SAFE MOTHERHOOD

Studying unsafe abortion: a practical guide

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SAFE MOTHERHOOD UNIT
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GENEVA

Practical Guide

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ORGANIZATION OF THIS DOCUMENT

Chapter 1 of this document provides the reader with an introduction to the steps needed to conduct research on unsafe abortion.

Chapter 2 provides information about data collection, management, and analysis, including a description of the basic research tools necessary to conduct research.

Chapters 3 and 4 provide literature sources, examples, and various suggestions for conducting local-level, hospital, and community studies on the problem of unsafe abortion.

A glossary provides detailed definitions of all words and terms highlighted in bold print in the text.

In the annexes readers will find: a list of essential interventions to prevent and manage abortion at different levels of the health care system(Annex 1); the WHO criteria for categorizing induced abortion (Annex 2); issues to consider when developing indicators of performance for health services (Annex 3); and a list of questions that might be asked of patients (Annex 4).

Each chapter is referenced with suggested readings that can provide researchers with more detailed information about past studies and more technical aspects of data collection, management and analysis. A complete bibliography concludes the document.

Chapter 1

Introduction

1.1 Purpose of this document

As part of an effort to provide responsive and comprehensive **reproductive health** services, an important question must be asked: Is there a problem of **unsafe abortion**[1]? If there is, policy-makers, programme managers, and health-care professionals have an obligation to follow up with the question: What can be done to address this problem? Providing answers can lead to initiatives that reduce the **incidence** of unsafe abortion, while improving women's overall health, and promoting safe motherhood.

In many countries, whether or not to provide legal, **induced abortion** on request or for specified indications is a contentious issue. Countries with legal restrictions or limited access to safe reproductive health services must look beyond the cultural and/or religious debate associated with induced abortion to the public health issues associated with unsafe abortion. Wherever safe abortion is severely restricted, policy-makers and public health officials and providers should assume that there will be high levels of maternal morbidity and mortality. Even where legal abortion or menstrual regulation is allowed, unsafe abortion may be a problem. A quick check of the casualty and female wards in major public hospitals can confirm whether unsafe abortion is a public health problem. However, in most cases, the number of women who report to a hospital or clinic with abortion complications represent only a fraction of the uncounted total number of those who seek to terminate their pregnancy, or experience **spontaneous abortion**.

The purpose of this document is to guide those who have an interest in **research** studies that will provide a more complete understanding of the problems of unsafe abortion, and in developing practical, humane responses to these problems. This may seem to be an impossibly large undertaking, even for the most dedicated health professional with an interest in women's reproductive health. The design and implementation of large-scale, population-based studies, together with the analysis and dissemination of results is usually considered a complex, time-consuming, expensive and specialized field. The problem of unsafe abortion, however, is often better studied through relatively simple, small-scale research studies. Modest interventions can be implemented, and those with successful outcomes can be expanded into community or even national programmes. This document provides examples of research initiatives and explanations of the tools necessary to implement hospital and community service interventions.

[1] Independent of prevailing legislation, an unsafe abortion is defined by the WHO as "... a procedure for terminating unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both" (WHO, 1993) which therefore exposes the women to an increased risk of morbidity and mortality.

Those with little or no research training will find this document useful, as will social scientists who may not have conducted research on the question of unsafe abortion. Throughout the document, the term "**researcher**" refers to whomever is conducting the research activity under discussion. While acknowledging the benefits of social-science training and experience in data collection to the quality of research results, the researcher referred to in this document may be a medical scientist, an obstetrician/gynaecologist, a nurse/midwife, programme manager, or some other appropriate person with the ability to complete satisfactorily the work and apply the results to reproductive health policies and programmes regardless of previous research training.

This document does not attempt to provide all of the information that is required to carry out large-scale **epidemiologic** or **demographic** research. Such information is available through other resources. Nevertheless, the style of research explained in this document can be conducted together with epidemiologic or demographic research to arrive at an understanding of unsafe abortion in the broadest context.

This document guides the researcher to conduct practical, small-scale, local-level studies, since the problem of unsafe abortion can be most effectively addressed at this level. This usually means focusing on the district or provincial hospital where most abortion care is provided but study sites may also include sites such as a school, church, or local factory or business. Well planned and well conducted local-level research efforts often lead to an immediate positive impact on the health of women at risk for the damaging consequences of unsafe abortion a result that is not often tied directly to national studies. The cumulative effects of lessons learned from local-level research can be used to construct effective large-scale regional or national interventions.

1.2 Background

In 1967 the World Health Assembly recognized unsafe abortion as a serious health problem.[2] However, at that time only limited information was available on the extent of the problem.[3] A number of research initiatives were undertaken after 1967 (see David [ed.] 1974), but most ended or were discontinued during the 1980s a decade marked by the cutting of abortion research funds, censorship of abortion topics, and other efforts to stop or slow down research and action on the issue of abortion (Coeytaux 1988).

[2] The World Health Assembly Resolution WHA 20.41 stated: "Recognizing that abortion constituted a serious public health problem in many countries, urged WHO to assist member states, upon their request, in the development of family-planning services within the basic health services".

[3] Figà-Talamanca I. *A guidebook for conducting studies on unsafe induced abortion*. Unpublished manuscript.

International awareness of abortion increased following the 1987 Safe Motherhood Conference in Nairobi that drew attention to the need to reduce maternal mortality and morbidity. As a result, a number of researchers began to collect and make available **data** on the causes of maternal mortality. The known dimensions of the problem of unsafe abortion are documented in the 1994 second edition of *Abortion: A Tabulation of Available Data on the Frequency and Mortality of Unsafe Abortion*. Worldwide, an estimated 20 million unsafe abortions take place each year, a ratio of one unsafe abortion to every seven births. Many women suffer chronic and often irreversible health problems as a result of complications from unsafe abortion. Globally, an estimated 13% of pregnancy-related deaths or one in eight are due to unsafe abortion.[4] Nearly 90% of unsafe abortions take place in the developing world.[5] In many developing countries as many as one in every four maternal deaths is caused by unsafe abortion. In the words of the WHO Maternal and Newborn Health/Safe Motherhood unit, "The tragedy is all the greater because abortion-related deaths are entirely preventable".

In recent times, many countries have liberalized their abortion laws. By 1990, it was estimated that 75% of the world's population lived in countries where induced abortion is permitted on medical or on broader social and economic grounds; however, many women still resort to abortions performed by unskilled providers or in unsafe conditions[6] as a result of barriers that impede access to safe abortion. Such barriers include lack of information, distance, economic constraints, and lack of confidentiality. In a number of countries, access to safe, legal induced abortion is either completely prohibited, allowed only to save the woman's life, or permitted only when the pregnancy is the result of rape or incest. Globally, 25% of the world's population live in countries with very restrictive abortion laws where women lack access to safe abortion services.[7] Most of these women live in Asia, Africa, and Latin America.

In many developing countries, confronting the problem of unsafe abortion has been a low priority for country health planners. Little is known about the short-term and long-term health consequences. Controversies have often led authorities to deny the existence of the problem and to adopt a policy of neglect. Poor abortion-related care is easy to perpetuate where abortion is a forbidden, secretive, or controversial topic. Breaking the cycle of abortion neglect, silence and denial is never easy, and attempting to provide useful research results with little or no funding in hostile settings is especially difficult.

Because unsafe abortion is a medical, health-system and social problem, it requires the combined approaches of bio-medical, health-system and social-science research methodologies. The approach used in each setting must be designed specifically to fit particular social, cultural, economic, political and epidemiological conditions. For example, attempts to collect quantifiable data from women seeking care for complications of unsafe abortion may fail because women are reluctant to discuss their experiences

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[4] World Health Organization. *Abortion: a tabulation of available data on the frequency and mortality of unsafe abortion,* 2nd. edition. WHO/FHE/MSM/93.13. Geneva, 1994.

[5] World Health Organization. *Complications of abortion: technical and managerial guidelines for prevention and treatment*. Geneva, 1995.

[6] Henshaw SK, Morrow E. Induced Abortion: A world review , The Alan Guttmacher Institute, New York, 1990.

[7] Henshaw SK. Induced abortion: a world review. *Family Planning Perspectives* 1990; 22(2).

for fear of negative personal, social, legal, and even medical consequences. In some areas with liberal abortion laws, women, providers and the community may discuss abortion openly, which facilitates research and affects the questions asked. However, even when abortions are legally available for broad indications, there will be instances where secrecy and reluctance to discuss abortion will be encountered.

Despite these and other complexities, today more than ever before there is a strong mandate from the international community to address the public health issue of unsafe abortion. Early in 1994, the *Advances in Abortion Care*[8] series published an issue focused on diminishing the negative impact of unsafe abortion by improving **postabortion care**. In that same year, several organizations joined the Postabortion Care Consortium[9] to encourage work in this area. Three key elements of postabortion care were proposed:

> emergency treatment services for complications of spontaneous abortion or unsafely induced abortion;
>
> postabortion family-planning services (including counselling and contraceptive method delivery);
>
> links between emergency abortion treatment services and comprehensive **reproductive health care**.[10]

Delegates to the United Nations International Conference on Population and Development in Cairo (1994) and the Fourth World Conference on Women in Beijing (1995) adopted resolutions such as paragraph 8.25 of the 1994 International Conference on Population and Development Programme of Action which states:

> *All Governments and relevant intergovernmental and non-governmental organizations are urged to strengthen their commitment to women's health, to deal with the health impact of unsafe abortion as a major public health concern and to reduce the recourse to abortion through expanded and improved family-planning services.*

Both conferences confirmed the importance of improving care for women who suffer complications of unsafe abortion as an element of reproductive health. The Beijing platform of action further affirmed that:

> *Since unsafe abortion is a major threat to the health and life of women, research to understand and better address the determinants and consequences of induced abortion, including its effects on subsequent fertility, reproductive and mental health and contraceptive practice, should be promoted, as well as research on treatment of complications of abortions and postabortion care.*

