

Table 4

Results of studies of acceptability of medical abortion

First author and year	Type of medical abortion	No. and assignment of women	Timing of interviews	Attitudes before treatment ^a	Positive aspects after treatment ^a	Negative aspects after treatment ^a	Percentage willing to use method again	Ref. no.
Rosen (1979)	Vaginal prostaglandin	30 (R)	Before first appointment with doctor; after treatment, before discharge; 2 weeks after treatment	More favourable towards medical abortion than surgical abortion	Procedure less distressing and less traumatic than expected	Higher scores on pain and bleeding than surgical cases	NA	235
Rosen (1984)	Vaginal prostaglandin (in hospital)	18 (R)	Before first appointment with doctor; 2 weeks after abortion, before follow-up examination	Preferred by 11% of sample	Generally met positive expectations	Pain and bleeding led some to prefer surgical methods	16%	44
	Vaginal prostaglandin (at home)	17 (R)		Preferred by 68% of sample because of greater comfort and privacy compared with treatment in hospital, and possibility of support from partner/friend			69%	
				Medical abortion considered more natural than surgical abortion, which was preferred by 16% of sample				

Table 4

Continued

First author and year	Type of medical abortion	No. and assignment of women	Timing of interviews	Attitudes before treatment ^a	Positive aspects after treatment ^a	Negative aspects after treatment ^a	Percentage willing to use method again	Ref. no.
Hill (1990)	Mifepristone + vaginal prostaglandin	100 (C/L)	7, 14 and 28 days after treatment	Acceptance of method by 64% of women for whom an early abortion by vacuum aspiration under general anaesthesia had been planned	Complete abortion occurred in 95% of women	Analgesia required after prostaglandin treatment in over 50% of sample	88%	236
Tang (1991)	Mifepristone + vaginal prostaglandin	23 (C/S)	Before treatment; 8, 15 and 43 days after treatment	<i>Acceptors:</i>^b Less traumatic than surgical method More natural than surgical method Recommended by doctor Fear of surgery <i>Refusers:</i>^c Less effective than surgical method Many visits required Surgical method quicker Desire to have abortion quickly	<i>Day 8:</i> Sense of relief More natural than surgical method Safe method Convenient method <i>Day 8:</i> Suspected incomplete abortion Sadness Inconvenient visits <i>Day 43:</i> Prolonged bleeding	91% (96% would recommend to a friend)	237	

Urquhart (1991)	Mifepristone + vaginal prostaglandin	54 (C/L)	2 days before treatment; 7 days and 4 weeks after treatment	NA	Greater sense of awareness than with surgical method Sense of being more in control Relief at avoiding general anaesthesia Less invasive than surgical method	Less satisfaction among younger women, nulliparous women, those who required analgesia, and those who saw products of conception	75%	238
Legarth (1991)	Mifepristone	25 (R)	1 week after treatment	NA	Method rated as acceptable by women classified as uncomplicated cases	Mild side- effects reported in 58% of uncomplicated cases and in all women classified as complicated cases	100% among those who had had a previous abortion	239

Table 4

Continued

First author and year	Type of medical abortion	No. and assignment of women	Timing of interviews	Attitudes before treatment ^a	Positive aspects after treatment ^a	Negative aspects after treatment ^a	Percentage willing to use method again	Ref. no.
Bachelot (1992)	Mifepristone + intramuscular prostaglandin	251 (C/U)	On day of treatment, before selection of method; 2 weeks after treatment	<i>Acceptors:</i> Less traumatic than surgical abortion Safer Lower risk for future pregnancy Lower risk of failure More natural than surgical abortion Less invasive than surgical abortion Novel method Desire to verify that expulsion had occurred <i>Refusers:</i> Less traumatic than medical abortion Lower risk of failure Safer Lower risk for future pregnancy	A high proportion (63%) of women wanted to see what had been expelled Majority (88%) of women satisfied with method	Dissatisfaction (more common in women with complications or those who failed to abort) Need for rest after the abortion Method not as quick and easy as expected in some cases	-	240

Grimes (1992)	Mifepristone	8 (C/L)	4 weeks after treatment	Belief in efficacy of medical method Preference for medical method	Greater sense of privacy than with surgical method Less invasive than surgical method	Mild side-effects (pain and nausea) experienced by some women (also reported in placebo group)	241
Thong (1992)	Mifepristone + vaginal prostaglandin Mifepristone + oral prostaglandin	94 (NA) 86 (NA)	At time of discharge, after prostaglandin treatment (in either a sitting-room or a gynaeological ward)	NA	Majority expressed a preference for prostaglandin treatment in the sitting-room Less analgesia required in women given oral prostaglandin than in those given vaginal prostaglandin Nearly all women (99%) satisfied with method used	Women treated with vaginal prostaglandin reported more pain and required more analgesia than those given oral prostaglandin	242
Holmgren (1992)	Mifepristone + vaginal prostaglandin	45 (C/S)	2 weeks after treatment	NA	Sense of relief about avoiding surgery Desire to verify that expulsion had occurred	Heavy bleeding Pain	243

Table 4

Continued

First author and year	Type of medical abortion	No. and assignment of women	Timing of interviews	Attitudes before treatment ^a	Positive aspects after treatment ^a	Negative aspects after treatment ^a	Percentage willing to use method again	Ref. no.
Henshaw (1993)	Mifepristone + vaginal prostaglandin	73 (C/S) 99 (R)	Before treatment; 2 weeks after treatment	<i>Acceptors:</i> Fear of surgery Fear of general anaesthesia More natural than surgical abortion Less invasive than surgical method <i>Refusers:</i> Too slow Side-effects Additional visits required Preference for general anaesthesia	Highly acceptable	Pain	95% 74%	244

Tang (1993)	Mifepristone + vaginal prostaglandin	99 (C/S)	Before treatment; 8, 15 and 43 days after treatment	<i>Acceptors:</i> Fear of surgery Convenient for work Less traumatic than surgical abortion Fear of general anaesthesia <i>Refusers:</i> Surgical abortion quicker Too many visits Side-effects	<i>Day 8:</i> Sense of relief Convenient Avoidance of surgery <i>Day 8:</i> Pain <i>Day 43:</i> Time-consuming Prolonged bleeding	85%	245
-------------	--------------------------------------	----------	---	---	--	-----	-----

R: random assignment; C/S: personal choice between methods in study; C/U: study of one method only; C/U: personal choice between usual clinical services; NA: not available.

^a In order of frequency of occurrence.

^b A total of 63 reasons for choosing medical abortion were given.

^c A total of 50 reasons for refusing medical abortion were given.

8.3.1 ***Acceptability of medical abortion compared with vacuum aspiration***

Nine studies have compared the acceptability of early medical abortion with abortion by vacuum aspiration, including one from Denmark, one from France, two from Hong Kong, two from Scotland and three from Sweden.

Two studies by Rosen et al. used similar designs and methods to assess the acceptability of medical abortion methods in Sweden (44, 235, 246). These studies predated the availability of mifepristone, and medical abortion involved the use of vaginal meteneprost pessaries which were given at 3-hour intervals. The women were randomly allocated to either the medical or surgical procedure. Of those allocated to the medical method, 81% would have chosen it and, 2 weeks after the abortion, 79% considered that this method had proved acceptable. In contrast, only 39% of those allocated to vacuum aspiration would have chosen this method but, 2 weeks after the abortion, 69% considered that it had been acceptable (246).

In England, Hill et al. studied the attitudes of 100 women using mifepristone plus a vaginal gemeprost pessary, but did not assess attitudes to vacuum aspiration (236). Women for whom an early first-trimester abortion by vacuum aspiration under general anaesthesia had been planned were asked if they would be willing to have the abortion done medically; 64% accepted the medical method. After the abortion 88% of those who had accepted the medical method said that they would be willing to have the same method again.

In Hong Kong, Tang et al. allowed women to choose their method of abortion (237, 245). In the second (and larger) study, 69% selected medical abortion and 31% vacuum aspiration. Those who chose the medical method were motivated by fear of surgery and a feeling that medical abortion would be safer; these women tended to be young (median age = 29 years), single and nulliparous. Reasons for selecting vacuum aspiration were that it was considered quick and convenient and because of concern about possible risks associated with the use of medical agents; these women tended to be older (median age = 33 years), married and to have children. Of the women who underwent medical abortion, 85% would use this method again.

In Aberdeen, Scotland, Urquhart & Templeton studied women having early medical abortion who had chosen to take part in a clinical study and compared them with a group having vacuum aspiration under general anaesthesia in the routine service (238). The focus of the study was the assessment of anxiety and depression and these were both reduced markedly by either method of abortion. When asked which method they would choose if a future abortion was

needed, 75% of those who had a medical abortion and 94% of those who had a surgical abortion would select the same method. When medical abortion was preferred it was because of awareness of what was happening, of feeling more in control, it was more discreet and because general anaesthesia was avoided.

In a further study from Aberdeen, women were asked if they would be prepared to be allocated at random to either early medical abortion or vacuum aspiration under general anaesthesia; those who refused to be allocated at random were given the choice of method (244). Random allocation was accepted by 54% of women, and 20% and 26% chose medical abortion and vacuum aspiration, respectively. Women who chose medical abortion did so because of fear of surgery or of general anaesthesia and because it seemed more natural. Vacuum aspiration was chosen because the procedure was brief and there would be general anaesthesia, and because it entailed fewer visits to the hospital. In this study, 95% of those having medical abortion and 90% of those having surgical abortion would have been willing to have the same method again.

Holmgren interviewed three groups of women in Sweden about 2 weeks after they had had vacuum aspiration either early in the first trimester or late in the first trimester, or an early medical abortion (243). The abortion experience was viewed as positive by 88% (35/40), 72% (31/43) and 87% (39/45) of women in these groups, respectively, and 40% (18/45) of those having an early medical abortion were relieved not to have had a surgical procedure. Of the women who had a medical abortion, 80% would have the same method again.

In France, Bachelot et al. compared early medical abortion with vacuum aspiration in women receiving routine care in six clinics (240). The women had a choice of medical abortion or of vacuum aspiration under either local or general anaesthesia. Among women who expressed a preference, 66% preferred medical abortion, 18% vacuum aspiration with local anaesthesia, and 16% vacuum aspiration with general anaesthesia. Reasons for choosing medical abortion were that it was less invasive, that personal control would be retained, that seeing the pregnancy expelled would be reassuring, and that it was more natural than surgical abortion. Vacuum aspiration was preferred because it was quick and efficient and because there would be close medical involvement. The women who had vacuum aspiration under local anaesthesia tended to be better educated and to have higher incomes than the rest of the study group. General anaesthesia was selected more often by women who originated from Africa or South America. After the abortion, 12% of those who had a medical

abortion felt that it had not been as quick and easy as expected, whilst only 4% were dissatisfied after vacuum aspiration.

The above studies indicate that a significant proportion of women requiring abortion at up to 9 weeks of gestation are interested in medical methods and that over 50% of women will choose to have their abortion by this method. After a medical abortion, over 75% of women would have a future abortion by the same method, but satisfaction after vacuum aspiration tends to be higher, with over 90% of women being willing to repeat the method, and those that had been doubtful about vacuum aspiration beforehand tending to feel more positive about it afterwards. Young, single, nulliparous women tend to prefer medical methods whilst older, parous, married women tend to prefer vacuum aspiration. A possible factor influencing the preference of older, parous women is the shorter time period associated with vacuum aspiration and the fewer visits to the providing unit that are required. There is a fair degree of uniformity of opinion between these studies, but there is a need for comparable research in developing countries where health care resources are much more limited. There is also a need for research that compares the acceptability of medical methods and dilatation and evacuation in the second trimester.

