterine contraction compared with 0 in syntocinon group ( $P = 0.025$ ); however, no intervention was required.
<b>Beeby and Morgan Hughes</b> <i>Anaesthesia</i> 1984;39:764–7	88 women up to 14 weeks of gestation undergoing VA for spontaneous miscarriage.	Double-blind RCT of 10 units syntocinon, 0.25 mg ergometrine or 1 ml saline IV. Procedures performed under general anaesthetic with fentanyl and methohexitone. Blood loss measured calorimetrically. Uterine contractility considered satisfactory if no other uterotonic given. Postoperative vomiting recorded until discharge.	Of 88 women enrolled, 32 excluded because of protocol errors. Information on mean (SD) for gestational age not reported. Mean blood loss for syntocinon was 10 ml (range 0–50 ml), ergometrine 46.7 ml (range 5–185 ml) and normal saline 45 ml (range 0–180 ml), but were not statistically significantly different. 3 women in the ergot group and 2 in the saline group received oxytocics for poor uterine contractility; however, the differences in contractility were not statistically significantly different between groups. Less vomiting when no oxytocic used but not statistically significantly different.
<b>Cochrane et al.</b> <i>Br J Obstet Gynaecol</i> 1981;88:1120–3	276 women undergoing VA at $\leq 12$ weeks of gestation for abortion.	Double-blind RCT of 0.5 mg ergometrine, 5 units syntocinon or sterile water IV. Procedures performed under general anaesthetic with Althesin and diazepam. Total volume of aspirated fluid recorded (blood + amniotic fluid) measured as well as immediate complications and adverse effects.	No statistically significant difference in total amount of fluid aspirated between groups. No statistically significant difference in postoperative vaginal loss. No difference in pain between oxytocin and water; more moderate and severe pain with ergometrine than oxytocin ( $P < 0.001$ ). Ergometrine caused more vomiting than oxytocin in the immediate postoperative period and up to 4 hours after ( $P < 0.001$ ).

Evidence table 7. Studies relating to local compared with general anaesthesia

Author	Size of study (n)	Type of study	Outcome
<b>De Jonge et al.</b> <i>S Afr Med J</i> 1994;84:481–3	142	Prospective randomised trial	Randomised into 2 groups: <ul style="list-style-type: none"> <li>• those for evacuation under systemic analgesia</li> <li>• those under general anaesthesia (GA)</li> </ul> Both groups compared in terms of safety, efficacy, acceptability, blood consumption and time delay between admission and evacuation Significantly less blood use in ward group (37 units for 13 women) than in theatre group (65 units for 24 women) ( $P < 0.003$ ) Significantly less time taken between admission and evacuation in ward group (median 7 hours 15 minutes) than in theatre group (median 12 hours 38 minutes; $P < 0.003$ ) Evacuation under fentanyl and midazolam was safe, effective and acceptable for majority of women compared with evacuation users
<b>Mackay et al.</b> <i>Obstet Gynecol</i> 1985;66:661–5	4147 GA 5389 LA	Randomised trial	Women who had D&E under GA had a relatively high risk of complications of 2.6 (95% CI 1.4–4.9) compared with women who underwent D&E under local anaesthesia (LA)  LA for second-trimester abortion appears to be both safer and less expensive than GA
<b>Grimes et al.</b> <i>Am J Obstet Gynecol</i> 1979;135:1030–5	36#430	Case study	Significant differences between LA and GA for specific complications LA associated with higher rates of febrile and convulsive morbidity GA associated with higher rates of haemorrhage, cervical injury and uterine perforation

Evidence table 8. Randomised controlled trials evaluating outcomes in postoperative complications with and without the use of ultrasound

Author	Population	Intervention	Findings
<b>Acharya et al.</b> <i>Eur J Obstet Gynecol Reprod Biol</i> 2004;114:69–74	230 women at < 13 weeks of gestation undergoing VA for abortion under general anaesthetic	Single-blind RCT of VA performed with or without continuous abdominal ultrasound guidance by a single operator. Procedure completion determined ultrasonographically in the intervention group and by sharp curette check in the control group. Women > 11 weeks of gestation received gemeprost cervical preparation. All women received syntocinon 5 iu IV during the procedure.	Follow-up available for 215 women. Ultrasound imaging was determined to be satisfactory in all but one case. Overall complications higher in control group. No statistically significant difference in intraoperative complications. More women in the control group had a postoperative infection ( $n = 8$ vs $n = 2$ ; $P < 0.005$ ) or an ERPC ( $n = 5$ vs $n = 0$ ; $P < 0.023$ ). Those in the intervention group had lower mean procedure times, estimated blood loss, days of analgesic requirements, postoperative bleeding and convalescence.
<b>Debby et al.</b> <i>Ultrasound Obstet Gynecol</i> 2006;27:61–4	809 women at 7–14 weeks of gestation admitted for VA under general anaesthetic for abortion or management of early fetal demise	Non-blinded RCT of VA performed with or without transvaginal sonography at the end of the surgical procedure. Laminaria tents inserted in all primigravidae or at $\geq 12$ weeks of gestation. Immediately after evacuation, 5–10 iu syntocinon were administered IV. The procedure was completed by sharp curettage in all participants. In the first 59 subjects, re-curettage was immediately performed if the endometrium appeared irregular but afterward only if endometrial thickness was $\geq 8$ mm. The women were followed up by gynaecological and ultrasound examinations 5–8 days following the surgical procedure.	The incidence of RPOC was statistically significantly lower in the intervention group (0.7% vs 7.1%; $P < 0.05$ ), but there were no other differences in complications (vaginal bleeding, endometritis, or perforation). There was no difference in the mean duration of bleeding post-procedure or of endometrial thickness when measured at the follow-up visit.