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[8] *Advances in abortion care.* Publication available from IPAS, 303 E. Main St., PO Box 100, Carrboro, NC 27510, USA

[9] Founding agencies: AVSC International, IPAS, IPPF, JHPIEGO and Pathfinder International

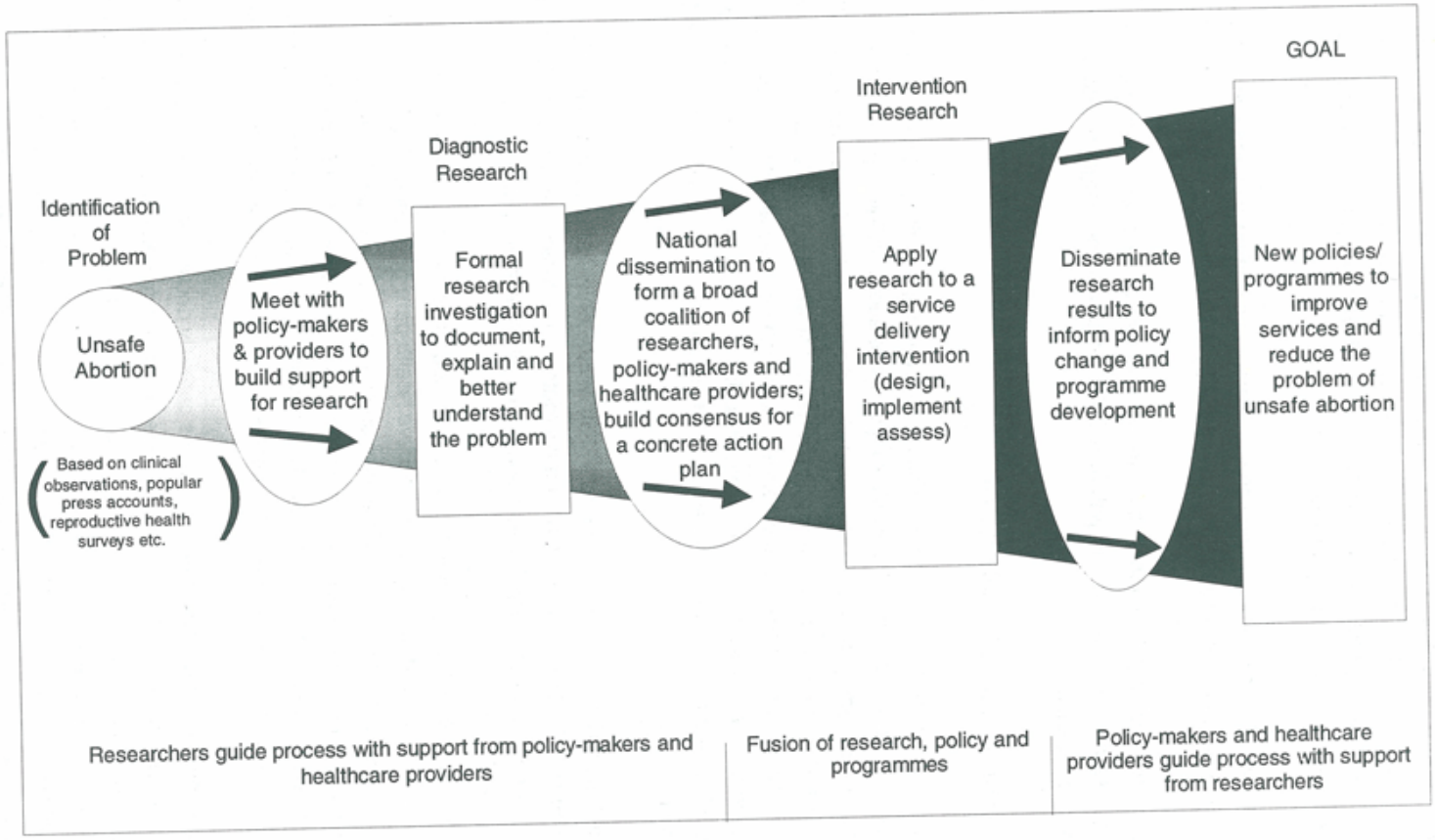
[10] Greenslade FC, *et al.* Postabortion care: a women's health initiative to combat unsafe abortion. *Advances in Abortion Care*, 1994; 4(1).

1.3 Three key steps in the research process

Research on unsafe abortion involves three important steps (see Figure 1.1 for elaboration):

Step One, assessing the local context of unsafe abortion, may or may not require a formalized study. The local context of unsafe abortion includes details or characteristics of the phenomenon that are specific to the research site (a specific hospital or community). Any

Figure 1.1
The Process of Conducting Operations Research on Unsafe Abortion



service-delivery or community intervention should be designed or modified to appropriately address the specific needs of the study site. Investigators conducting research in their own hospital/community may already be very familiar with the local context of abortion and abortion services, and therefore only need to check service-delivery data or other locally available information to confirm their personal knowledge of the problem. Some investigators, however, will need to investigate the context more thoroughly before proceeding with the design of service-delivery/community interventions.

Step Two, designing and testing service-delivery or community interventions is a direct outcome of step one and minimally requires a systematic data-collection process.

Step Three, linking research findings to policy and practice, is an ongoing process that should begin during step one and end with broad dissemination and programmatic application of the research results.

Assessing the local context of unsafe abortion

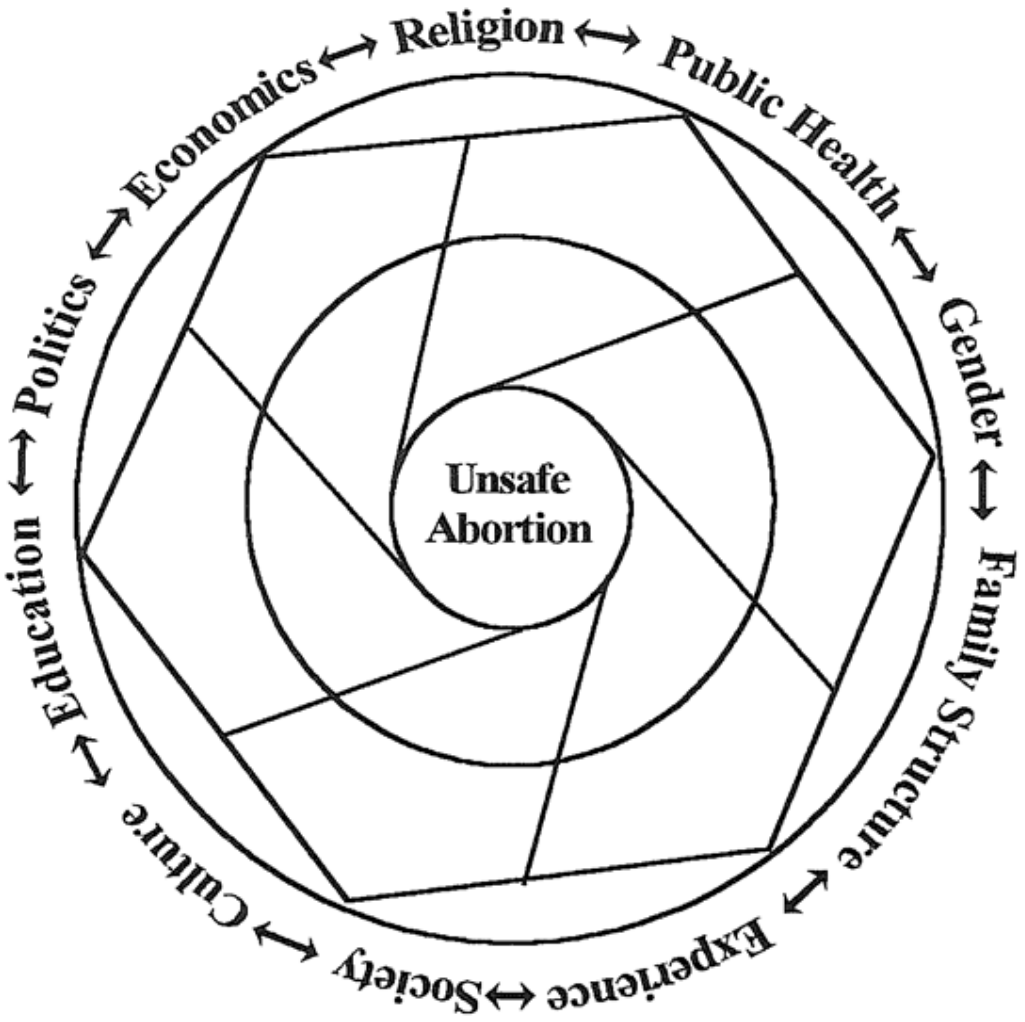
The research process must begin with a sufficient understanding of the problem of unsafe abortion from a local perspective. Issues of local culture, gender relations, religion, politics, the law, economics, and public health (including traditional medicine) should be considered (see Annex 3 and Figure 1.2). In addition, data should be collected and coded in ways that will help in understanding the extent to which unsafe abortion and access to abortion-related health services affects specific groups of women (race, age, language, ethnicity, culture, religion, disability, or indigenous refugee/immigrant status). A well-developed understanding of the context of abortion will help investigators design well-focused research questions.

Some researchers will have a deeper understanding of the context of unsafe abortion than others; however, some systematic collection of information/data on the topics that influence local perspectives is beneficial if not essential to designing appropriate hospital/community interventions.

During the process of developing understanding of the local context, it is important to generate support from influential community leaders and reproductive health-care providers. The broader and more influential one's base of support, the more likely a community or health-service intervention will be supported by the community-at-large. In some areas, multi-disciplinary teams can be convened, consisting of providers, managers, social scientists, psychologists, anthropologists and others. Their input could prove to be valuable for hospital-based studies as well as community-based research.

Assessing perspectives on unsafe abortion involves carefully documenting views of the problem as well as ideas for possible solutions. There may be value in bringing together leaders of groups and individuals representing diverse points-of-view to focus on their perspectives, and ascertain where there is consensus. If an intervention has thoughtful local input, it is more likely to meet the needs of the community and thus gain support. There are a number of ways health system and/or community input can be achieved. Specific data-collection techniques are described in detail in Chapter 2, section 2.4.