8.3.2 *Acceptability of the environment in which medical abortion occurs*

The environment in which an abortion method is provided influences its acceptability. In the second study by Rosen et al. (44), the women allocated to the medical abortion group were asked if they would prefer to have the abortion in hospital or at home. A preference for treatment at home was expressed by 68% of women; these women felt that their privacy would be greater, that they would be more at ease and that they would be able to have the company of their partner or a friend. The study was too small to assess the safety and practicality of remaining at home during a prostaglandin-induced abortion, but those who remained at home received less analgesia by injection than those in hospital. It is unclear whether this was because they were less disturbed by their uterine contractions or because they felt diffident about telephoning for assistance.

In Edinburgh, Scotland, Thong et al. studied 180 women undergoing an early medical abortion at up to 63 days of amenorrhoea (242). The focus of the study was the assessment of the women's attitude towards the environment in which they received the prostaglandin component of early medical abortion. The women were allocated at random to a small gynaecological ward or a sitting-room when they returned to the hospital 2 days after taking mifepristone, for administration of the

prostaglandin. Afterwards 77% and 69% of those assigned to the sitting-room and the ward, respectively, considered that the sitting-room was preferable. One reason was that all the women in the sitting-room were sharing the same experience while the ward also contained women having other day-care gynaecological procedures. Some women in the sitting-room wanted to lie down and this was made possible. Almost half (46%) of the women would have preferred their partner or a friend to have stayed with them, and 24% would have preferred to have received the prostaglandin at home if this option had been available.

These studies suggest that a day unit that offers privacy, easy chairs, and beds for those who prefer to lie down, provides an acceptable environment for medical abortion. Many women obtain support from the presence of others going through the same experience. Many would prefer to be accompanied by someone they know well but this could lessen the privacy of other women having an abortion on that day. Having the abortion at home would increase privacy for all women and would also allow them a free choice of companion. Further studies are needed on the location of the provision of medical abortion, particularly with regard to the safety and resource requirements of having the abortion at home.

8.4 Acceptability to providers

Women can have a choice of abortion method only if a choice is made available by providers. The service arrangements and staff attitudes required for the provision of medical abortion are different from those necessary for surgical methods. Those accustomed to vacuum aspiration may see this method as easier, both from their own viewpoint and from their perception of what women want. However, as women become aware of the advantages of medical abortion, they begin to seek this from local providers who tend to respond with appropriate services. Also, health care professionals have a strong preference for early abortion and many prefer not to have to evacuate the uterus personally (247, 248). Early medical abortion allows medical staff to remain detached from the process of uterine evacuation. Furthermore, the assessment, counselling and direct supervision of women having medical abortion can be delegated to personnel who do not have surgical skills and who may welcome such responsibility. Women may be more inclined to provide such services than men (249). This has occurred in some centres in Great Britain where the provision of early medical abortion is by doctors whose principal role is to provide contraceptive services rather than by the gynaecologists who provide vacuum aspiration (250).

8.5 Conclusions

1. The available studies indicate that, when given the choice between a medical and a surgical procedure for early termination of pregnancy, many women opt for the medical method.
2. The majority of women, irrespective of whether they chose medical or surgical abortion, are satisfied with the method chosen.
3. Apprehension about surgery and general anaesthesia is an important determinant of the preference for a medical method.

8.6 Recommendations

1. Women should be given a choice between medical and surgical methods of abortion, when appropriate.
2. Research should be conducted to identify factors affecting the acceptability of different methods of abortion.
3. Appropriate research is needed to improve current protocols used in the medical induction of abortion and thus enhance their applicability and acceptability.
4. Research is needed to assess whether findings from research in developed countries on the acceptability of medical methods for termination of early pregnancy also apply to developing countries.
5. Research is also needed to compare the acceptability of medical methods and dilatation and evacuation for the termination of second-trimester pregnancies.
6. Further studies are required on the location of the provision of medical abortion in early pregnancy, particularly with regard to the safety and resource requirements of having the abortion at home.

9. Introducing medical abortion as a routine clinical service

9.1 Experience in France and Great Britain

Mifepristone in combination with prostaglandin is approved for routine clinical use in medical abortion up to 49 days of gestation in China and France and up to 63 days in Great Britain and Sweden. Approval was granted in France in September 1988. A training programme for health care personnel was organized and, within a year, medical abortion had been provided for 2115 women through 458 centres (251). French law already permitted abortion on request in the first trimester and it was possible to utilize the network of

government-authorized facilities that had been developed to provide abortion by vacuum aspiration. French women pay a standard fee at the time of the abortion but 80% of this is subsequently refunded by the national health insurance scheme (252). In 1991 it was estimated that 12.3% of all abortions were carried out using mifepristone plus prostaglandin.

The British government granted a licence permitting the use of mifepristone and gemeprost for abortions of up to 63 days of gestation in July 1991. Training seminars for doctors were provided by the manufacturer. Training and the organization of services took several months, with the result that only 109 procedures were performed up to the end of 1991 (17). However, 4000 abortions were performed in 1992 and in 1993 it was estimated that 6000 or just over 10% of all the abortions of up to 63 days of gestation were carried out by this method (T. Eaton, personal communication, 1994). In contrast to France, British law requires two doctors to certify that abortion is necessary to protect the woman's health (see page 7) and this delays the referral process. In England and Wales, only about 50% of abortions are provided free of charge by the National Health Service, the limiting factors being the attitudes of medical staff and competing priorities for gynaecological resources. As a result, many women are obliged to obtain an abortion from private clinics where they pay the full cost. The majority of abortions provided by the National Health Service are carried out by vacuum aspiration in routine gynaecological facilities. Medical abortion requires different arrangements and many services have been slow to adapt. The private clinics have found that medical abortion costs more than abortion by vacuum aspiration because of the price of the medication and the additional visits that are required. However, medical abortion is in demand in the National Health Service in those centres that have efficient arrangements for referral, sympathetic staff and special day-care facilities for the administration of the prostaglandin (250).

The above comparison shows how access to early medical abortion is influenced by abortion law, and by the organization and financing of its provision. Early medical abortion is more widely used in France than Great Britain because the abortion law is more "liberal", the services are well organized and accessible, and the cost is largely funded by the state.

9.2 Experience in developing countries

China is the only developing country in which extensive experience has been gained of early medical abortion. Mifepristone is produced in government factories and is used in combination with the

prostaglandin analogues vaginal carboprost and oral misoprostol. The service is supervised by the State Family Planning Commission. Early medical abortion is currently restricted to hospitals, and medical staff have to have a certificate which is gained only after specialized training. Careful records are kept and both the supply of the pharmaceuticals and the quality of care before, during and after the abortion are monitored at the national level. When experience has been gained and sufficiently trained staff are available, it is planned to provide early medical abortion through local clinics that already offer abortion by vacuum aspiration with back-up from local hospitals (B. Xiao, personal communication, 1994).

9.3 **Planning the provision of early medical abortion**

The introduction of any treatment that involves new medical skills and which needs to be easily accessible to the majority of the population requires careful planning. Some experience has been gained with the introduction of vacuum aspiration services, not only for abortion but also to deal with retained products of conception after miscarriage (253, 254). In this regard, a WHO task force has designed a three-stage process to guide the introduction of new methods of fertility control (see Fig. 7; 255).

9.3.1 **Assessing the feasibility of introducing services**

Is early access to abortion possible?

Women should be able to obtain abortion before 49 days or, at the most, 63 days of amenorrhoea. Such early access depends on the abortion law but it is also important that access is not restricted by regulations concerning the provision of abortion so that many women are beyond the gestation limit by the time their request has been approved.

Do community attitudes support the provision of medical abortion?

Early medical abortion must be acceptable to the community as a whole. Women should be made aware of the side-effects (bleeding and pain) and the need for at least three visits to the providing centre.

Can an antiprogesterone and a prostaglandin analogue be made available?

The pharmaceuticals needed for early medical abortion must be licensed for routine clinical use. If this is not the case, it may be possible to organize a clinical trial in which the antiprogesterone–prostaglandin combination is used under local circumstances in order to demonstrate its suitability so that approval can be obtained for general use. A secure distribution system is necessary so that the pharmaceuticals

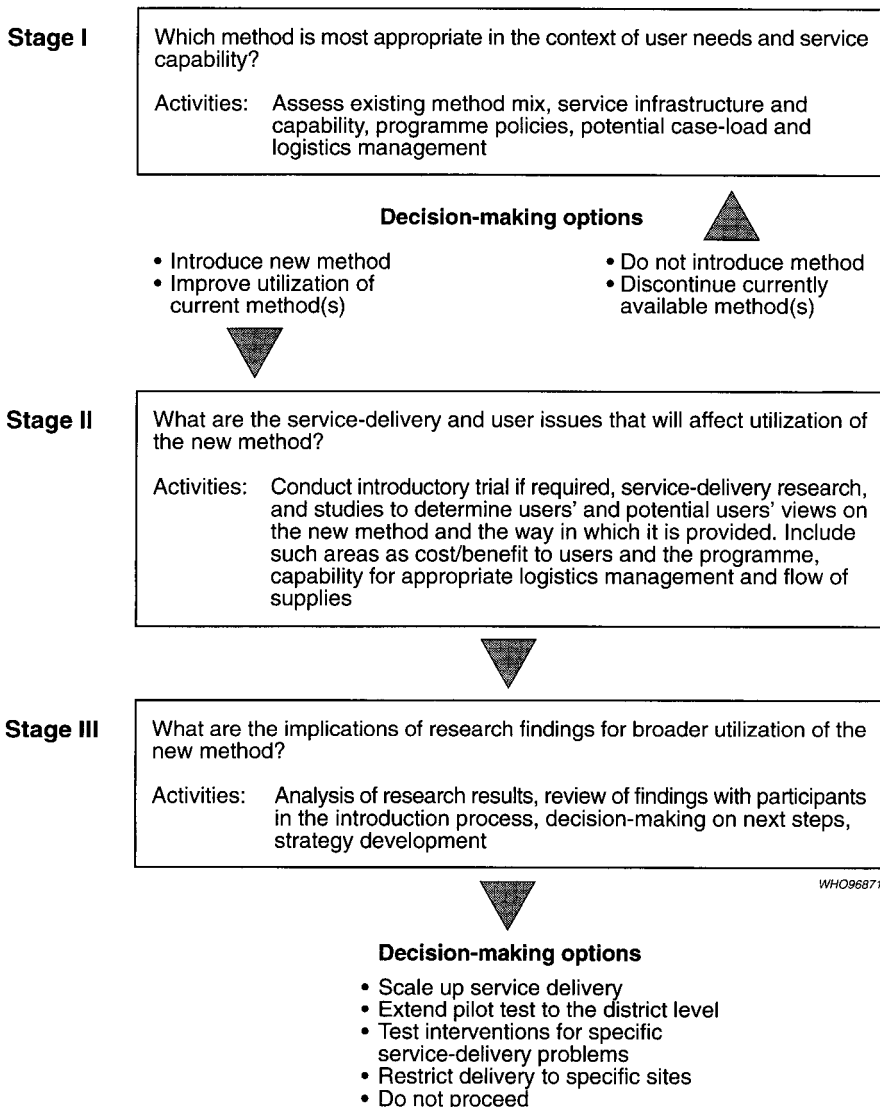
are available only to the trained health care professionals who provide the service.