**Evidence table 9. Randomised controlled trials evaluating prophylactic paracetamol on post-abortion pain**

Author	Population	Intervention	Findings
<b>Cade and Ashley</b> <i>Anaesth Intensive Care</i> 1993;21:93–6	834 women undergoing VA under general anaesthesia up to 12 weeks of gestation	Double-blind placebo-controlled randomised trial of 1000 mg oral sachet of paracetamol 30 minutes prior to VA. Anaesthesia was induced with propofol and maintained with nitrous/oxygen if needed. Some women also received fentanyl. All women received syntocinon 10 iu at the end of surgery. Outcomes were pain (as indicated by need for additional analgesia), nausea and vomiting.	Analgesia was required in 35% of women overall. Administration of paracetamol was not associated with a statistically significant difference in the incidence of pain ( $P = 0.52$ ), nausea ( $P = 0.57$ ) or vomiting ( $P = 0.65$ ). There was no difference between paracetamol and placebo groups in pain relative to the receipt of volatile anaesthetic or fentanyl in addition to propofol.
<b>Hein et al.</b> <i>Acta Anaesthesiol Scand</i> 1999;43:248–51	140 women undergoing VA under general anaesthesia at 7–12 weeks of gestation	Double-blind placebo-controlled randomised trial of 1 g rectal paracetamol or placebo administered at the end of VA. Anaesthesia was induced with propofol/fentanyl and maintained with nitrous/oxygen if needed. All women received routine syntocinon 5 iu at the end of surgery. Outcomes were the need for rescue analgesia and pain as assessed by visual analogue scale (VAS) (0 = no pain, 10 = unbearable pain) at 30 minutes and 60 minutes post-operatively and at discharge.	Overall 29% of subjects required rescue analgesia (37% [26/70] in paracetamol group vs 23% [16/70] in the placebo group; a non-significant difference). The mean VAS scores were lower in the placebo group at 30 minutes ( $2.1 \pm 1.9$ vs $1.4 \pm 1.71$ ; $P < 0.05$ ), but there was no difference at 60 minutes or at discharge.
<b>Hein et al.</b> <i>Ambul Surg</i> 2001;9:91–4	210 women from 8 to 13 weeks of gestation undergoing VA under general anaesthetic	Double-blind placebo-controlled randomised trial of 1 g oral paracetamol and 8 mg oral lornoxicam given 60 minutes prior to vacuum aspiration abortion under general anaesthetic. Anaesthesia induced with propofol and fentanyl and maintained with nitrous/oxygen if needed. All subjects received 5 iu syntocinon at the end of surgery. Outcomes were pain VAS scores (0 = no pain, 100 = unbearable pain) at 30 and 60 minutes postoperatively and at discharge, need for rescue medication and time to discharge.	Equal numbers of women receiving paracetamol and placebo required analgesia (23/70 in each group). Fewer women receiving lornoxicam (10/70) required analgesia than paracetamol (OR 0.36, 95% CI 0.17–0.78), but the difference compared with placebo was not statistically significant. There was no statistically significant difference in the VAS scores or time to discharge between groups.
<b>Lowenstein</b> <i>Contraception</i> 2006;74:345–8	217 women undergoing VA under general anaesthetic at 6–12 weeks of gestation	Double-blind RCT of 1000 mg paracetamol, 100 mg tramadol or 100 mg indomethacin suppository compared with no treatment inserted at the end of a VA. GA was performed with propofol and fentanyl. Women and recovery room staff were blinded to the treatment. The gynaecologists who inserted the suppositories were not involved in the pain assessment and pain treatment in the recovery room. Outcomes were the need for rescue analgesia (dipyron 1 g orally) and pain as assessed by visual analogue scale score. Pain VAS (0 = no pain, 10 = worst pain imaginable) was assessed at 15, 30, 60, 90 and 120 minutes postoperatively.	The need for rescue analgesia was required by 40% (22/55) of controls, 18% (10/55) of those in the tramadol group, 13% (7/54) of those in the paracetamol group and 9% (5/53) of those in the indomethacin group ( $P < 0.001$ ). Pain as ranked on the VAS in the control group was $4.98 \pm 3.2$ cm, $3.35 \pm 2.9$ cm, $1.49 \pm 2$ , $0.78 \pm 1.6$ cm and $0.24 \pm 0.69$ cm at each time point. Compared with the control group, the mean VAS score was lower in the paracetamol group at 15 minutes postoperatively but higher than the control group at every other time point. Compared with controls, women who had received an indomethacin suppository reported lower VAS pain scores at every time point (difference in mean scores 2.72 cm, 1.12 cm, 0.57 cm, 0.42 cm and 0.22 cm, respectively).

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