Figure 1.2
The Context of Unsafe Abortion



Designing and testing service-delivery and community interventions using the local context as a foundation

Ultimately, comprehensive solutions to the problem of unsafe abortion require confronting broad social issues such as poverty, abortion laws, and public knowledge and attitudes about sexual and reproductive health Many improvements can, however, be made on a small scale by implementing simple, practical service-delivery interventions, such as offering postabortion family-planning services to women treated for abortion complications. Practical community interventions might include sex-education programmes conducted in secondary schools, public-service campaigns about avoiding

unwanted pregnancies, activities designed to increase the power of women to make decisions about reproductive health and sexuality, abolishing policies and practices that result in unequal access to health services for all women, and other sexual and reproductive health programmes.

Once in place, interventions should be monitored and their outcomes assessed. An intervention may be planned for health-care facilities or other community institutions, such as schools, churches, factories, or other places of business.

Hospital interventions may include:

changes in patient management to decrease waiting times and reduce congested areas of the hospital such as the operating theatre;

changing provider attitudes to increase the quality of patient care; introducing a safer, more efficient and less costly technique such as **manual vacuum aspiration** for treating abortion complications; and

placing contraceptives on hospital wards and training nursing staff to counsel patients and distribute contraceptive methods after treatment; or changing obstetric/ gynaecological fee structures.

Community interventions may include:

adolescent counselling programmes in secondary schools; raising public awareness about **unwanted pregnancy** and the spread of **sexually transmitted infections** (STIs) in local bars, factories, or other businesses;

working with church groups to get local parishioners to be more understanding and supportive of women and adolescent girls who have unwanted pregnancies or abortion complications;

working with community groups to increase women's decision-making power within the family and community; and offering education or health outreach services to under-served populations.

Linking the research findings to policy and practice

It is most important for a researcher to formulate questions about the end result of research beginning during the assessment phase. How will the research findings help specifically to improve women's access to high-quality services? How will the findings affect health-care providers' attitudes towards women with abortion complications? Can research findings help develop services that women will use? Most abortion-related research should provide data that promote understanding of the problem of unsafe abortion and that can be used to inform policy change and improve the delivery of health-care system/community services. To link research to policy change and improved service delivery, it is very important to involve key policy-makers and health-service providers in the research process from beginning to end. The research process should not only produce high-quality information about the problem of unsafe abortion, but should also motivate policy-makers and health-care providers to responsibly apply the findings to improve public health.

One of the best ways to link research to policy and practice is through the dissemination process. Project dissemination can be as simple as submitting a brief report of research findings to the Ministry of Health and the hospital superintendent/director; however, more effective dissemination may involve provider and policy-maker workshops/seminars, community seminars, and even national conferences to develop a broad base of understanding and support. Research with regional and international implications should be submitted to regional/international research journals.

1.4 Commonly overlooked issues related to unsafe abortion

Until recently, most research on unsafe abortion has focused on policies or services that are designed to meet the needs of so-called "typical" patients treated for abortion complications (this usually means "married women"). Very few studies and even fewer interventions have addressed the problems and needs of adolescents and young adults. Male (adult or adolescent) roles and perspectives related to unwanted pregnancy and unsafe abortion have also been overlooked. Little research has dealt specifically with the links between violence against women, coercive sex, and forced pregnancy and abortion. Other reproductive health issues that may coincide with or affect the outcomes of unwanted pregnancy and unsafe abortion are often ignored, such as: **reproductive tract infections** (RTIs) including **HIV/AIDS** and other STIs; poverty and women's lack of access to financial resources; the cost impact of unsafe abortion; and the need for postabortion contraception.

1.5 Ethical concerns

When planning any research, the ethical issues and outcomes of the study must be considered. In most cases, studying the subject of unsafe abortion requires exceptional sensitivity to the need for privacy, **confidentiality**, and **informed consent**. Clearly, research protocols that harm, deceive, threaten, coerce, or otherwise violate basic human rights are unacceptable.

The World Health Organization has established criteria for categorizing whether a presenting abortion complication is the result of a spontaneous or induced abortion (see Annex 2). However, studies conducted in countries with legal restrictions on abortion that attempt to differentiate between patients who have induced an abortion and those who have not are ethically questionable. Such differentiation

may put the subjects of study at some risk of prosecution, social retribution, or ostracism. Researchers must be able to show a link to improved health and safer clinical care to justify attempts to categorize women with induced abortion. If categorization is justifiable, the researcher must ensure **anonymity** to all participants.

Privacy and confidentiality

Maintaining privacy and confidentiality is always among the first concerns when conducting research, and is especially important on a sensitive topic such as unsafe abortion. Interviews should never be conducted in a place where questions and responses might be overheard. **Data collectors** must maintain respondent confidentiality at all times. Anonymity should be maintained whenever possible, and may be especially important when the researchers are themselves from the local community. Anonymous information might be collected through questionnaires that participants complete without names attached. Information collected through interviews or observations can be made anonymous by permanently removing names and other identifying information from the data in order to ensure that names of participants cannot in any circumstances appear in research reports.

Informed consent

Researchers must in all situations protect the right of individuals to decide whether to participate in a research study and how extensive their participation will be. For example, it is unethical to tape-record discussions with doctors or patients without the informed consent of all parties. People asked to participate in a research study must be provided with enough information about the study to make an informed decision regarding their participation. Typically an informed consent statement is read to each participant, who agrees either verbally or in writing to participate in the study. It is also appropriate to give each participant a written copy of the informed consent statement if requested. The informed consent statement should describe the general purpose of the research and the name of the sponsor; it should state that participation is voluntary and may be withdrawn at any time; and it should provide an explanation of any possible risks and benefits of participation. People who cannot give informed consent (e.g., patients who are heavily medicated or under severe psychological distress) should not be included.

Preface for Chapter 2

Conducting research involves the systematic examination of an issue or problem. Experienced researchers often follow general conventions or **models** for the collection of data. Some models are more complex than others, depending upon how precisely a researcher wants to describe and/or explain a particular issue or problem.

New researchers with little or no formal research training should not be discouraged by what may appear to be complicated **study designs** or statistical terms and computations described in Chapter 2. All researchers should bear in mind that when conducting studies on unsafe abortion, the process of study design and data collection is as important as the impending results.

Given a choice, researchers should opt for simpler rather than more complex study designs; however, it is very important to be able to assess the costs and benefits of implementing the chosen study design and move forward only after developing consensus with those who will be instrumental in applying the results of the research. When in doubt, the risk of a flawed research study can usually be avoided by deferring some or all responsibility for study design to more experienced researchers or those who will use the results.

Chapter 2

Conducting Research

2.1 Introduction

Research studies can take many forms, from systematic content reviews of newspaper articles to in-depth interviews with physicians. Most studies on unsafe abortion will involve gathering information from people (e.g., interviews) or from health facility records (e.g., review of logbooks); however, there are many other potential data sources available. Before beginning the research study, it is important to consider which data source or sources will best provide the information needed to answer the research questions. Each source has advantages and disadvantages, and will provide information from different perspectives. While it is virtually impossible to compile an exhaustive list of data sources, examples of sources for information on topics related to unsafe abortion are presented in Table 2.1.

To an experienced doctor, ward nurse, or district nursing officer, the problem of unsafe abortion may seem so obvious in their hospital or community setting that they would not plan for the time nor budget for the expense of a comprehensive **diagnostic study**. However, even experienced researchers should document the need for an intervention through available patient data, service-delivery statistics, or other information available in the community in addition to a report of their own experience and observations. Often, hospital administrators or community leaders will require some form of objective documentation prior to granting their approval of a study. The WHO database on unsafe abortion (WHO document WHO/FHE/MSM/93.13) provides numbers that may be helpful to compare the local situation to what is known about abortion in a particular country or region. When there is consensus among health-care providers or community members that a problem exists, and there is a mutual understanding of the context, then the problem can be addressed directly through **intervention research**. Intervention research (also called **operations research**) involves the design, implementation, and assessment of an intervention (new programme, service, or approach) that will address a particular problem. The intervention may be considered successful if it diminishes the problem in a way that is relatively easy to accomplish at an affordable cost.

Qualitative research is particularly valuable with unsafe abortion, due to the sensitive and often clandestine nature of abortion. **Qualitative** data provide explanations as well as descriptions of questions that do not necessarily have predictable answers, such as "Why?" and "How?" (e.g. "Why did you have this abortion? "I had the abortion because, before we had sex my boyfriend told me that he loved me and wanted to marry me, but when he found out I was pregnant he ran away. I have no money to feed a child and I will be kicked out of school if they find out that I have fallen pregnant."). **Quantitative** data provide descriptions of phenomena that have logical (yes/no), numerical, or other codable answers to questions such as: "Who?", "Where?", "What?", and "How many?". Quantitative data are easy to code for analysis through numerical assignment (e.g. "yes" = 1, "no" = 2; "rural" = 1, "urban" = 2, "don't know" = 3; "mother" = 1, "father" = 2, "brother" = 3, "sister" = 4, etc.) or numerical description (e.g. "I have 7 children"; "I have had 2 previous abortions"; "I am 35 years old"). Often the term "quantitative" implies that the data are generated from a sample that is representative of a particular population (see section on sampling techniques) on which statistical analysis will be conducted. Opinion-based data can also

be number-coded for analysis by using a **Likert** scale. (e.g. strongly disagree = -2; disagree = -1; neutral = 0; agree = 1; strongly agree = 2.)

Once the need for an intervention is established and all of the required permissions granted, specific research questions must be focused, a study design must be selected, and a data collection plan must be implemented. It is helpful (and may be required for official approval) to write out the design of the study. This includes stating clearly:

> the specific objectives of the study, including the research questions you want to answer through the study;
>
> what the researcher wants to predict or explain (the **dependent variables**) and the potential causes of these phenomena (the **independent variables**).
>
> exactly how the researcher will go about answering the research question(s) and meeting the study objectives.
>
> how the researcher plans to link the results of the study to policy change and improved practices (which usually includes a dissemination plan).