Can sufficient resources be provided?

The health care services must have adequate resources to provide early medical abortion safely and on a scale that benefits the

Figure 7

A three-stage framework for decision-making on the introduction of fertility regulation^a



^a Source: reference 255. Used by permission.

population as a whole. There must also be a sufficient number of health care professionals who are prepared to run such a service. Consideration must be given to the probability that the cost of the new service would be offset by savings resulting from the need to treat fewer women with complications of unsafe abortion.

Could existing health care facilities incorporate early medical abortion?

Provision is less costly if early medical abortion is provided through local clinics that already provide maternal and child health care and family planning. The management of complications requires access to and close cooperation with the local gynaecological services. This includes the provision of blood transfusion.

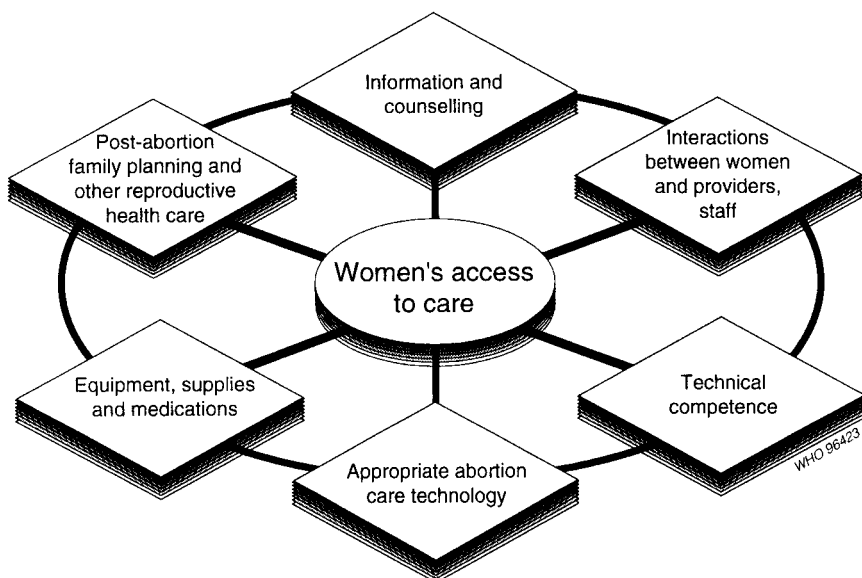
9.3.2 **Factors to be considered**

If the introduction of early medical abortion is considered to be feasible, the service must be planned so that women receive safe, competent and sympathetic care (see Fig. 8).

Personnel

Early medical abortion has been successfully provided by registered medical practitioners (who need not be gynaecologists), trained

Figure 8
Quality of care framework for abortion care^a



^a Source: reference 256. Used by permission.

nurses and supervised paramedical staff. The qualifications of the staff to be employed will depend on the laws regulating the provision of abortion and general health care services. Personnel with experience of providing contraceptives can be trained to provide medical abortion during courses lasting only a few days. There are advantages in recruiting staff for an early medical abortion service from family planning services and employing them part-time in both services.

Training should focus on the principles of early medical abortion but should also cover the detection of health problems, such as anaemia and genital tract infection, the early diagnosis of pregnancy (including the signs and symptoms of ectopic pregnancy), the determination of gestation, the assessment of the completeness of the abortion, and the management of incomplete abortion and excessive bleeding. Counsellors must be able to help women understand what is involved in the medical abortion process. Those with counselling skills can acquire the information they need in a short course and then benefit from observing experienced counsellors at work for a week or so before providing such a service themselves.

Women requesting an abortion must be treated with respect. These aspects of a service do not happen automatically but are the result of standards set by managers and maintained by the example of all staff, particularly those who are more senior. The needs and well-being of the women should be the focus of the service. The organization of the service and the attitudes of staff should make clear that confidentiality is a priority. Women should be assured that they have the right and the ability to control their lives and that they will be given the information they need and help with the decision they make.

Provision must be made for the management of incomplete abortion by staff trained in vacuum aspiration (or curettage) who can provide this service on site or in a nearby gynaecological facility. The latter is also necessary for the safe management of women who need blood transfusion or are suspected of having an ectopic pregnancy.

Standards of care must be maintained by the regular monitoring of conformity by staff to the standard protocols and monitoring of the frequency of complications.

Facilities

The centres that provide early medical abortion must be within reasonable travelling time of the women's homes, since they will need to make at least three visits. A private area, an examination couch and a lavatory are basic requirements for the assessment visit. The administration of the prostaglandin also requires a private area where women

can sit or lie down as they wish, and have access to a separate lavatory equipped with an appropriate container for collecting the products of conception. It should be possible to estimate the woman's haemoglobin concentration and determine her blood group either on site or at a local laboratory. Reliable and separate arrangements must be made for the disposal of the products of conception. Drugs must be stored securely and refrigeration may be necessary, depending on the prostaglandin analogue in use. A telephone is necessary to provide a link with the local hospital that is providing back-up services. It should be possible to provide the women having prostaglandin treatment with drinks and light refreshments.

Accessibility of services

As already mentioned, the services that provide early medical abortion must be located within a reasonable distance of women's homes. However, this requirement may conflict with the need for confidentiality. Confidentiality is increased if abortion services are integrated with other services concerned with maternal and child health and family planning, but it should be possible for women to obtain an abortion at a more distant centre if they are concerned about confidentiality.

Another important aspect of accessibility is that the services should be able to meet the local case-load. The provision should not be rationed by having a waiting-list for assessment or for the abortion itself.

Supplies and equipment

The success of an early medical abortion service depends on a well organized system of distribution that ensures that every providing centre always has an adequate stock of the abortion-inducing agents and other pharmaceuticals that are necessary for the safety and well-being of the women. The drugs available should include not only the antiprogestogen and the prostaglandin analogue but also ergometrine, oxytocin, analgesics, an antiemetic, an injectable local anaesthetic agent, antibiotics, and drugs for rare cardiovascular emergencies such as epinephrine and an injectable antihistamine. A supply of Rhesus (D) human immune globulin is required for women who are Rhesus-negative. Intravenous infusion equipment should be available for emergency use, together with supplies of sterile physiological saline and a gelatin-based blood substitute. Blood transfusion should be possible at the local back-up unit.

The supply of essential equipment should also be adequate and reliable. This includes sterile specula for inspecting the cervix and sterile syringes and needles. Equipment for evacuating retained products of conception is necessary. An electric suction pump is not essential as

the vacuum created with a syringe is adequate in the gestation range at which early medical abortion is possible. Sharp curettage is an inferior alternative to vacuum aspiration. All the instruments must be sterile.

Information and counselling

Information and counselling are fundamental aspects of health care. Women should be provided with complete and accurate information about the methods of abortion that are available so that they can make a fully informed choice. After selecting a method, they should be given all the necessary details, including the number of visits that will be necessary, the degree of discomfort, pain and bleeding they are likely to experience during and after the abortion process, and how to recognize the signs that mean they need to seek professional help. They should also be given clear instructions as to how such help can be obtained.

The provision of information must be based on agreed protocols. The development of such protocols is time-consuming but must be accomplished before staff are trained and a medical abortion service is inaugurated. Provision must be made for the training of all new staff and for periodic refresher courses.

Staff training can be assisted by the production of leaflets and videotapes. Organized training and agreed protocols are particularly important for the counsellors who help the women with their initial decision to have an abortion, but all staff in contact with the women at any point in the abortion process must be able to provide consistent and accurate information when requested. With early medical abortion, women must be informed about the upper gestation limit, the need to return for the administration of the prostaglandin, and the importance of a follow-up visit to check that the treatment has been successful.

Post-abortion family planning

An abortion service should have close links with family planning services. All women requesting an abortion should be asked about their experience of contraception and offered help in establishing a method they would find acceptable once the pregnancy is over. Before an abortion most women are too preoccupied with their distress about the unwanted pregnancy and their fear of the abortion procedure to be able to benefit from counselling about contraception. However, counselling should be available when they return for their follow-up visit, together with appropriate supplies of contraceptive agents and devices.

9.4 Conclusions

1. Experience in France and Great Britain shows that early medical abortion can be provided in developed countries through adaptation of existing abortion services.
2. Experience in China suggests that early medical abortion with the mifepristone–prostaglandin combination is potentially usable in other developing countries where abortion is not prohibited by law.
3. The introduction of medical abortion should be planned to fit in with existing abortion services and should have close links with the routine gynaecological services. The resulting service should be monitored closely. The information gained will allow modification of the newly introduced service and guide other countries in planning their provision of early medical abortion.

9.5 Recommendations

1. Services should provide women with complete and accurate information on the features of medical and surgical abortions so that they can make a fully informed choice.
2. Research is needed to determine the most effective way to provide early medical abortion.
3. With regard to the introduction of early medical abortion with antiprogesterone plus prostaglandin, information is required on:
 - the effects on the existing abortion services;
 - the changes necessary in training providers;
 - the best approach to ensuring optimal care for clients;
 - cost issues;
 - the organization of back-up services.
4. The problems of introducing early medical abortion services vary with national abortion laws, existing local health care services and cultural attitudes to induced abortion. Consequently, while research from China, France and Great Britain can provide general guidance, other countries will need to organize pilot studies on the introduction of this new technique, before deciding how it will be provided at the national level.
5. Access to early medical abortion with the antiprogesterone–prostaglandin combination will be enhanced if the health care system functions effectively and makes it possible for women to obtain abortion early in pregnancy.

Acknowledgements

The Scientific Group acknowledges the valuable contributions made to its discussions by the following people: Dr S. Allen, Clinical Research Coordinator, Contraceptive Research and Development Program (CONRAD), Arlington, VA, USA; Dr R. Bennett, Medical Officer, Fertility and Maternal Health Drugs, Food and Drug Administration, Rockville, MD, USA; Ms M. Berer, Editor, *Reproductive Health Matters*, London, England; Dr G. Bialy, Special Assistant to the Director, Center for Population Research, National Institute of Child Health and Human Development, Bethesda, MD, USA; Dr P. Bischof, Reader, Hormone Laboratory, Maternity Department, University Hospital, Geneva, Switzerland; Ms A. Bishop, Program Officer, Program for Appropriate Technology in Health (PATH), Seattle, WA, USA; Dr Cheng Linan, Associate Professor, Department of Obstetrics and Gynaecology, Zhong Shan Hospital, Shanghai Medical University, Shanghai, China; Dr E. Coutinho, President, South-to-South Cooperation in Reproductive Health, Salvador, Bahia, Brazil; Dr M. Horga, Obstetrician-Gynaecologist, Institute of Public Health and Medical Research, Tîrgu Mureş, Romania; Dr T. King, President, Family Health International (FHI), Durham, NC, USA; Dr E. McNeill, Research Division, Office of Population, United States Agency for International Development (USAID), Washington, DC, USA; Dr O.K. Ogedengbe, Senior Lecturer, Department of Obstetrics and Gynaecology, College of Medicine, University of Lagos, Lagos, Nigeria; Dr C.P. Puri, Assistant Director, Institute for Research in Reproduction, Indian Council of Medical Research, Parel, Mumbai, India; Dr B.A. Resch, Assistant Professor, Department of Obstetrics and Gynaecology, Albert Szent-Györgyi Medical University, Szeged, Hungary; Dr N.C. Sikazwe, Director, University Teaching Hospital, Department of Obstetrics and Gynaecology, School of Medicine, University of Zambia, Lusaka, Zambia; Dr P. Stratton, Special Assistant in Gynecology and Clinical Research, Contraceptive Development Branch, National Institute of Child Health and Human Development, Bethesda, MD, USA; Dr M.L. Swahn, Assistant Professor, Department of Obstetrics and Gynaecology, Karolinska Hospital, Stockholm, Sweden; Dr L. Tseng, Professor, Department of Obstetrics and Gynecology, Health Sciences Center at Stony Brook, State University of New York Medical School, Stony Brook, NY, USA; Dr N. Widujantoro, Psychologist, Fenomena, Jakarta, Indonesia.

The Scientific Group wishes to acknowledge the contribution of Dr H. von Hertzen, Medical Officer, UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction, WHO, Geneva, Switzerland, who assisted in preparing the meeting. Acknowledgements are also due to the following WHO staff members: Dr A. Brandrup-Lukanow, Acting Regional Adviser for Sexuality and Family Planning, WHO Regional Office for Europe, Copenhagen, Denmark; and Dr J. Kierski, Medical Officer, Maternal and Child Health and Family Planning, Division of Family Health, WHO, Geneva, Switzerland.

References

1. *Handbook of resolutions and decisions of the World Health Assembly and the Executive Board, Volume I, 1948–1972*. Geneva, World Health Organization, 1973:41.
2. *Spontaneous and induced abortion. Report of a WHO Scientific Group*. Geneva, World Health Organization, 1970 (WHO Technical Report Series, No. 461).

3. *Induced abortion. Report of a WHO Scientific Group.* Geneva, World Health Organization, 1978 (WHO Technical Report Series, No. 623).
4. **Fathalla MF.** Reproductive health in the world: two decades of progress and the challenge ahead. In: Khanna J, Van Look PFA, Griffin PD, eds. *Reproductive health: a key to a brighter future.* Geneva, World Health Organization, 1992:3–31.
5. **Tietze C, Henshaw SK.** *Induced abortion. A world review 1986,* 6th ed. New York, Alan Guttmacher Institute, 1986.
6. *Abortion. A tabulation of available data on the frequency and mortality of unsafe abortion,* 2nd ed. Geneva, World Health Organization, 1993 (unpublished document WHO/FHE/MSM/93.13; available on request from Division of Reproductive Health (Technical Support), World Health Organization, 1211 Geneva 27, Switzerland).
7. **Paxman JM et al.** The clandestine epidemic: the practice of unsafe abortion in Latin America. *Studies in family planning*, 1993, **24**:205–226.
8. **Barreto T et al.** Investigating induced abortion in developing countries: methods and problems. *Studies in family planning*, 1992, **23**:159–170.
9. **Hord C et al.** Reproductive health in Romania: reversing the Ceausescu legacy. *Studies in family planning*, 1991, **22**:231–240.
10. *Levels and trends of contraceptive use as assessed in 1988.* New York, United Nations, 1989 (Population Studies, No. 110).
11. **Segal SJ, LaGuardia KD.** Termination of pregnancy — a global view. *Baillière's clinical obstetrics and gynaecology*, 1990, **4**:235–247.
12. **Henshaw SK.** Induced abortion: a world review, 1990. *Family planning perspectives*, 1990, **22**:76–89.
13. **Dunstan GR, ed.** *The human embryo: Aristotle and the Arabic and European traditions.* Exeter, University of Exeter Press, 1990.
14. **Potts M, Diggory P, Peel J.** *Abortion.* Cambridge, Cambridge University Press, 1977.
15. **Munday D, Francome C, Savage W.** Twenty-one years of legal abortion. *British medical journal*, 1989, **298**:1231–1234.
16. **Van Look PFA, Von Hertzen H.** Demographic aspects of induced abortion. *Current obstetrics and gynaecology*, 1993, **3**:2–10.
17. **Office of Population Censuses and Surveys.** *Abortion statistics 1991.* London, H.M. Stationery Office, 1993 (Series AB No. 18).
18. **Office of Population Censuses and Surveys.** *Population trends No. 74.* London, H.M. Stationery Office, 1993.
19. **Office of Population Censuses and Surveys.** *Birth statistics 1837–1983.* London, H.M. Stationery Office, 1987 (Series FM1 No. 13).
20. **Office of Population Censuses and Surveys.** *Birth statistics 1992.* London, H.M. Stationery Office, 1994 (Series FM1 No. 21).
21. **Liskin L.** Complications of abortion in developing countries. *Population reports*, Series F, No. 7, 1980:F-105–155.

22. **Smith T.** Influence of socioeconomic factors on attaining targets for reducing teenage pregnancies. *British medical journal*, 1993, **306**:1232–1235.
23. **Henshaw SK, Silverman J.** The characteristics and prior contraceptive use of U.S. abortion patients. *Family planning perspectives*, 1988, **20**:158–168.
24. **Royston E, Armstrong S.** *Preventing maternal deaths*. Geneva, World Health Organization, 1989.
25. **Henshaw SK, Koonin LM, Smith JC.** Characteristics of U.S. women having abortions, 1987. *Family planning perspectives*, 1991, **23**:75–81.
26. **Johannisson E.** Morphological and histochemical factors related to implantation. *Baillière's clinical obstetrics and gynaecology*, 1991, **5**:191–209.
27. **Bouchard P et al.** Immunocytochemical localization of oestradiol and progesterone receptors in human endometrium: a tool to assess endometrial maturation. *Baillière's clinical obstetrics and gynaecology*, 1991, **5**:107–115.
28. **Abel MH, Baird DT.** The effect of 17 β -estradiol and progesterone on prostaglandin production by human endometrium in organ culture. *Endocrinology*, 1980, **106**:1599–1606.
29. **Abel MH, Kelly RW.** Metabolism of prostaglandins by the non-pregnant human uterus. *Journal of clinical endocrinology and metabolism*, 1983, **56**:678–685.
30. **Seppälä M et al.** Human endometrial protein secretion relative to implantation. *Baillière's clinical obstetrics and gynaecology*, 1991, **5**:61–72.
31. **Rutanen EM, Pekonen F, Mäkinen T.** Soluble 34K binding protein inhibits binding of insulin-like growth factor I to its cell receptors in human secretory phase endometrium: evidence for autocrine/paracrine regulation of growth factor action. *Journal of clinical endocrinology and metabolism*, 1988, **66**:173–180.
32. **Lea RG, Clark DA.** Macrophages and migratory cells in endometrium relevant to implantation. *Baillière's clinical obstetrics and gynaecology*, 1991, **5**:25–29.
33. **Clark DA.** Cytokines, decidua and early pregnancy. In: Milligan S, ed. *Oxford reviews of reproductive biology. Volume 15*. Oxford, Clarendon Press, 1993:83–111.
34. **Medewar PB.** Some immunological and endocrinological problems raised by the evolution of viviparity in vertebrates. *Symposium of the Society of Experimental Biology*, 1953, **7**:320–338.
35. **King A, Loke YW.** On the nature and function of human uterine granular lymphocytes. *Immunology today*, 1991, **12**:432–435.
36. **Lenton EA, Woodward AJ.** The endocrinology of conception cycles and implantation in women. *Journal of reproduction and fertility*, 1988, **36**:1–15.
37. **Csapo AI, Pulkkinen MO.** Indispensability of the human corpus luteum in the maintenance of early pregnancy. Luteectomy evidence. *Obstetrical and gynaecological survey*, 1978, **33**:69–81.

38. Garfield RE, Blennerhassett MG, Miller SM. Control of myometrial contractility: role and regulation of gap junctions. In: Clarke JR, ed. *Oxford reviews of reproductive biology. Volume 10*. Oxford, Oxford University Press, 1988:436–490.
39. Liggins GC. Cervical ripening as an inflammatory reaction. In: Ellwood DA, Anderson ABM, eds. *The cervix in pregnancy and labour: clinical and biochemical investigations*. Edinburgh, Churchill Livingstone, 1981:1–9.
40. Kelly RW. Pregnancy maintenance and parturition: the role of prostaglandin in manipulating the immune and inflammatory response. *Endocrine reviews*, 1994, **15**:684–706.
41. Wqvist N et al. Effect of prostaglandin E1 on the mid-pregnant human uterus. Intravenous, intramuscular, intra-amniotic and vaginal administration. *American journal of obstetrics and gynecology*, 1968, **102**:327–332.
42. Fliers E, Duren DR, van Zwieten PA. A prostaglandin analogue as a probable cause of myocardial infarction in a young woman. *British medical journal*, 1991, **302**:416.
43. Bygdeman M et al. Termination of early pregnancy: future development. *Acta obstetrica et gynaecologica Scandinavica*, 1983, **113** (Suppl.):125–129.
44. Rosen AS et al. Randomized comparison of prostaglandin treatment in hospital or at home with vacuum aspiration for termination of early pregnancy. *Contraception*, 1984, **29**:423–435.
45. Lahteenmaki P et al. Pharmacokinetics and metabolism of RU 486. *Journal of steroid biochemistry*, 1987, **27**:859–863.
46. Swahn ML, Bygdeman M. The effect of the antiprogesterin RU 486 on uterine contractility and sensitivity to prostaglandin and oxytocin. *British journal of obstetrics and gynaecology*, 1988, **95**:126–134.
47. Johannisson E et al. Vascular changes in the human endometrium following the administration of the progesterone antagonist RU 486. *Contraception*, 1989, **39**:103–117.
48. Smith SK, Kelly RW. The effect of the antiprogesterins RU 486 and ZK 98734 on the synthesis and metabolism of prostaglandins $F_{2\alpha}$ and E_2 in separated cells from early human decidua. *Journal of clinical endocrinology and metabolism*, 1987, **65**:527–534.
49. Cheng L et al. The effects of mifepristone (RU 486) on prostaglandin dehydrogenase in decidual and chorionic tissue in early pregnancy. *Human reproduction*, 1993, **8**:705–709.
50. Kelly RW, Leask R, Calder AA. Choriodecidual production of interleukin-8 and mechanism of parturition. *Lancet*, 1992, **339**:776–777.
51. Rådestad A, Thyberg J, Christensen NJ. Cervical ripening with mifepristone (RU 486) in first-trimester abortion. An electron microscope study. *Human reproduction*, 1993, **8**:1136–1142.
52. World Health Organization Task Force on Post-Ovulatory Methods for Fertility Regulation. The use of mifepristone (RU 486) for cervical