This chapter is designed to help researchers select a study design, draw a sample, choose research methods, manage and analyse data, and finally to disseminate results. Only the basics of these subjects most relevant to abortion-related research are presented here. Indeed, whole books are devoted to the technical components of data collection and analysis. Depending upon the complexity of data collection, the intensity of analysis, the requirements of policy-makers, and the sum total of project funds and other resources, researchers should consider consulting other sources such as persons knowledgeable in biostatistics or reproductive health research, biostatistical books (e.g., Daniel 1994; Kahn and Sempos 1989; Zar 1996) and/or various computer software e.g., EpiInfo, Ethograph) that can provide in-depth description and explanation of the technical aspects of data collection and analysis.

Table 2.1
Sources of Information on Topics Related to Unsafe Abortion

Media
- newspaper articles
- magazine articles
- speeches
- advertisements/promotions

Government/non-government agencies
- administrative regulations
- training policies and protocols
- service delivery policies
- education policies
- testing policies
- reporting policies/protocols
- supply system protocols
- Ministry of Health statistics
- morbidity/mortality statistics (e.g., death register)

Health facilities

- patient charts/cards
- ward logbooks/registers
- inventory logs
- staff training records
- patient observations/interviews
- staff observations/interviews

Informant interviews/focus groups

- typical women in the community
- doctors, midwives, nurses
- hospital administrators
- pharmacists/chemical distributors
- health educators
- teachers
- policy-makers/government officials
- representatives of NGO, multi- and bi-lateral agencies
- members of women's groups
- family-planning service clients
- abortion patients
- spouses/family members of patients
- teenagers
- school classes or clubs
- clergy
- influential community members

2.2 Developing the research question

The first task for any research project is to decide exactly what *questions* the project will attempt to answer. Research questions must be focused, based on the local context, and answerable given the allotted funds and available research capacity. Research questions should be developed in collaboration with people who will benefit from the research, those who will implement hospital/ community interventions, and those who will be charged with linking the research results to broader reproductive health policies and practice. The diagnostic phase of the research process (assessing the local context) is the appropriate time to develop consensus about the research questions as well as the process that researchers will undertake to answer them.

All aspects of the research project should be considered when delineating the research questions. Some people may find it easier to consider the project from its anticipated end back to its beginning. This "end to beginning" approach would include consideration of:

what results are likely to most influence people who can bring about positive change (e.g. hospital administrators, school or other community leaders, or national Ministry of Health policy-makers)?

what is the best way to disseminate the findings?

what analysis will be appropriate to achieve a compelling outcome?

what data will it be necessary to collect in order to conduct such analysis?

what sample size and **research design** will be required to achieve results that will be statistically sound?

Research questions usually focus on the interactions of two or more **variables**. Variables are phenomena that change depending upon their relationship to one another as well as their relationship to other variables, such as time, place, politics, economics, culture, social conditions, knowledge, experience, health and community support. The answers to any research question involve **hypotheses** about the relationships between or among two, three or even more variables. A hypothesis is a statement about the *expected* relationship between or among variables. The goal of many research projects is to document how much change takes place as a result of the interaction between two or more variables. Statisticians have a system of calculation for determining how much of the change is a result of the relationship between the variables, and not the result of chance. This calculation produces a number value that represents how **significant** the change appears to be. Usually, for a difference to be statistically significant (that is, not a likely outcome of chance), it must have a probability of occurrence that is at least .95 or 95%. It is recommended that researchers use software that can make this calculation; however, if such software is not available it is still possible to conduct meaningful research. For example:

The research question:
How effective will a particular postabortion family-planning intervention be at Hospital A?

Study sites:
Intervention (experimental) site: Hospital A
Non-intervention (control) site: Hospital B

Sample size:
Hospital A: 1000 women
Hospital B: 1000 women

Dependent variable:
The rate of contraceptive acceptance following treatment for incomplete abortion.

Independent variable:
Receipt or non-receipt of the postabortion family-planning counselling intervention.

Hypothesis:
Women in Hospital A who receive family-planning counselling prior to discharge for treatment of abortion complications are more likely to accept a contraceptive method than women at Hospital B where there is no postabortion family-planning counselling.

Outcome:

Women treated at Hospital A who receive postabortion family-planning services are five times more likely to leave the hospital with a modern contraceptive method than women treated at Hospital B (e.g. 50% method acceptance at Hospital A; 10% acceptance at Hospital B). Although this outcome appears impressive, the researcher may be required to demonstrate that the difference between hospital site A and B was statistically significant (that is: not largely due to chance). If the data are submitted to statistical tests for significance, the researcher needs to take into account that the resulting level of probability must be 95% (.95) or better in order to be considered of high quality. Anything less than 90% (.90) probability should be considered unacceptable proof of change due to the intervention.

2.3 Study designs

Study designs are models for data collection that facilitate exploration, description, and explanation of the phenomena in question. Different study designs can be used to address different questions with different degrees of certainty. Researchers can choose from a range of study designs depending upon their research questions, timeframe, and budget.[11] When making decisions about study design, researchers must carefully balance their needs for exploration, description, and explanation, as well as representation, comparability, data quality and quantity, administrator/policy-maker demands, and financial resources.

All research designs should meet the following criteria:

They should be simple, that is, they should have clear protocols and not attempt to measure/assess too much;

They should be **reliable**, that is, other researchers should be able to repeat the study and obtain the same result;

They should be **valid**, that is, the research methods should produce reliable results that are true and accurate.

The point where a study begins depends upon the knowledge and especially the experience of the researcher. If little is known about the local context of unsafe abortion or indeed about the subject of unsafe abortion in general, it will be necessary to begin with exploratory research before proceeding to more descriptive and/or explanatory studies. (see Singleton, *et al.* 1993) For example, the researcher

[11] For a more detailed explanation of research design and methodological issues see: World Health Organization. *Abortion: a tabulation of available data on the frequency and mortality of unsafe abortion*. Second Edition. WHO/FHE/MSM/93.13. Geneva, 1994. Singleton RA, *et al.* Approaches to social research. New York: Oxford University Press, 1993. Fisher AA et al. *Handbook for family planning operations research design*. New York: The Population Council. Second Edition, 1991. Janecsick VJ. The dance of qualitative research design: metaphor, methodolatry, and meaning. In: *Handbook of qualitative research*. NK Denzin, YS Lincoln, eds. pp. 209-19. Thousand Oaks, California: Sage Publications, 1994. Barreto T, *et al*. Investigating induced abortion in developing countries: methods and problems. *Studies in Family Planning* 1992; 23(3): 159-170.Huntington D, *et al*. A new approach to eliciting information about induced abortion. *Studies in Family Planning* 1993; 24(2):120-124. Pelto PJ. *Anthropological research: The structure of inquiry*. Cambridge, MA: Cambridge University Press, 1978. Simmons R, Elias C. *The study of client-provider interactions: A review of methodological issues*. New York: The Population Council Working Papers. No. 7, 1993.

may want to assess postabortion care at the provincial hospital, go to a local high school in order to better understand the process of counselling adolescents about sexuality and reproduction, or visit health centres serving special populations. After becoming familiar with the local context it is much easier to develop a study that will help describe and explain phenomena related to unsafe abortion or to test interventions that are designed to address a particular problem.

Descriptive research allows the researcher to describe a situation, group, or community in great detail through a process of systematic data collection. Descriptive research is different from exploratory research in that it is much more focused on a particular issue or problem. (*op. cit.*, 1993)

Explanatory research allows researchers to go one step beyond simple description of independent phenomena to a full examination (including description and explanation) of the cause of, and relationships among, different phenomena.(*op. cit.*, 1993)

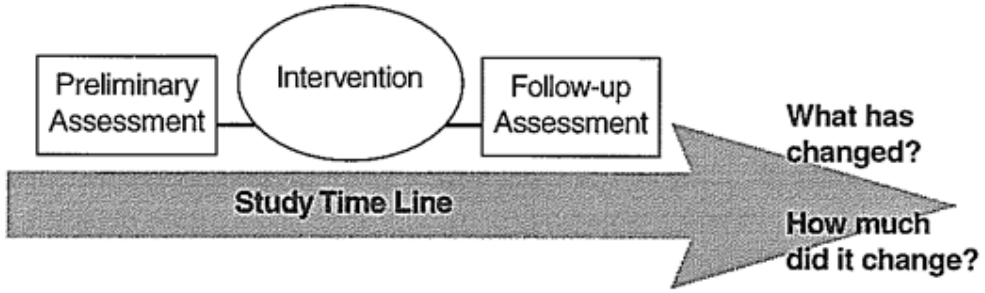
If it is desirable to implement and test an intervention, researchers may choose an **experimental research design**. Experimental designs allow researchers to introduce change (e.g., implement a postabortion family-planning intervention, a new school counselling programme or extend services to an under-served population) and to qualitatively assess and/or quantitatively measure its effect. A **true experimental design** would employ **random assignment** of subjects and eliminate all potential sources of unwanted variation and **bias** (a procedure known as "experimental control"). It is not practical to conduct a study on unsafe abortion using a true experimental design because it would require controlling for all the factors that affect women's decisions, and health-care needs that may arise. Also, it is difficult and ethically questionable to differentiate women who have had unsafe abortion from those with spontaneous abortion. Finally, many women treated for complications of unsafe abortion may not agree to participate in a research study, and this factor would introduce bias into the study.

In general, true experimental design is more appropriate to studies that can be precisely controlled. **Non-experimental** and **quasi-experimental research designs** are much more practical and affordable to implement.