- preparation in first-trimester pregnancy termination by vacuum aspiration. *British journal of obstetrics and gynaecology*, 1990, **97**:260–266.
53. Bygdeman M, Swahn ML. Progesterone receptor blockage. Effect on uterine contractility and early pregnancy. *Contraception*, 1985, **32**:45–51.
 54. Swahn ML et al. Termination of early pregnancy with ZK 98,734: pharmacokinetic behaviour and clinical effect. *Human reproduction*, 1994, **9**:57–63.
 55. Crooij MJ et al. Termination of early pregnancy by the 3 β -hydroxysteroid dehydrogenase inhibitor epostane. *New England journal of medicine*, 1988, **319**:813–817.
 56. Webster MA, Phipps SL, Gillmer MD. Interruption of first-trimester human pregnancy following Epostane therapy. Effect of prostaglandin E₂ pessaries. *British journal of obstetrics and gynaecology*, 1985, **92**:963–968.
 57. Abdul-Karim R, Assali NS. Renal function in human pregnancy: V. Effects of oxytocin on renal hemodynamics and water and electrolyte excretion. *Journal of laboratory and clinical medicine*, 1961, **57**:522–532.
 58. Liggins GC. The treatment of missed abortion by high-dosage syntocinon intravenous infusion. *Journal of obstetrics and gynaecology of the British Commonwealth*, 1962, **69**:277.
 59. Kerenyi TD. Hypernatraemia following intra-uterine instillation of hypertonic saline solution: report of a case and discussion. *Obstetrics and gynaecology*, 1969, **33**:520–527.
 60. Ivanisevic M, Djelmis J. Amniotic fluid and maternal plasma prostaglandins in hypertonic saline-induced abortion. *International journal of gynaecology and obstetrics*, 1990, **31**:355–359.
 61. Greenhalf JO, Diggory PLC. Induction of therapeutic abortion by intra-amniotic injection of urea. *British medical journal*, 1971, **1**:28–29.
 62. Ingemanson CA. Legal abortion by extra-amniotic instillation of Rivanol in combination with rubber catheter insertion into the uterus after the 12th week of pregnancy. *American journal of obstetrics and gynecology*, 1973, **115**:211–215.
 63. Sepeika N. The action of acriflavine on the uterus. *Quarterly journal of pharmacy and pharmacology*, 1934, **7**:44–46.
 64. Conner EA et al. Efficacy of various locally applied chemicals as contragestational agents in rats. *Contraception*, 1976, **13**:571–582.
 65. Joshi NJ et al. Comparative toxicity of acriflavine and Rivanol in mice. *Indian journal of experimental biology*, 1978, **16**:1038–1042.
 66. Johnson N. Intracervical tents: usage and mode of action. *Obstetrical and gynaecological survey*, 1989, **44**:410–420.
 67. Norström A, Bryman I, Hansson HA. Cervical dilatation by Lamicel before first-trimester abortion: a clinical and experimental study. *British journal of obstetrics and gynaecology*, 1988, **95**:372–376.
 68. Wells EC, Hulka JF. Cervical dilatation: a comparison of Lamicel and Dilapan. *American journal of obstetrics and gynecology*, 1989, **161**:1124–1126.

69. Hackett GA, Reginald P, Paintin DB. Comparison of the Foley catheter and dinoprostone pessary for cervical preparation before second-trimester abortion. *British journal of obstetrics and gynaecology*, 1989, **96**:1432–1434.
70. Atad J et al. Gradual cervical dilatation for termination of early second-trimester pregnancy with a double-balloon device. *Obstetrics and gynaecology*, 1991, **78**:1142–1146.
71. Laufe LE. The menstrual regulation procedure. *Studies in family planning*, 1977, **8**:253–256.
72. Fortney JA, Miller ER, Kessel E. Competing risks of unnecessary procedures and complications. *Studies in family planning*, 1977, **8**:257–262.
73. Stubblefield PG. Control of pain for women undergoing abortion. *International journal of gynecology and obstetrics*, 1989, **3** (Suppl.):131–140.
74. World Health Organization Task Force on Post-Ovulatory Methods for Fertility Regulation. Menstrual regulation by intramuscular injections of 16-phenoxytetranor PGE₂ methyl sulfonylamide or vacuum aspiration. A randomized multicentre study. *British journal of obstetrics and gynaecology*, 1987, **94**:949–956.
75. Van Look PFA, Bygdeman M. Antiprogesterone steroids: a new dimension in human fertility regulation. In: Milligan SR, ed. *Oxford reviews of reproductive biology. Volume 11*. Oxford, Oxford University Press, 1989:2–60.
76. Couzinet B et al. Termination of early pregnancy by the progesterone antagonist RU 486 (mifepristone). *New England journal of medicine*, 1986, **315**:1565–1570.
77. Cameron IT, Mitchie AF, Baird DT. Therapeutic abortion in early pregnancy with antiprogesterone RU 486 alone or in combination with prostaglandin analogue (gemeprost). *Contraception*, 1986, **34**:459–468.
78. Dubois C et al. Contragestion par le RU 486: intérêt de l'association à un dérivé prostaglandine. [Abortion induced by RU 486: importance of its combination with a prostaglandin derivative.] *Comptes rendus de l'Académie des Sciences, Série III, Sciences de la vie*, 1988, **306**:57–61.
79. Silvestre L et al. Voluntary interruption of pregnancy with mifepristone (RU 486) and a prostaglandin analogue. A large-scale French experience. *New England journal of medicine*, 1990, **322**:645–648.
80. United Kingdom multicentre trial. The efficacy and tolerance of mifepristone and prostaglandin in first-trimester termination of pregnancy. *British journal of obstetrics and gynaecology*, 1990, **97**:480–486.
81. World Health Organization Task Force on Post-Ovulatory Methods of Fertility Regulation. Termination of pregnancy with reduced doses of mifepristone. *British medical journal*, 1993, **307**:532–537.
82. McKinley C, Thong KJ, Baird DT. The effect of dose of mifepristone and gestation on the efficacy of medical abortion with mifepristone and misoprostol. *Human reproduction*, 1993, **8**:1502–1505.

83. **Peyron R et al.** Early termination of pregnancy with mifepristone (RU 486) and the orally active prostaglandin misoprostol. *New England journal of medicine*, 1993, **328**:1509–1513.
84. **Ulmann A et al.** Medical termination of early pregnancy with mifepristone (RU 486) followed by a prostaglandin analogue. Study in 16,369 women. *Acta obstetrica et gynaecologica Scandinavica*, 1992, **71** (Suppl.):278–283.
85. **Rodger MW, Baird DT.** Blood loss following induction of early abortion using mifepristone (RU 486) and a prostaglandin analogue (gemeprost). *Contraception*, 1989, **40**:439–447.
86. **Pons JC et al.** Development after exposure to mifepristone in early pregnancy. *Lancet*, 1991, **338**:768.
87. **World Health Organization Task Force on Prostaglandins for Fertility Regulation.** Vaginal administration of 15-methyl-PGF_{2α} methyl ester for preoperative cervical dilatation. *Contraception*, 1981, **23**:251–259.
88. **Schulz K, Grimes DA, Cates W.** Measures to prevent cervical injury during suction curettage abortion. *Lancet*, 1983, **i**:1182–1185.
89. **Toppozada M et al.** Administration of 15-methyl prostaglandin F_{2α} as a preoperative means of cervical dilatation. *Prostaglandins*, 1973, **4**:371–379.
90. **Kent DR, Goldstein AI, Milokvich D.** Preoperative cervical dilatation with a single long-acting prostaglandin analogue suppository. An alternative to traumatic mechanical dilatation before surgical evacuation. *Journal of reproductive medicine*, 1983, **28**:778–780.
91. **Nicolaidis KH et al.** Lamicel: a new technique for cervical dilatation before first-trimester abortion. *British journal of obstetrics and gynaecology*, 1983, **90**:475–479.
92. **Lauersen NH, Graves ZR.** Preabortion cervical dilatation with a low-dose prostaglandin suppository. A comparison of two analogues. *Journal of reproductive medicine*, 1984, **29**:133–135.
93. **Grimes DA, Ray IG, Middleton CJ.** Lamicel versus laminaria for cervical dilatation before early second-trimester abortion: a randomized clinical trial. *Obstetrics and gynaecology*, 1987, **69**:887–890.
94. **Darney PD, Dorward K.** Cervical dilation before first-trimester elective abortion: a controlled comparison of meteneprost, laminaria, and Hypan. *Obstetrics and gynaecology*, 1987, **70**:397–400.
95. **World Health Organization Task Force on Prostaglandins for Fertility Regulation.** Randomized comparison of different prostaglandin analogues and laminaria tent for preoperative cervical dilatation. *Contraception*, 1986, **34**:237–251.
96. **Eaton CJ, Cohn F, Bollinger CC.** Laminaria tent as a cervical dilator prior to aspiration-type therapeutic abortion. *Obstetrics and gynaecology*, 1972, **39**:535–537.
97. **Mackenzie IZ, Fry A.** Prostaglandin E₂ pessaries to facilitate first-trimester aspiration termination. *British journal of obstetrics and gynaecology*, 1981, **88**:1033–1037.

98. Ho PC et al. Pre-operative cervical dilatation in termination of first-trimester pregnancies using 16,16-dimethyl-trans- Δ^2 -PGE₁ methyl ester vaginal pessaries. *Contraception*, 1983, 27:339–346.
99. Welch CC et al. Preoperative dilatation of the first-trimester cervix: a comparison between lamicel and 16,16-dimethyl-trans- Δ^2 -prostaglandin E₁ methyl ester pessaries. *American journal of obstetrics and gynecology*, 1984, 149:400–402.
100. Christensen NJ, Bygdeman M, Green K. Comparison of different prostaglandin analogues and laminaria for preoperative dilatation of the cervix in late first-trimester abortion. *Contraception*, 1983, 27:51–61.
101. Jürgensen U, Christensen NJ. Cervagem/Dilapan for preoperative cervical dilatation prior to vacuum aspiration for termination of first-trimester pregnancy. A prospective randomized study. *Contraception*, 1989, 40:741–749.
102. Durlot F et al. Efficacy of progesterone antagonist RU 486 (mifepristone) for pre-operative cervical dilatation during first-trimester abortion. *Human reproduction*, 1988, 3:583–584.
103. Rådestad A, Christensen NJ, Strömberg L. Induced cervical ripening with mifepristone in first-trimester abortion. A double-blind randomized biomechanical study. *Contraception*, 1988, 38:301–312.
104. Gupta JK, Johnson N. Effect of mifepristone on dilatation of the pregnant and non-pregnant cervix. *Lancet*, 1990, 335:1238–1240.
105. Lefebvre Y et al. The effects of RU-38486 on cervical ripening. Clinical studies. *American journal of obstetrics and gynecology*, 1990, 162:61–65.
106. Henshaw RC, Templeton AA. Pre-operative cervical preparation before first-trimester vacuum aspiration: a randomized controlled comparison between gemeprost and mifepristone (RU 486). *British journal of obstetrics and gynaecology*, 1991, 98:1025–1030.
107. Bozorgi N. Statistical analysis of first-trimester pregnancy terminations in an ambulatory surgical center. *American journal of obstetrics and gynecology*, 1977, 127:763–768.
108. Greenslade FC et al. Manual vacuum aspiration: a summary of clinical and programmatic experience worldwide. Carrboro, NC, International Projects Assistance Services (IPAS), 1993.
109. Heisterberg L, Kringlebach M. Early complications after induced first-trimester abortion. *Acta obstetrica et gynaecologica Scandinavica*, 1987, 66:201–204.
110. Hakim-Elahi E, Tovell HM, Burnhill MS. Complications of first-trimester abortion: a report of 170 000 cases. *Obstetrics and gynaecology*, 1990, 76:129–135.
111. Grimes DA et al. Local versus general anesthesia: which is safer for performing suction curettage abortions? *American journal of obstetrics and gynecology*, 1979, 135:1030–1035.
112. Cheng M et al. Complications following induced abortion by vacuum aspiration: patient characteristics and procedures. *Studies in family planning*, 1977, 8:125–129.