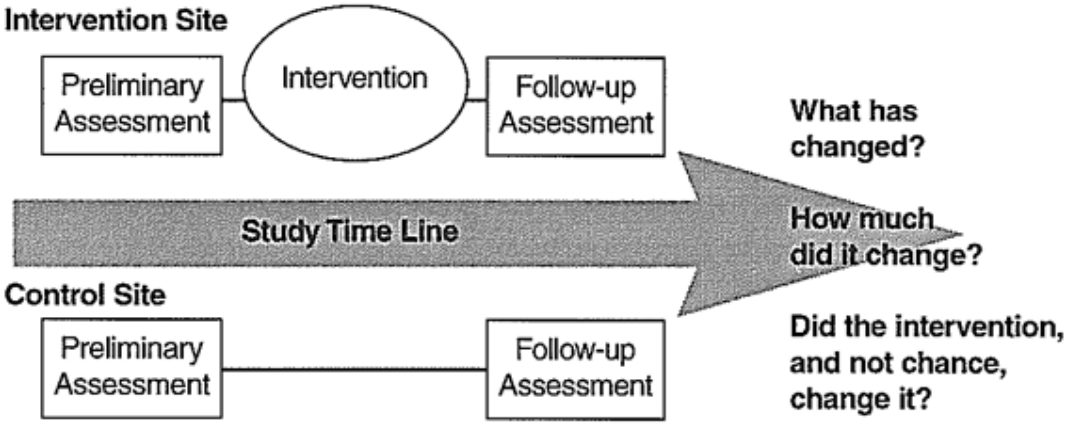
> The simplest design would examine the effect of an intervention in one setting or among one group of subjects with assessments made both before and after the intervention (pretest and posttest). This design, often referred to as a single-group pretest-posttest design might be used at sites where, for example, women receive the same postabortion care in a hospital, or students take the same type of sexual/reproductive education class in a **community study**. For either case, a survey of knowledge and attitudes might be taken before and after refinements are made in hospital treatment or classroom instruction.
>
> A higher level study would incorporate a pretest and posttest design as above but also add a similar (but not equivalent) **control site**. This is known as nonequivalent control site design This means two similar sites would be chosen for study. An intervention would be implemented in one but not in the other. A **pretest** will allow researchers to assess the similarity between the two groups and a posttest (or follow-up as the case

may be) should demonstrate any change that may result from the intervention. Figure 2.1 illustrates the differences in these two study designs.

Figure 2.1
Single-Group
Pretest—Posttest Design



Non-equivalent Control Group Design



Choosing a study population

The size and choice of the study population and setting depends on the size of the total population, the requirements of the data analysis, the study objectives, the feasibility of contacting appropriate **subjects** (interviewees and other **informants**), the ability of the research team to establish rapport with the subjects, and on the resources (human and financial) available for data collection activities. The persons studied should be as representative as possible of the population or population sub-group under study and who will benefit from the intervention. Subjects can be chosen from diverse contexts depending on the research question. They may include: women treated for abortion complications, their partners, health-care providers, hospital administrators, government policy-makers, leaders and members of women's groups, traditional healers, legal and health activists, female and male secondary-school students, teachers, professionals, business people, religious groups, or family-planning personnel, among others.

Time-frame

Researchers must decide on the time-frame for collecting data on unsafe abortion. Data can be obtained either retrospectively or prospectively. **Retrospective data** collection involves asking about *past* experiences or reviewing previously completed records, and is usually **cross-sectional**; that is: done at a specific point in time. **Prospective data** collection is usually **longitudinal**; that is: data collection takes place at two or more points in time and may involve following-up subjects to see how experiences, practices, services, attitudes, or behaviours change over time. Another example of prospective data collection is assessing attitudes of providers, women, or the community about health care before and after implementation of a service-delivery intervention. Usually, prospective data collection is preferable to retrospective data collection, because it allows researchers to assess change and is not governed by the subjects' ability to recall past events; however, prospective data collection is more costly and time-consuming. Where a large body of records spanning a period of time is available, as in the case with induced abortion in some areas, retrospective data collection may yield interesting trends in the use of services over time.

Sampling techniques

Most studies on unsafe abortion incorporate **non-probability** (also called **convenience**) **samples**. With non-probability samples, researchers usually collect and study data until answers to the same types of questions are repeated regularly enough to provide a fair degree of confidence that a wide range (if not all) potential responses have been covered. One important point to stress is that research on a non-probability sample cannot be generalized beyond that particular sample.

Hospitalized women, health-care providers who treat unsafe abortion or community women who have experienced abortion are often selected for studies through non-probability sampling because it is common for potential subjects to say "no" to invitations to participate in such studies. Unwillingness to talk about abortion makes it difficult to obtain a large, randomly selected sample. There also may be a high proportion of invalid responses (i.e., untruthful responses) among those who do agree to participate (see Bleek 1987). Three variations of non-probability sampling may be useful in the study of unsafe abortion:

> **Purposive sampling** is a type of non-probability sampling that has been used in several studies of induced abortion (Lee, 1969; Figà-Talamanca, 1974). In purposive sampling, the researcher selects a mix of types of individuals" (e.g., women with commonly-seen characteristics, such as married women with one or more children, some single, adolescent schoolgirls, and a few prostitutes).
>
> **Temporal sampling** calls for interviewing all willing respondents over a pre-determined period of time (e.g., a two-week period). This sampling design assumes that the respondents are similar or that the range of respondents would be seen over the sampling time period.
>
> **Snowball sampling** may be useful in community research. This technique begins with a few key informants who then refer the interviewer to other possible respondents such as friends, family members, or co-workers. This method relies heavily on the good will and trust

established between respondents and interviewers, and is a good way to get broad coverage of a particular subgroup.

The way in which researchers determine the sample for example, who will be interviewed, affects the quality of the data. One important distinction in samples is whether a **probability sample** (respondents chosen at random to represent a larger population) or a non-probability sample is used. Research conducted through a probability sample (sometimes referred to as a **population sample**) is statistically representative of the broader population from which the sample was selected because the respondents are chosen at random. A sample is **stratified** if it is chosen from a particular subgroup, such as women of reproductive age. A more narrowly stratified sample would be women in hospital with abortion complications. With probability sampling, each member of the population has a predetermined chance of being selected for the sample.

Determining an ideal sample size for a probability sample depends on several things, such as:

the total population size;

requirements for particular types of statistical analysis;

the degree of accuracy required in a study,

the funds available to sample.

Statistical computer packages or mathematical formulas can be used to determine sample size. Researchers should consult a knowledgeable person if they are inexperienced in biostatistics.

Probability sampling is most commonly used in large-scale household surveys and research involving clinical trials of drugs or other medical technology. Well-designed non-probability samples are typically used for hospital and community assessments and any programmatic interventions that follow related to the problem of unsafe abortion. In general, results will be more accurate the closer they come to sampling the total population. In hospital studies, it may be possible to obtain a 100% sample over a limited time-frame. Many researchers would agree that, as a general rule, a minimum sample of 100 is needed to conduct any reliable statistical analysis; however, in some sites, this may not be feasible. Researchers should be aware that certain questions about abortion may be answered reliably by a much smaller sample. For example, a provider may want patient suggestions for improving service delivery for the treatment of incomplete abortion. In this case it may be appropriate to sample until the same answers are being repeated frequently and few new answers are occurring.

Interviewer training

Before beginning data collection, researchers must select and train data collectors (interviewers), unless the sample size is small enough that the researcher can handle all of the data collection. Researchers should use the fewest number of interviewers to achieve the desired sample size, because the more data collectors that are employed the more complicated the data collection process becomes. Interviewer training should include:

theory so that interviewers understand the objectives of the study, the questions that they will ask and why they should be asked in a particular way;

practice so that interviewers can develop positive ways of interacting that will encourage thoughtful and truthful responses.

The practice can be incorporated into the pretest of the data collection instruments (see section on pretesting that follows). It is very important for the **principal investigator** to supervize closely the data collection process. All data-recording forms should be checked routinely for entry errors.

2.4 Data collection

Choice of the technique(s) of data collection depends on a number of factors. In the absence of concrete evidence demonstrating the appropriateness of one method of data collection over another, several methods may be utilized on a pilot (trial) basis. For example, **pilot studies** can be conducted to estimate the degree of expected under-reporting of the abortion practice.

The validity of respondents' answers to interviewers' questions on unsafe abortion is usually debatable. No single method useful for investigating unsafe abortion offers a completely reliable description and/or explanation; therefore, researchers are encouraged to employ a range of methods. Incorporating multiple research methods is known as triangulation. Different methods can and should be used to cross-check and indeed validate subjects' responses. Table 2.2 presents a summary of various research methods useful in the study of unsafe abortion, including advantages and disadvantages of each, and Table 2.3 lists examples of data to collect, using five categories. Johnson *et al.* (1993, 1996) provide a good example of incorporating multiple research methods in a study of contraception and abortion in Romania.

Hospital record review

If possible, researchers should review any locally available records on abortion-related morbidity and mortality. *Hospital records* (ward registers, patient charts, theatre logbooks, etc.) can provide information related to the treatment of abortion complications and abortion-related mortality (see Kinoti, *et al.* 1995). Examples of research questions that may be answered with hospital record review are found in Chapter 3, Section 3.3. *Death records* might be a valuable source of data about abortion-related mortality; however, abortion-related mortality is often incorrectly recorded on death registers for a variety of reasons.

Individual interviews

Structured interviews with individuals are designed to obtain information on *what, where, when,* and *how many* through **closed-ended questions** that have logical (yes/no, true/false, agree/disagree), numeric, and/or other answers that can be easily coded for tabulation. Most demographic and household surveys are characterized by a structured-question format. These questionnaires are challenging to create but are usually easy to administer because little or no interpretation of either

questions or answers is required. In addition, the results are very easy to quantify and can provide good descriptive information. The same information that can be collected through structured interviews can be collected through self-administered written questionnaires, if the sampled individuals are motivated to complete the questionnaires and have an appropriate written literacy level. However, self-administered questionnaires do not allow for any appraisal of the individual responses.

TABLE 2.2
SUMMARY OF RESEARCH METHODS

METHOD (N = sample size)	PRIMARY PURPOSE	ADVANTAGES	DISADVANTAGES
Hospital record review (N = records for the previous one year or more)	To assess the incidence of abortion complications in the hospital setting	Provides data on number of services provided and number of women served by facility	Dependent on accuracy of record keeping. May not provide a good indication of the proportion of unsafe abortions
Individual interviews Structured format (N = large or small sample)	To collect descriptive (quantitative) data	Provides **descriptive data**; can be done relatively quickly and economically	Less opportunity to develop interviewer/ interviewee rapport; provides little or no **explanatory data**
Individual interviews Semi-structured format (N = usually small sample)	To collect a mix of explanatory (qualitative) and descriptive (quantitative) data	Provides a combination of descriptive and explanatory data	Very difficult to obtain **representative samples**; a time-consuming data collection and analysis process
Case histories (N = usually a small sample	To gather detailed information about one person or case	Provides in-depth information and insight about a particular person or phenomenon	Requires intensive research, thus restricting the total number of cases
Group interviews Highly structured focus-group format or more casual group-discussion format (N = 5-15 per group)	To collect qualitative data in a group setting that can be used to: inform research design, supplement ongoing data collection, and/or provide reactions to research results	Facilitates group dynamics which enhance participant confidence and openness.	Requires a highly skilled interviewer/facilitator; the relative ease of data collection can belie the complexity of the interview, transcription, and analysis process
Observation (N = usually a small sample)	To assess practice from an "outside" perspective	Provides an independent assessment to check interview responses	Time-consuming; intrusive; may encourage atypically good behaviours
Time-motion studies (N = varies, usually small)	To measure time and resource allocations	Provides exact measures of time and resource use	Requires special skill; time-consuming; intrusive

Semi-structured individual interviews mix structured questions with **open-ended questions** that ask *why* and *how*. Open-ended questions are used to follow up and probe for more detailed and explanatory answers. The structured questions in semi-structured interviews can be quantified as above. Open-ended questions are more difficult to administer because follow-up questions should be asked in a uniform way for each respondent. The analysis of open-ended questions is also more difficult than for structured questions because categories of responses are not so distinct. Certain computer software can aid in analysis of open-ended questions. (e.g., Ethnograph, Hyper Research, etc.)

Case histories are essentially in-depth semi-structured interviews conducted with one or a few individuals. This approach is particularly well-suited to understanding the social, psychological and health service aspects of the problem of unsafe abortion, and to stimulating interest among policy-makers and the general public. Baker and Khasiani (1992) provide a good example of this approach. Because the sample size is usually very small, it is important not to make general assumptions based on case histories; however, case histories can be used to identify questions to ask in other interview studies.

Group interviews

Group interviews (also called **focus group discussions**) usually follow a semi-structured format. Group interviews are most productive and manageable with between 5 and 15 participants. Group interviews are usually designed to bring together a small group of people to discuss a particular issue. They can be used at the beginning, midpoint, or end of the research process; however, their function varies according to the time when they are used. For example: group interviews conducted at the beginning of a study may be used as a preliminary data-gathering tool; used at the mid-point, they may provide insight on data collected from individual interviews and information that allows the researcher to modify the course of data collection; and, used at the end of a research study, they might resolve unanswered questions, or serve as a mechanism for disseminating results.

Based upon the study needs, participants may share similar characteristics, or may be chosen because of their differences, such as: same, similar, or different ages, gender, marital status, experience, or socioeconomic status. A group setting can help people express feelings, attitudes or behaviours that may be obscured in an individual interview. On a cautionary note, proper facilitation of a focus-group discussion requires certain subtle skills. Generally, the presentation of discussion topics should be **impartial** and balanced rather than biased toward a particular opinion or point of view; however, a facilitator may purposely impose a biased view in order to manipulate and stimulate discussion. Some focus-group facilitators have been criticized for being too much the advocate in their facilitation and thus effectively becoming a group participant themselves. Facilitators must strive to always maintain an objective, critical point of view and maintain a degree of detachment. Due to their small size and biased participant composition, focus-group discussions should never be the sole instrument of data collection.

Despite some limitations (e.g. difficulty of getting an experienced facilitator and the labour-intensive nature of transcription and analysis), group interviews are useful for obtaining at least preliminary information from the community on the feasibility of conducting epidemiologic studies as well as studies of the social and psychological aspects of the problem of unsafe abortion. If time and resources permit, researchers can experiment with different group combinations to see if new ideas/knowledge emerge. One study in Paraguay utilized group interview discussions with pharmacists, some of whom dispensed pharmaceuticals in doses and/or mixtures meant to be used by women attempting to terminate pregnancies. The data collected in these sessions offered a valuable overview of all aspects of unsafe abortion in this setting (Shedlin, 1989).

Observation

Observation as a data collection technique can be used to describe small or subtle but important nuances or changes in human interactions and behaviours. Observation may be useful to document physician/patient interactions, delivery of health services in general, or community education efforts. It is particularly useful for cross checking information collected in interviews about quality and delivery of services. It is important to gain the consent and ensure the confidentiality of people being observed, especially if they are observed in a private setting such as a clinic.

Time-motion studies are a highly structured form of observation, carried out in the belief that what people *say* they do and what people *actually* do can be very different. These studies are particularly important for assessing cost and resource use. Time-motion studies allow a researcher to systematically document practice by observing and documenting either the length of time or the amount of activity.

Pretesting and modifying data collection instruments

After the research instruments have been designed, they should be pretested using interview guidelines. Pretesting allows researchers to cross-check the appropriate translation of questions, the appropriate question order, the thoroughness of response, and assess the reliability and validity of interviewee responses. Pretests should also assess how long it takes to conduct the interview, and the most appropriate place for conducting the interview. Pretesting should be part of the interviewer training process to allow for skill development. Instruments used in intervention projects for observing and monitoring data collection or service delivery should also be thoroughly pretested. This allows researchers to make sure instruments are complete and items are in the correct sequence. Instruments used to guide record review can be similarly refined.

It is difficult to say how many people should be in a pretest sample. If money and time allow, researchers should sample until they are confident of the quality of the instruments, questions, responses, and interviewer skills. Respondents who complete the pretest should be similar to the intended subjects of the research study. For example, if interviews will be conducted with adolescents in school, the interview should be pretested with adolescents in the community who are in school. It is appropriate to ask pretest subjects as well as implementors to comment on their interviews, and to provide feedback on any issues that are of concern to the researcher. Similarly, for observation guides or time-motion study, the instruments should be carefully pretested. Following the pretest, appropriate modifications can be made prior to the real data collection. If significant changes are made to the instrument after the pretest, it is important to pretest the new version of the instrument.

As much as possible, data should be collected in the same consistent manner with each group or individual participant. This requires significant planning, training, and practice to ensure that appropriate supplies (including paper, pens, pencils, tape recorders, batteries, cassette tapes, envelopes, etc.), time, transportation, and personnel are available. Data collectors should be trained to collect data in an unbiased manner. The fewer data collectors that work on a project, the more uniform and consistent their work is likely to be. Regular meetings with data collectors will help them assess the quality of their work and determine satisfactory solutions to problems that arise, such as interruptions, tape recorder

failure, questions about the veracity of certain responses, etc. These problem-solving meetings will also help researchers update data collectors on decisions that are made. Data collectors should record any problems that arise during the data collection process. It is important to consider these problems as possible influences on the quality of the data when conducting analyses and reporting results.

Table 2.3
Examples of Data to Collect

Background/ Socio-demographic	Reproductive Health History	Knowledge:	Attitudes/Behaviours:	Health-Care Practices
gender	number of pregnancies	how pregnancy occurs	desired number of children	contraceptive methods
age	number of live births	timing of the fertile period	specific contraceptives	contraceptive counselling
ethnicity	number of still births	how to prevent pregnancy	personal role in pregnancy decision-making	contraceptive referrals
religion	number of miscarriages	use of contraceptives	partner or family members' role in pregnancy and contraceptive decision-making	abortion/menstrual regulation methods
marital status	number of induced abortions	legal status of abortion	unwanted pregnancy	treatment methods
household composition	number of living children	available health-care services	abortion	STI screening
urban/rural residency	use of family-planning	practices used to terminate pregnancy	menstrual regulation	
personal/household income	history of RTIs/STIs			
work history	use of health-care services			

2.5 Data management

The data management process includes all steps necessary to extract answers to research questions from data and to check the quality of the research results. During and following the data collection process, great care should be taken to ensure that data are properly coded, cleaned, edited, and stored. Coding data involves transforming responses such as `agree/disagree' or `yes/no' into numerical form for quantitative analysis and creating code categories for qualitative data. Cleaning and editing data involves confirming coding decisions, ensuring consistency where decisions are made, and confirming data entry into a computer or transcribing data onto code sheets. Ideally, information should be kept in a computerized database; however, if no computer is available, researchers should with great care and attention to detail manually transcribe the data.

Qualitative data collected through individual and group interviews should be transcribed verbatim. Where appropriate, subject demographic information can be linked to the qualitative data (e.g., ethnicity, age, gender, profession), but care must be taken that any personal identifiers (such as names or employers) be removed to protect confidentiality.

2.6 Data analysis

Data analysis should be done under the close supervision of the person responsible for the research project (the principal investigator). The goal of data analysis is to ask questions of the data that answer the research questions on which the study was based. Researchers should ensure that their data analysis goes beyond simple descriptions of study variables and offers some explanation for answers and/or solutions to the research question(s). Data analysis should include complete documentation of the process of data collection. Quantitative analysis can range from very simple calculations done by hand or with a calculator to complex modelling and analyses that require a computer and statistical software. The types and extent of quantitative analysis should depend on the questions asked, the data collected, and the expertise and financial resources of the data analysts. In general, quantitative analyses should include at least the total number, percentages, and averages (**frequency distributions**) for all important variable categories and **cross-tabulations** of important dependent and independent variables. An example of a cross-tabulation is shown in Figure 2.2.