113. Miller ER et al. First-trimester abortion by vacuum aspiration: interphysician variability. *International journal of gynaecology and obstetrics*, 1978–79, 16:144–149.
114. Frank PI et al. Induced abortion operations and their early sequelae. *Journal of the Royal College of General Practitioners*, 1985, 35:175–180.
115. Buehler JW et al. The risk of serious complications from induced abortion: do personal characteristics make a difference? *American journal of obstetrics and gynecology*, 1985, 153:14–20.
116. Gillett PG et al. Therapeutic abortion with the use of prostaglandin F₂ α . A study of efficacy, tolerance and plasma levels with intravenous administration. *American journal of obstetrics and gynecology*, 1972, 112:330–338.
117. Karim SM, Filshie GM. The use of prostaglandin E₂ for therapeutic abortion. *Journal of obstetrics and gynaecology of the British Commonwealth*, 1972, 79:1–13.
118. Lauersen NH, Wilson KH. Continuous extraovular administration of prostaglandin F₂ α for mid-trimester abortion. *American journal of obstetrics and gynecology*, 1974, 120:273–280.
119. Cameron IT, Baird DT. The use of 16,16-dimethyl-trans- Δ^2 -prostaglandin E₁ methyl ester (gemeprost) vaginal pessaries for the termination of pregnancy in the early second trimester. A comparison with extra-amniotic prostaglandin E₂. *British journal of obstetrics and gynaecology*, 1984, 91:1136–1140.
120. Schwallie PC, Lamborn KR. Induction of abortion by intramuscular administration of 15(S)-15-methyl PGF_{2 α} . An overview of 825 cases. *Journal of reproductive medicine*, 1979, 23:289–293.
121. Lauersen NH, Wilson KH. Midtrimester abortion induced by serial intramuscular injections of 15(S)-15-methyl prostaglandin F_{2 α} . *American journal of obstetrics and gynecology*, 1975, 121:273–276.
122. Leader A et al. Induced abortion in the 8–9th week of pregnancy with vaginally administered 15-methyl PGF_{2 α} methyl ester. *Prostaglandins*, 1976, 12:631–637.
123. Borell U et al. Successful first-trimester abortion with 15(S)-15-methyl prostaglandin F_{2 α} -methyl ester vaginal suppositories. *Contraception*, 1976, 13:87–94.
124. Wagatsuma T et al. Interruption of pregnancy with vaginal suppositories containing 16,16-dimethyl-trans- Δ^2 -prostaglandin E₁ methyl ester. *Contraception*, 1979, 19:591–597.
125. Nakano R et al. The use of prostaglandin E₁ analogue pessaries in patients having first-trimester induced abortions. *British journal of obstetrics and gynaecology*, 1980, 87:287–291.
126. Takagi S et al. The abortifacient effect of 16,16-dimethyl-trans- Δ^2 -PGE₁ methyl ester, a new prostaglandin analogue, on mid-trimester pregnancies and long-term follow-up observations. *Prostaglandins*, 1982, 23:591–601.
127. Fielding WL et al. Continued pregnancy after failed first-trimester abortion. *Obstetrics and gynaecology*, 1984, 63:421–424.

128. Tietze C. Second-trimester abortion: a global view. In: Berger GS, Brenner WE, Keith LG, eds. *Second-trimester abortion*. Boston, John Wright, 1981:1–11.
129. Atienza MF, Burkman RT, King TM. Use of osmotic dilators to facilitate induced midtrimester abortion: clinical evaluations. *Contraception*, 1984, 30:215–223.
130. Rodger MW, Baird DT. Pretreatment with mifepristone reduces interval between prostaglandin administration and expulsion in second-trimester abortion. *British journal of obstetrics and gynaecology*, 1990, 97:41–45.
131. Spencer JA et al. Cervical preparation with gemeprost for dilatation and evacuation. *British journal of obstetrics and gynaecology*, 1991, 98:731–733.
132. Thong KJ, Baird DT. An open study comparing two regimens of gemeprost for the termination of pregnancy in the second trimester. *Acta obstetrica et gynaecologica Scandinavica*, 1992, 71:191–196.
133. Thong KJ, Baird DT. A study of gemeprost alone, Dilapan or mifepristone in combination with gemeprost for the termination of second-trimester pregnancy. *Contraception*, 1992, 46:11–17.
134. World Health Organization Task Force on the Use of Prostaglandins for the Regulation of Fertility. Repeated vaginal administration of 15-methyl PGF_{2α} methyl ester for termination of pregnancy in the 13th to 20th week of gestation. *Contraception*, 1977, 16:175–181.
135. World Health Organization Task Force on the Use of Prostaglandins for the Regulation of Fertility. Prostaglandins and abortion. I. Intramuscular administration of 15-methyl PGF_{2α} for induction of abortion in weeks 10 to 20 of pregnancy. *American journal of obstetrics and gynecology*, 1977, 129:593–596.
136. Lauersen NH, Wilson KH. Termination of mid-trimester pregnancy by serial intramuscular injections of 15(S)-15-methyl PGF_{2α}. *American journal of obstetrics and gynecology*, 1976, 124:169–176.
137. Green K et al. Development of a vaginal gel containing 9-deoxo-16,16-dimethyl-9-methylene PGE₂ for cervical dilatation and pregnancy termination. *Prostaglandins, leukotrienes and essential fatty acids*, 1988, 32:121–127.
138. Lebed JP, Rubin A, Millman AE. Comparison between intra-amniotic PGF_{2α} and vaginal PGE₂ for second-trimester abortion. *Obstetrics and gynaecology*, 1980, 56:90–96.
139. World Health Organization Task Force on the Use of Prostaglandins for the Regulation of Fertility. Termination of second-trimester pregnancy by intramuscular injection of 16-phenoxo-ω-17,18,19,20-tetranor-PGE₂ methyl sulphonylamide. *International journal of gynaecology and obstetrics*, 1982, 20:383–386.
140. World Health Organization Task Force on the Use of Prostaglandins for the Regulation of Fertility. Prostaglandins and abortion. III. Comparison of single intra-amniotic injection of 15-methyl PGF_{2α} and PGF_{2α} for termination of second-trimester pregnancy: an international multicenter

- study. *American journal of obstetrics and gynecology*, 1977, 129:601–606.
141. **Toppozada M, Ismail AA.** Intra-uterine administration of drugs for termination of pregnancy in the second trimester. *Baillière's clinical obstetrics and gynaecology*, 1990, 4:327–349.
 142. **Toppozada M, Bygdeman M, Wiquist N.** Prostaglandin administration for induction of mid-trimester abortion in complicated pregnancies. *Lancet*, 1972, ii:1420–1421.
 143. **Midwinter A, Shepherd A, Bowen M.** Continuous extra-amniotic prostaglandin E₂ for therapeutic termination and the effectiveness of various infusion rates and dosages. *Journal of obstetrics and gynaecology of the British Commonwealth*, 1973, 80:371–373.
 144. **Peat B.** Second-trimester abortion by extra-amniotic PGF_{2α} infusion: experience of 178 cases. *Australian and New Zealand journal of obstetrics and gynaecology*, 1991, 31:47–51.
 145. **World Health Organization Task Force on the Use of Prostaglandins for the Regulation of Fertility.** Prostaglandins and abortion. II. Single extra-amniotic administration of 0.92mg of 15-methyl PGF_{2α} in Hyskon for termination of pregnancies in weeks 10 to 20 of gestation: an international multicenter study. *American journal of obstetrics and gynecology*, 1977, 129:597–600.
 146. **Urquhart DR, Templeton AA.** Mifepristone (RU 486) and second-trimester pregnancy. *Lancet*, 1987, ii:1405.
 147. **Frydman R et al.** Mifepristone (RU 486) and therapeutic late pregnancy termination: a double-blind study of two different doses. *Human reproduction*, 1988, 3:803–806.
 148. **Gottlieb C, Bygdeman M.** The use of antiprogesterin (RU 486) for termination of second-trimester pregnancy. *Acta obstetricia et gynaecologica Scandinavica*, 1991, 70:199–203.
 149. **Ho PC, Ma HK.** Termination of second-trimester pregnancy with sulprostone and mifepristone: a randomized double-blind placebo controlled trial. *Contraception*, 1993, 47:123–129.
 150. **Thong KJ, Baird DT.** Induction of second-trimester abortion with mifepristone and gemeprost. *British journal of obstetrics and gynaecology*, 1993, 100:758–761.
 151. **Sharma SD, Steinmiller VM, Hale RW.** Intramuscular administration of 15-methyl PGF_{2α} and laminaria for termination of mid-trimester pregnancy. In: Toppozada M, Bygdeman M, Hafez S, eds. *Prostaglandins and fertility regulation*. Lancaster, MTP Press, 1984:119–128.
 152. **Bygdeman M.** Termination of second-trimester pregnancy with laminaria and intramuscular 15-methyl PGF_{2α} or 16-phenoxy-omega-17,18,19,20-tetranor PGE₂ methyl sulphonylamide. A randomized multicenter study. *International journal of gynaecology and obstetrics*, 1988, 26:129–135.
 153. **Burkman RT, Dubin NH, King TM.** The use of hyperosmolar urea for the elective abortion of mid-trimester pregnancy. In: Zatuchni GI, Sciarra JJ, Speidel JJ, eds. *Pregnancy termination*. Hagerstown, MD, Harper & Row, 1979:261–267.

154. Mackenzie JM, Roufa A, Tovell HM. Mid-trimester abortion: clinical experience with amniocentesis and hypertonic instillation in 400 patients. *Clinical obstetrics and gynaecology*, 1971, **14**:107–123.
155. Ingemanson CA. The ethacridine catheter method in second-trimester abortion. In: Zatuchni GI, Sciarra JJ, Speidel JJ, eds. *Pregnancy termination*. Hagerstown, MD, Harper & Row, 1979:282–289.
156. Grimes DA, Schulz KF, Cates WJ, Jr. Prevention of uterine perforation during curettage abortion. *Journal of the American Medical Association*, 1984, **251**:2108–2111.
157. Schulz KF, Grimes DA, Christensen DD. Vasopressin reduces blood loss from second-trimester dilatation and evacuation abortion. *Lancet*, 1985, **2**:353–356.
158. Hulka JF et al. A new electronic force monitor to measure factors influencing cervical dilatation for vacuum curettage. *American journal of obstetrics and gynecology*, 1974, **120**:166–173.
159. Hulka JF. Pratt dilators: resistance at 9mm is an instrumentation artifact. *American journal of obstetrics and gynecology*, 1988, **159**:871–873.
160. Darney PD, Sweet RL. Routine intra-operative ultrasonography for second-trimester abortion reduces the incidence of uterine perforation. *Journal of ultrasound in medicine*, 1989, **8**:71–75.
161. Jacot FR et al. A five-year experience with second-trimester induced abortions: no increase in complication rate as compared to the first trimester. *American journal of obstetrics and gynecology*, 1993, **168**:633–637.
162. Grimes DA et al. Mid-trimester abortion by dilatation and evacuation: a safe and practical alternative. *New England journal of medicine*, 1977, **296**:1141–1145.
163. Kafrissen ME et al. Midtrimester abortion. Intra-amniotic instillation of hyperosmolar urea and prostaglandin $F_{2\alpha}$ v dilatation and evacuation. *Journal of the American Medical Association*, 1984, **251**:916–919.
164. Binkin NJ. Trends in induced legal abortion: morbidity and mortality. *Clinics in obstetrics and gynaecology*, 1986, **13**:83–93.
165. Weissman A et al. Self-induced abortion — the peril is still real. *Advances in contraception*, 1992, **8**:81–88.
166. Okonofua FE, Onwudiegwu U, Odunsi OA. Illegal induced abortion: a study of 74 cases in Ile-Ife, Nigeria. *Tropical doctor*, 1992, **22**:75–78.
167. Castadot R et al. Pregnancy termination: techniques, risks and complications and their management. *Fertility and sterility*, 1986, **45**:5–17.
168. Frank PI et al. Pregnancy following induced abortion: maternal morbidity, congenital abnormalities and neonatal death. *British journal of obstetrics and gynaecology*, 1987, **94**:836–842.
169. Adetoro OO. A 15-year study of illegally induced abortion mortality at Ilorin, Nigeria. *International journal of gynaecology and obstetrics*, 1989, **29**:65–72.