Qualitative data analysis involves organizing and using open-ended responses to explain the more descriptive (quantitative) data. Open-ended questions can be analysed by compiling lists, themes, and/or grouping responses according to their content a process called **content analysis**. Computer programmes such as Ethnograph or Hyper Research are designed to help researchers conduct content analysis. Open-ended responses are usually not intended for quantitative analysis.

2.7 Data dissemination

Research findings are only useful when they are disseminated and used. Reports of the research results and what the results mean should be prepared for the appropriate audiences. These audiences may include some of the research subjects, health-care providers, women's health advocates, policy-makers, community groups, or sponsors of the research project. Dissemination should be as broad-based as possible including local, national, and international distribution.

Summing up linking research results to policy and practice

Whenever possible, all potential applications of the research findings should be considered during the conceptualization stage.

Even the smallest studies can have remarkable local impact.

The research plan should include a timeline for all dissemination activities.

Appropriate policy and programme people should be included in the design process, updated throughout the duration of the project, and actively involved in the dissemination of the results.

Only when the results are compiled and analyses completed is it possible to understand fully the policy and programmatic implications of the research.

Strong involvement of policy-makers from the beginning of the project will ensure their commitment to utilizing findings to influence policy change and improve programmes.

Figure 2.2
Cross-tabulation of number of pregnancy losses by marital status

	Number of Pregnancy Losses					
Marital Status	0	1	2	3	4	Total
Married	174	44	20	5	2	245
Single	47	9	2	0	0	58
Cohabitating	15	2	2	0	0	19
Divorced	14	4	3	2	0	23
Widowed	1	0	1	0	0	2
Total	251	59	28	2	2	347

Chapter 3

Hospital/Health Facility Studies on Unsafe Abortion

3.1 Introduction

The most logical, cost-effective and convenient place to conduct research on unsafe abortion is the health-care facility where women with complications of unsafe abortion are treated. For this reason, the majority of abortion studies have been hospital-based and it is likely that most future studies will be conducted in hospitals as well. Researchers should consider both the advantages and disadvantages characteristic of hospital/health facility studies.

Advantages include:

hospitals provide researchers relatively easy access to patient registers, records, and logbooks as well as patients and providers;

hospital and health records provide essential data on the extent of health services provided, who uses services, resources used, and trends in use of services;

there is no other single location where it is so convenient to interview women who have used abortion-related health-care services;

other issues related to the delivery of reproductive health services can be studied along with research on unsafe abortion.

Disadvantages include:

hospital studies are not an accurate way to document the rate of unsafe abortion in the community;

researchers only have access to women who are hospitalized with complications from abortion, and it is generally accepted that many more women have abortion complications but are not admitted to a hospital;

it is often a challenge to maintain privacy during interviews conducted in health care facilities;

some women may be unable to participate in an interview due to their clinical or emotional condition;

studies with patients and providers are not necessarily representative of broader community perspectives on abortion.

This chapter provides background and a literature review for the major types of hospital studies; suggestions for health-care providers and administrators who may wish to examine the problem of unsafe abortion in their own hospital setting; and two hypothetical examples of hospital-based studies. The term hospital-based research is used for simplicity but should be understood to encompass research done at any level of health-care facility.

3.2 Hospital-based research

Research that can be conducted in hospitals includes **clinical studies** on the management of abortion complications; **diagnostic studies** to document and assess the quantity of services offered and the quality of service delivery, assess and compare the cost of services, or document patient/provider knowledge, experiences, and perceptions about abortion and/or services; and intervention studies that involve implementation and assessment of service interventions designed to improve the quality of postabortion care, or to expand access to postabortion care through decentralization. Each of these categories of study is described and referenced below.

Clinical studies

Clinical studies related to abortion focus on patient management issues, including techniques of uterine evacuation; areas where services are delivered; pain management; referrals for other services; assessment of presenting and procedural complications; and assessments of provider practices related to identifying training needs and improving general quality of care. The *Monograph on complications of unsafe abortion in Africa* (Kinoti, *et al.* 1995) lists 20 articles that report the results of clinical studies, placing each article in one or more of four categories.

Managing the treatment of abortion complications

The most common complication of unsafe abortion is incomplete abortion which is often accompanied by other complications such as haemorrhage, sepsis, cervical trauma, or uterine perforation. Providers and health-care administrators may be especially interested in procedures other than **sharp curettage** for treating incomplete abortion, such as manual or electric vacuum aspiration (see Greenslade *et al.* 1993).

The scientific literature provides enough clinical data on existing methods of treating abortion complications that there is little need for additional study; however, some policy-makers may require their own country-specific studies of emerging technologies. Where this is the case, researchers are likely to focus on safety and may document the procedural complications of different abortion procedures as well as their cost and effects on patient management (see for examples Ahued *et al*., 1978; Caceres et al., 1981; Rogo and Nyamu, 1989; Ekwempu, 1990; Kizza and Rogo, 1990; Bradley *et al*., 1991; Pinell Gadea *et al*., 1991; Guidozzi *et al*., 1992; Verkuyl and Crowther, 1993; Mahomed *et al*., 1994.). Other studies have focused on traditional means of inducing abortion (Kidula *et al*., 1992; Yoseph, 1993). Similar research on techniques for menstrual regulation or induced abortion are appropriate where these procedures are allowed.

One study has recently addressed the issue of pain control from patient and provider perspectives (de Jonge *et al*., submitted). Other studies on pain control during abortion include, Stubblefield (1989), Belanger *et al*. (1989), and Atrash *et al.* (1988).

One of the major gaps that exists in the literature on management of abortion complications is how to decentralize treatment to the primary level of health care,[12] and as a related issue, the feasibility of special training for mid-level health-care providers such as midwives and community health workers to take on additional abortion and postabortion care responsibilities. The services that can be decentralized to expand access are included in Annex 1.

Diagnostic studies

Diagnostic studies (also called **situation analyses**) are exploratory studies that provide insight such as baseline information that can provide the foundation for design and implementation of service delivery interventions. For examples, see Ping and Smith (1995); Justesen *et al.* (1992); Begum *et al*. (1991) and Singh and Wulf (1991). Diagnostic studies include: documentation and assessment of services; patient and provider interviews to document knowledge, experience, and perceptions of abortion and/or related service delivery; and, studies to document and compare the cost of services that address the problem of unsafe abortion.

Documentation and assessment of services

One of the best starting points for any hospital-based investigation is a thorough documentation of the process of abortion-related service delivery. This can be accomplished by following one or more patients from the beginning to the end of their treatment for abortion complications, while documenting every detail of the treatment process. Researchers can also gather abortion data from ward registers, patient records, and theatre logbooks. Research typically begins at central hospitals, but the broadest view of services comes from looking at all locations where women seek care for abortion, including lay providers and traditional birth attendants as well as health centres and primary care facilities. Anh *et al*. (1995) provide a good example of documenting provider and user perspectives of reproductive health services in an induced abortion setting at four sites in Vietnam. Solo *et al.* (1995) provide an example of a baseline assessment of physicians perceptions of needs for postabortion family-planning services at six sites in Kenya. An example of a situation analysis of a family-planning programme was done by the Zimbabwe National family Planning Council (1992) in Zimbabwe.

Monitoring service statistics

Existing documentation can be a useful tool in learning about services. Researchers can accumulate a great deal of information about the problem of unsafe abortion and the process and outcomes of

[12] World Health Organization. *Care of mother and baby at the health centre: a practical guide*., WHO/FHE/MSM/94.2. Geneva 1995.
Tinker A, Koblinsky MA. *Making motherhood safe*. Washington, DC: The World Bank, 1994.

postabortion care programmes by looking at statistics on a few **indicators**. Well-chosen indicators will serve as markers for assessing and/or understanding a particular phenomenon, such as the social, economic, political, or medical dimensions of a problem. As policy guidelines are developed and programmes are implemented, it is important to determine how change will be measured. Key indicators can be used to provide effective measurement. Change in key indicators should:

> begin with identification of indicators during planning;
>
> continue as an ongoing process of collecting and analysing information about implementation of the programme;
>
> focus on effectiveness and impact in programme evaluation.[13]

A number of organizations have begun developing indicators in the area of maternal and reproductive health; however, indicators on abortion have only recently begun to be established. The Evaluation Project[14] has produced a list of postabortion care indicators.[15] Table 3.1 presents some of the indicators that are pertinent to the topic of unsafe abortion. The list in Table 3.1 is far from exhaustive, and researchers must keep in mind that for all indicators, there are extraneous factors that may have a direct or indirect effect on programme results.

Patient and provider interviews

Interviews with patients and providers of postabortion services can serve many purposes, including the situation analyses previously mentioned. However, one of the more interesting uses of patient/provider interviews and one that can be used to help with the design and implementation of hospital or community interventions is to assess knowledge, experience, and perceptions of unwanted pregnancy, contraception, and abortion. Johnson *et al*. (1993; 1996) provide a good example of using client/provider individual and group interviews and observation to examine the issues of contraception and abortion in Romania. The study by Johnson *et al*. was immediately followed by a population-based reproductive health survey conducted by the Institute for Mother and Child Care, Romanian Ministry of Health and the Centres for Disease Control and Prevention (1995). Taken together, these studies provide strong qualitative and quantitative data on the issues of contraception and abortion in Romania.

Patient and provider interviews can provide different perspectives on:

> information about the social, economic, psychological and health problems encountered by women with abortion complications;

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[13] World Health Organization. *Mother-baby package: Implementing safe motherhood in countries*. WHO/FHE/MSM/94.11 Rev.1. Geneva, 1995.

[14] The Evaluation Project. Carolina Population Center, University of North Carolina at Chapel Hill, CB 8120 University Square, Chapel Hill, NC 27516-3997 USA.

[15] *Indicators for reproductive health program evaluation*. Washington D.C., The Evaluation Project, 1995.

information about the socio-demographic characteristics and reproductive history of women seeking abortion-treatment services;

attitudes regarding the problem of unwanted pregnancy and pregnancy termination;

perspectives on quality of services offered.