170. Henshaw SK. How safe is therapeutic abortion? In: Teoh E-S, Ratnam SS, Macnaughton MC, eds. *Pregnancy termination and labour*. Carnforth, Parthenon Publishing Group, 1993:31–41.
171. Council on Scientific Affairs, American Medical Association. Induced termination of pregnancy before and after Roe v Wade. Trends in the mortality and morbidity of women. *Journal of the American Medical Association*, 1992, **268**:3231–3239.
172. Wadhera S. Early complication risks of legal abortions, Canada, 1975–1980. *Canadian journal of public health*, 1982, **73**:396–400.
173. Fried G et al. Somatic complications and contraceptive techniques following legal abortion. *Acta obstetricia et gynaecologica Scandinavica*, 1989, **68**:515–521.
174. Smith RG, Palmore JA, Steinhoff PG. The potential reduction of medical complications from induced abortion. *International journal of gynaecology and obstetrics*, 1978, **15**:337–346.
175. Moller BR, Hansen JT, Mommsen S. Effect of general and local anaesthesia on blood loss during and after therapeutic abortion. *Acta obstetricia et gynaecologica Scandinavica*, 1978, **57**:133–135.
176. Andolsek L et al. The safety of local anesthesia and outpatient treatment: a controlled study of induced abortion by vacuum aspiration. *Studies in family planning*, 1977, **8**:118–124.
177. Townsend DE, Barbis SD, Mathews RD. Vasopressin and operative hysteroscopy in the management of delayed postabortion and postpartum bleeding. *American journal of obstetrics and gynecology*, 1991, **165**:616–618.
178. Kaali SG, Szigetvari IA, Bartfai GS. The frequency and management of uterine perforations during first-trimester abortions. *American journal of obstetrics and gynecology*, 1989, **161**:406–408.
179. Wiener JJ, Evans AS. Uterine rupture in midtrimester abortion. A complication of gemeprost vaginal pessaries and oxytocin. Case report. *British journal of obstetrics and gynaecology*, 1990, **97**:1061–1062.
180. Byrne P, Onyekwuluje T. Uterine rupture after termination of pregnancy with gemeprost. *British journal of medicine*, 1991, **302**:852.
181. Guidozzi F, van der Griendt M, Israelstam D. Major complications associated with extra-amniotic prostaglandin $F_{2\alpha}$ termination of the mid-trimester pregnancy. *South African medical journal*, 1992, **82**:102–104.
182. Lurie S, Katz Z, Insler V. Midtrimester induction of abortion: comparison of extraovular prostaglandin E_2 and intra-amniotic prostaglandin $F_{2\alpha}$. *Contraception*, 1993, **47**:475–481.
183. Kajanoja P. Induction of abortion by prostaglandins in the second trimester of pregnancy. A review. *Acta obstetricia et gynaecologica Scandinavica*, 1983, **113** (Suppl.):145–151.
184. Rubin GL et al. Fatal ectopic pregnancy after attempted legally induced abortion. *Journal of the American Medical Association*, 1980, **244**:1705–1708.

185. Munsick RA. Clinical test for placenta in 300 consecutive menstrual aspirations. *Obstetrics and gynaecology*, 1982, **60**:738–741.
186. Osborn JF et al. General anaesthesia, a risk factor for complication following induced abortion? *European journal of epidemiology*, 1990, **6**:416–422.
187. MacKay HT, Schulz KF, Grimes DA. Safety of local versus general anaesthesia for second-trimester dilatation and evacuation abortion. *Obstetrics and gynaecology*, 1985, **66**:661–665.
188. Atrash HK, Cheek TG, Hogue CJ. Legal abortion mortality and general anaesthesia. *American journal of obstetrics and gynecology*, 1988, **158**:420–424.
189. Belanger E, Melzack R, Lauzon P. Pain of first-trimester abortion: a study of psychosocial and medical predictors. *Pain*, 1989, **36**:339–350.
190. Kafirissen ME et al. Coagulopathy and induced abortion methods: rates and relative risks. *American journal of obstetrics and gynecology*, 1983, **147**:344–345.
191. Guidotti RJ, Grimes DA, Cates W, Jr. Fatal amniotic fluid embolism during legally induced abortion, United States, 1972–1978. *American journal of obstetrics and gynecology*, 1981, **141**:257–261.
192. Nesheim BI. Induced abortion by the suction method. An analysis of complication rates. *Acta obstetrica et gynaecologica Scandinavica*, 1984, **63**:591–595.
193. Cates W, Jr et al. Dilatation and evacuation procedures and second trimester abortions. The role of physician skill and hospital setting. *Journal of the American Medical Association*, 1982, **248**:559–563.
194. Osser S, Persson K. Postabortal pelvic infection associated with *Chlamydia trachomatis* and the influence of humoral immunity. *American journal of obstetrics and gynecology*, 1984, **150**:699–703.
195. Barbacci MB et al. Postabortal endometritis and isolation of *Chlamydia trachomatis*. *Obstetrics and gynaecology*, 1986, **68**:686–690.
196. Heisterberg L et al. The role of vaginal secretory immunoglobulin A, *Gardnerella vaginalis*, anaerobes, and *Chlamydia trachomatis* in postabortal pelvic inflammatory disease. *Acta obstetrica et gynaecologica Scandinavica*, 1987, **66**:99–102.
197. Skjeldestad FE et al. Induced abortion: *Chlamydia trachomatis* and postabortal complications. A cost–benefit analysis. *Acta obstetrica et gynaecologica Scandinavica*, 1988, **67**:525–529.
198. Grimes DA, Schulz KF, Cates W, Jr. Prophylactic antibiotics for curettage abortion. *American journal of obstetrics and gynecology*, 1984, **150**:689–694.
199. Darj E, Stralin EB, Nilsson S. The prophylactic effect of doxycycline on postoperative infection rate after first-trimester abortion. *Obstetrics and gynaecology*, 1987, **70**:755–758.
200. Levallois P, Rioux J-E. Prophylactic antibiotics for suction curettage abortion: results of a clinical controlled trial. *American journal of obstetrics and gynecology*, 1988, **158**:100–105.

201. Sorensen JL et al. A double-blind randomized study of the effect of erythromycin in preventing pelvic inflammatory disease after first-trimester abortion. *British journal of obstetrics and gynaecology*, 1992, **99**:434–438.
202. Heisterberg L, Gnarpe H. Preventive lymecycline therapy in women with a history of pelvic inflammatory disease undergoing first-trimester abortion: a clinical, controlled trial. *European journal of obstetrics, gynaecology and reproductive biology*, 1988, **28**:241–247.
203. Larsson P-G et al. Incidence of pelvic inflammatory disease after first-trimester legal abortion in women with bacterial vaginosis after treatment with metronidazole: a double-blind, randomized study. *American journal of obstetrics and gynecology*, 1992, **166**:100–103.
204. Hogue CJ. Impact of abortion on subsequent fecundity. *Clinics in obstetrics and gynaecology*, 1986, **13**:95–103.
205. Frank P et al. The effect of induced abortion on subsequent fertility. *British journal of obstetrics and gynaecology*, 1993, **100**:575–580.
206. Daling JR et al. Tubal infertility in relation to prior induced abortion. *Fertility and sterility*, 1985, **43**:389–394.
207. World Health Organization Task Force on Sequelae of Abortion. Secondary infertility following induced abortion. *Studies in family planning*, 1984, **15**:291–295.
208. MacKenzie IZ, Fry A. A prospective self-controlled study of fertility after second-trimester prostaglandin-induced abortion. *American journal of obstetrics and gynecology*, 1988, **158**:1137–1140.
209. Burkman RT, Mason KJ, Gold EB. Ectopic pregnancy and prior induced abortion. *Contraception*, 1988, **37**:21–27.
210. Daling JR et al. Ectopic pregnancy in relation to previous induced abortion. *Journal of the American Medical Association*, 1985, **253**:1005–1008.
211. Hogue CJ, Cates W, Jr, Tietze C. The effects of induced abortion on subsequent reproduction. *Epidemiological reviews*, 1982, **4**:66–94.
212. Kline J et al. Induced abortion and spontaneous abortion: no connection? *American journal of epidemiology*, 1978, **107**:290–298.
213. Chung CS et al. Induced abortion and spontaneous fetal loss in subsequent pregnancies. *American journal of public health*, 1982, **72**:548–554.
214. Frank PI et al. Outcome of pregnancy following induced abortion. *British journal of obstetrics and gynaecology*, 1985, **92**:308–316.
215. Bracken MB et al. Risk of late first- and second-trimester miscarriage after induced abortion. *American journal of perinatology*, 1986, **3**:84–91.
216. Bracken MB et al. Low birth weight in pregnancies following induced abortion: no evidence for an association. *American journal of epidemiology*, 1986, **123**:604–613.
217. Mandelson MT, Maden CB, Daling JR. Low birth weight in relation to multiple induced abortions. *American journal of public health*, 1992, **82**:391–394.

218. **Lopes A et al.** The impact of multiple induced abortions on the outcome of subsequent pregnancy. *Australian and New Zealand journal of obstetrics and gynaecology*, 1991, **31**:41–43.
219. **Grimes DA, Techman T.** Legal abortion and placenta previa. *American journal of obstetrics and gynecology*, 1984, **149**:501–504.
220. **Taylor VM et al.** Placenta previa in relation to induced and spontaneous abortion: a population-based study. *Obstetrics and gynaecology*, 1993, **82**:88–91.
221. **Dagg PK.** The psychological sequelae of therapeutic abortion — denied and completed. *American journal of psychiatry*, 1991, **148**:578–585.
222. **Stotland NL.** The myth of the abortion trauma syndrome. *Journal of the American Medical Association*, 1992, **268**:2078–2079.
223. **Lazarus A.** Psychiatric sequelae of legalized elective first-trimester abortion. *Journal of psychosomatic obstetrics and gynecology*, 1985, **4**:141–150.
224. **Adler NE et al.** Psychological responses after abortion. *Science*, 1990, **248**:41–44.
225. **David HP, Rasmussen NK, Holst E.** Postpartum and postabortion psychotic reactions. *Family planning perspectives*, 1981, **13**:88–89, 91–92.
226. **Major B, Mueller P, Hildebrandt K.** Attributions, expectations and coping with abortion. *Journal of personal and social psychology*, 1985, **48**:585–599.
227. **Robbins JM.** Out-of-wedlock abortion and delivery: the importance of the male partner. *Social problems*, 1984, **31**:334–350.
228. **Bracken MB.** Psychosomatic aspects of abortion: implications for counselling. *Journal of reproductive medicine*, 1977, **19**:265–272.
229. **Handy JA.** Psychological and social aspects of induced abortion. *British journal of clinical psychology*, 1982, **21**:29–41.
230. **Landy U.** Abortion counselling — a new component of medical care. *Clinics in obstetrics and gynaecology*, 1986, **13**:33–41.
231. **Kvale G, Heuch I, Eide GE.** A prospective study of reproductive factors and breast cancer. I. Parity. *American journal of epidemiology*, 1987, **126**:831–841.
232. **Harris BM et al.** Risk of cancer of the breast after legal abortion during first trimester: a Swedish register study. *British medical journal*, 1989, **299**:1430–1432.
233. **Remennick LI.** Induced abortion as a cancer risk factor: a review of epidemiological evidence. *Journal of epidemiology and community health*, 1990, **44**:259–264.
234. **Winikoff B et al.** Studying the acceptability and feasibility of medical abortion. *Law, medicine and health care*, 1992, **20**:195–198.
235. **Rosen AS et al.** Acceptability of a nonsurgical method to terminate very early pregnancy in comparison to vacuum aspiration. *Contraception*, 1979, **19**:107–117.

236. Hill NC, Ferguson J, MacKenzie IZ. The efficacy of oral mifepristone (RU 38,486) with a prostaglandin E₁ analogue vaginal pessary for termination of early pregnancy: complications and patient acceptability. *American journal of obstetrics and gynecology*, 1990, **162**:414–417.
237. Tang GW. A pilot study of acceptability of RU 486 and ONO 802 in a Chinese population. *Contraception*, 1991, **44**:523–532.
238. Urquhart DR, Templeton AA. Psychiatric morbidity and acceptability following medical and surgical methods of induced abortion. *British journal of obstetrics and gynaecology*, 1991, **98**:396–399.
239. Legarth J, Peen UB, Michelsen JW. Mifepristone or vacuum aspiration in termination of early pregnancy. *European journal of obstetrics, gynaecology and reproductive biology*, 1991, **41**:91–96.
240. Bachelot A, Cludy L, Spira A. Conditions for choosing between drug-induced and surgical abortions. *Contraception*, 1992, **45**:547–559.
241. Grimes DA, Mishell DR, Jr, David HP. A randomized clinical trial of mifepristone (RU 486) for induction of delayed menses: efficacy and acceptability. *Contraception*, 1992, **46**:1–10.
242. Thong KJ, Dewar MH, Baird DT. What do women want during medical abortion? *Contraception*, 1992, **46**:435–442.
243. Holmgren K. Women's evaluation of three early abortion methods. *Acta obstetrica et gynaecologica Scandinavica*, 1992, **71**:616–623.
244. Henshaw RC et al. Comparison of medical abortion with surgical vacuum aspiration: women's preferences and acceptability of treatment. *British medical journal*, 1993, **307**:714–717.
245. Tang GW, Lau OWK, Yip P. Further acceptability evaluation of RU 486 and ONO 802 as abortifacient agents in a Chinese population. *Contraception*, 1993, **48**:267–276.
246. Rosen AS. Acceptability of abortion methods. *Baillières clinical obstetrics and gynaecology*, 1990, **4**:375–390.
247. Evans MI et al. Attitudes on the ethics of abortion, sex selection, and selective pregnancy termination among health care professionals, ethicists, and clergy likely to encounter such situations. *American journal of obstetrics and gynecology*, 1991, **164**:1092–1099.
248. Kaltreider NB, Goldsmith S, Margolis AJ. The impact of midtrimester abortion techniques on patients and staff. *American journal of obstetrics and gynecology*, 1979, **135**:235–238.
249. Weisman CS et al. Abortion attitudes and performance among male and female obstetrician-gynecologists. *Family planning perspectives*, 1986, **18**:67–73.
250. Furedi A, Paintin DB, eds. *Mifepristone in practice*. London, Birth Control Trust, 1994.
251. Silvestre L. The French experience. In: *The abortion pill: widening the choice for women*. London, Birth Control Trust, 1990:16–17.
252. Klitsch M. *RU 486: the science and the politics*. New York, Allan Guttmacher Institute, 1989.

253. Greenslade FC, Winkler J, Leonard AH. Introduction of abortion technologies: a quality of care management approach. *Law, medicine and health care*, 1992, 20:161–168.
254. Greenslade FC et al. Safe abortion care: the challenges of technology introduction and quality of care. In: Senanayake P, Kleinman RL, eds. *Family planning — meeting challenges: promoting choices. Proceedings of the IPPF Family Planning Congress (New Delhi, October 1992)*. Carnforth, Parthenon Publishing Group Limited, 1993: 187–197.
255. World Health Organization Task Force on Research on the Introduction of Technologies for Fertility Regulation. *Contraceptive introduction reconsidered: a review and conceptual framework*. Geneva, World Health Organization, 1994 (unpublished document WHO/HRP/ITT/94.1; available on request from the Special Programme of Research, Development and Research Training in Human Reproduction, World Health Organization, 1211 Geneva 27, Switzerland).
256. Leonard AH, Winkler J. A quality of care framework for abortion care. *Advances in abortion care*, 1991, 1:1–3.

World Health Organization Technical Report Series

Recent reports:

No.

Sw.fr.*

827	(1992) The role of health centres in the development of urban health systems Report of a WHO Study Group on Primary Health Care in Urban Areas (42 pages)	7.–
828	(1992) Evaluation of certain food additives and naturally occurring toxicants Thirty-ninth report of the Joint FAO/WHO Expert Committee on Food Additives (57 pages)	9.–
829	(1993) Evaluation of recent changes in the financing of health services Report of a WHO Study Group (79 pages)	10.–
830	(1993) The control of schistosomiasis Second report of the WHO Expert Committee (93 pages)	12.–
831	(1993) Rehabilitation after cardiovascular diseases, with special emphasis on developing countries Report of a WHO Expert Committee (130 pages)	17.–
832	(1993) Evaluation of certain veterinary drug residues in food Fortieth report of the Joint FAO/WHO Expert Committee on Food Additives (68 pages)	10.–
833	(1993) Health promotion in the workplace: alcohol and drug abuse Report of a WHO Expert Committee (39 pages)	7.–
834	(1993) WHO Expert Committee on Specifications for Pharmaceutical Preparations Thirty-third report (35 pages)	7.–
835	(1993) Aging and working capacity Report of a WHO Study Group (55 pages)	10.–
836	(1993) WHO Expert Committee on Drug Dependence Twenty-eighth report (50 pages)	10.–
837	(1993) Evaluation of certain food additives and contaminants Forty-first report of the Joint FAO/WHO Expert Committee on Food Additives (61 pages)	10.–
838	(1993) Increasing the relevance of education for health professionals Report of a WHO Study Group on Problem-Solving Education for the Health Professions (33 pages)	8.–
839	(1993) Implementation of the Global Malaria Control Strategy Report of a WHO Study Group on the Implementation of the Global Plan of Action for Malaria Control 1993–2000 (62 pages)	10.–
840	(1994) WHO Expert Committee on Biological Standardization Forty-third report (223 pages)	31.–
841	(1994) Cardiovascular disease risk factors: new areas for research Report of a WHO Scientific Group (59 pages)	10.–
842	(1994) Nursing beyond the year 2000 Report of a WHO Study Group (25 pages)	6.–
843	(1994) Assessment of fracture risk and its application to screening for postmenopausal osteoporosis Report of a WHO Study Group (134 pages)	22.–
844	(1994) Prevention of diabetes mellitus Report of a WHO Study Group (108 pages)	15.–
845	(1994) Information support for new public health action at district level Report of a WHO Expert Committee (35 pages)	8.–
846	(1994) Fluorides and oral health Report of a WHO Expert Committee on Oral Health Status and Fluoride Use (42 pages)	8.–

* Prices in developing countries are 70% of those listed here.

847	(1994) Chemotherapy of leprosy Report of a WHO Study Group (29 pages)	6.–
848	(1994) WHO Expert Committee on Biological Standardization Forty-fourth report (94 pages)	14.–
849	(1995) Control of foodborne trematode infections Report of a WHO Study Group (165 pages)	26.–
850	(1995) The use of essential drugs Sixth report of the WHO Expert Committee (144 pages)	21.–
851	(1995) Evaluation of certain veterinary drug residues in food Forty-second report of the Joint FAO/WHO Expert Committee on Food Additives (50 pages)	10.–
852	(1995) Onchocerciasis and its control Report of a WHO Expert Committee on Onchocerciasis Control (111 pages)	15.–
853	(1995) Epidemiology and prevention of cardiovascular diseases in elderly people Report of a WHO Study Group (72 pages)	14.–
854	(1995) Physical status: the use and interpretation of anthropometry Report of a WHO Expert Committee (462 pages)	71.–
855	(1995) Evaluation of certain veterinary drug residues in food Forty-third report of the Joint FAO/WHO Expert Committee on Food Additives (65 pages)	12.–
856	(1995) WHO Expert Committee on Drug Dependence Twenty-ninth report (21 pages)	6.–
857	(1995) Vector control for malaria and other mosquito-borne diseases Report of a WHO Study Group (97 pages)	15.–
858	(1995) WHO Expert Committee on Biological Standardization Forty-fifth report (108 pages)	17.–
859	(1995) Evaluation of certain food additives and contaminants Forty-fourth report of the Joint FAO/WHO Expert Committee on Food Additives (62 pages)	11.–
860	(1996) Nursing practice Report of a WHO Expert Committee (37 pages)	12.–
861	(1996) Integration of health care delivery Report of a WHO Study Group (74 pages)	14.–
862	(1996) Hypertension control Report of a WHO Expert Committee (89 pages)	16.–
863	(1996) WHO Expert Committee on Specifications for Pharmaceutical Preparations Thirty-fourth report (200 pages)	35.–
864	(1996) Evaluation of certain veterinary drug residues in food Forty-fifth report of the Joint FAO/WHO Expert Committee on Food Additives (66 pages)	12.–
865	(1996) Control of hereditary diseases Report of a WHO Scientific Group (89 pages)	16.–
866	(1996) Research on the menopause in the 1990s Report of a WHO Scientific Group (114 pages)	20.–
867	(1997) The use of essential drugs Seventh report of the WHO Expert Committee (80 pages)	15.–
868	(1997) Evaluation of certain food additives and contaminants Forty-sixth report of the Joint FAO/WHO Expert Committee on Food Additives (77 pages)	14.–
869	(1997) Improving the performance of health centres in district health systems Report of a WHO Study Group (70 pages)	14.–
870	(1997) Promoting health through schools Report of a WHO Expert Committee on Comprehensive School Health Education and Promotion (99 pages)	20.–