Cost assessment and comparison of treating abortion complications

The hospital cost of unsafe abortion can be assessed by documenting the time and resources (material and human) consumed by the treatment of complications (e.g., operating theatre time, anaesthetics, other drugs, staff time, etc.). Researchers can compare the cost of services before and after implementation of an intervention, compare the cost of two different interventions, or document the cost to women who have unsafe abortion.

Items that affect the hospital cost of treating abortion complications include:

salaries/benefits of the hospital staff involved with treatment;

cost of medications, analgesia, anaesthesia, and blood transfusions;

cost of medical instruments/supplies;

cost of operating theatre (if used);

cost of hospitalization and overheads.

IPAS has developed a guide to assessing the cost of abortion treatment which may be obtained free of charge.[16] Other helpful resources include a cost study of alternative methods for treating abortion complications by Johnson *et .al*. (1993a and 1993b), and Kay *et al.* (in press); a study on resource utilization in a Latin American context by Fortney (1981); a study on assessing the cost of illegal abortion by Figà-Talamanca *et al.* (1986); a study of the costs of menstrual regulation in Bangladesh by Kay and Kabir (1988); and, a guide for assessing the cost of family-planning services by Janowitz and Bratt (1994). Both Makinwa (1981) and Narkavonnakit and Bennett (1981) provide examples of research that addresses the national cost of unsafe abortion.

Researchers should compare the cost of treating incomplete abortion with the cost of other medical services and family planning, including assessing the cost of linking family-planning services to the gynaecological wards where women with abortion complications are treated. In a country where reducing legal restrictions on abortion is being debated, it may be helpful to compare the cost of unsafe abortion with the cost of safe legal abortion. This comparison may also be useful in a country where the law allows menstrual regulation or elective abortion, but where these services are inaccessible to many

[16] Abernathy MA, *et al. A guide to assessing resource use for the treatment of incomplete abortion.* Carrboro, NC: IPAS, 1993. To obtain a copy write to IPAS, P.O. Box 999, 303 E. Main Street, Carrboro, NC 27510, USA, or email IPAS@IPAS.org

rural or poor women. Information about cost should be examined in light of women's access to economic resources. Finally, economic resources can be compared with the cost of other essential goods or services such as food or fuel.

Table 3.1 INDICATORS FOR STUDYING UNSAFE ABORTION

INDICATOR All indicators should be measured within a specific area and during a specified time period.	DEFINITION / CALCULATION number, or numerator / denominator	DATA SOURCES* Service statistics include data from health facilities which may include: logbooks, registers, and patient records.	POTENTIAL USES All indicators can provide information about the context of abortion for any research efforts.
1. Maternal deaths from abortion complications**	Number of maternal deaths from abortion complications	C **Surveillance** C Service statistics	C To estimate the number of maternal deaths due to complications of abortion C When collected at a population level with other data, can be used to calculate abortion deaths per women of reproductive age, abortion rates and ratios, etc.
2. Case fatality rate	Number of maternal deaths from abortion complications / Number of cases of abortion complications x 100	C Surveillance C Service statistics	C To give a measure of the health status of patients as well as the quality and promptness of services
3. Proportion*** of maternal deaths due to abortion complications	Number of maternal deaths from abortion complications / Number of maternal deaths	C Surveillance C Service statistics	C To estimate the contribution of maternal deaths from abortion to total maternal deaths
4. Cases of abortion complications	Number of cases of abortion complications	C Service statistics C Observation C Patient and provider interviews	C To estimate the need for services C To make other calculations
5. Proportion of gynaecological or ob/gyn cases due to abortion complications	Number of cases of abortion complications / Number of gynaecological, or ob/gyn cases	C Service statistics C Observation C Patient and provider interviews	C To estimate the number of abortion complications relative to other gynaecological, or ob/gyn cases C Can be used in calculations to compare resource use

6. Proportion of facilities that have recently provided treatment of abortion complications appropriate to the level of care (See Annex 1)	Number of facilities which have recently provided services for abortion complications appropriate for the level of care (e.g. within the last 6 mo.) _____ Number of facilities at that level	C Service statistics C Inventory of facilities C Ministry of Health records C Information from other health care organizations including the private sector and mission hospitals	C To estimate availability of, distribution of, and women's access to appropriate treatment of abortion complications
7. Number of facilities which have recently provided legal induced abortion or menstrual regulation services	Number of facilities which have recently provided legal induced abortion or menstrual regulation services (e.g. within the last 6 mo.)	C Ministry of Health records C Information from other health care organizations including the private sector and women's health centres	C To estimate availability and distribution of services C To estimate access, e.g. for a given geographic area, range of travel time, level of care, type of facility, or population.
8. Percent of abortion patients who receive family planning counselling at the time of service.****	Number of abortion patients counselled about family planning _____ Number of abortion cases	C Patient and provider interviews C Service statistics C Observation	C To estimate availability of and women's access to postabortion family planning information and counseling
9. Percent of abortion patients who accept a contraceptive method at the time of service	Number of abortion patients who accept a contraceptive method _____ Number of abortion cases	C Patient and provider interviews C Service statistics C Observation	C To estimate women's access to postabortion family planning services C To estimate availability of contraceptives C To identify strengths and gaps in family planning

***** Estimates based on hospital data often underestimate the scope of abortion-related issues in a community.

** Indicators for maternal deaths from unsafe abortion do not represent the true status of maternal mortality at the community level.

*** When proportions are used, both numerator and denominator are given. To express proportions as percents, multiply by 100. With percents, denominators are not usually expressed.

****Indicators for family planning services available in: World Health Organization. *Mother-baby package: implementing safe motherhood in countries.* WHO/FHE/MSM/94.11 Rev.1. Geneva, 1995.

In addition to the cost to the health services, unsafe abortion is costly to the women who have them. Costs may include fees paid to the abortion provider, purchase of drugs or other supplies, transportation to the hospital, and work days lost by the patient and by the relative or friend accompanying her to the service.

Hospital intervention studies

Research findings should be used to improve health-care services beginning at the sites where the research is conducted and potentially on a broader scale through various levels of the health services. Intervention studies allow researchers to **pilot test** their findings before implementing what might be a large-scale health-system programme.

Hospital-based interventions related to treatment of abortion complications might include:

lowering the cost of services to women;

implementing an alternative treatment for incomplete abortion, for example, using manual vacuum aspiration to replace the use of sharp curettage (see Johnson *et al*., 1993a, 1993b);

training gynaecological medical and nursing staff to provide family-planning counselling and methods to women treated for abortion complications (see Mahomed *et al*., 1994; Huntington *et al.* 1995);

training community and primary level providers to offer appropriate services;

referring women treated for abortion complications to other reproductive health services (e.g., the STD clinic) when need is indicated;

changing patient management to speed up and improve the quality of care (see Johnson *et al*., 1993a, 1993b);

arranging for a family-planning association to provide postabortion counselling and services in a hospital or through a standing referral arrangement.

3.3 Hospital studies on unsafe abortion:

Example 1
Treatment services

Theory	Application
	Background: Dr. Davie runs the OB-GYN ward at the District Hospital. She and the other doctors treat many women who have had unsafe abortions. Currently, the patients are being treated in the operating theatres of the casualty department where they initially present. Dr. Davie has recently visited a hospital in another district where patients with unsafe abortion complications are treated in GYN examination and treatment rooms. She is considering making a proposal to do the same, but she needs to have a greater understanding of the issue before she presents her plan to the hospital s board of directors.
Research Questions: Before starting a research project, it is important to state clearly the research questions that the project is to answer. These questions should be focused and must be answerable. The research questions that are asked will influence the choice of methods necessary to answer them.	**Research Questions:** Dr. Davie determined that she had several questions that needed to be addressed: C How many patients are being treated for incomplete abortion in the operating theatres of the casualty department? C How much staff time is being spent treating these patients? How much time do the patients spend at the hospital? C How much does it cost the hospital to treat these patients? C How do the doctors, nurses, and midwives feel about the setting where the patients are currently being treated? How do the patients feel about the setting where they are currently being treated?
Data Collection: Several research methods can be used in a hospital setting, including review of records, time-motion studies, and interviews with or questionnaires for providers and patients.	**Data Collection:** Dr. Davie decided that she must use a combination of records review, time-motion study, interviews, and questionnaires to answer her research questions. To ensure that others would have a clear idea of what she proposed to do, she wrote a three page description of her study that included background, the research question, study design, data collection methods, and data analysis.
<u>Review of records</u>: Many records in a hospital may be suitable for data collection on length of patient stay, medications prescribed, procedures performed, cost of supplies, staff time used, and	<u>Review of records</u>: Dr. Davie used hospital logbooks to determine how many women are treated for incomplete abortion each month. She also used medication and supply logbooks and

other topics. Patient charts, logbooks, supply logs, and other records often have information that can help answer the research questions. Before using existing records, it is important to have a standardized way of extracting the information and recording it onto a data collection sheet. Time-motion study: Time-motion studies are useful for determining the efficiency of patient flow in a hospital. First, draw a map of the hospital and outline the route that patients follow from registration to discharge. Next, follow selected patients throughout their time in the hospital writing down the time each staff person spends with the patients as well as patient wait-time. It is imperative that each patient gives her consent before she is included in the study. Interview: Respondents are asked questions according to an **interview protocol**. The interview protocol is comprised of the questions to be asked, the response categories (answer categories), and special instructions to the interviewer. Questions can be *closed-ended*, in which there are specific responses provided to the respondent, or *open-ended*, in which the respondents answer in their own words. Interviews are appropriate when the researcher has a lot of questions to ask, and when the interviewer can comfortably communicate with the respondents on the topic. Interviews can be expensive, require training of the interviewers to be complete and unbiased, and present challenges for data analysis if open-ended questions are used. Questionnaire: The same questions that can be asked in an interview can be asked in a printed questionnaire that the respondents complete by themselves. This is appropriate for groups that read and write well and are motivated to complete the questionnaire themselves. Self-administered questionnaires may be less expensive than interviews, because they require less time of the project staff. However, some people may not complete their questionnaires, causing the response rate to be low.	patient charts to estimate how much the hospital spends on medications and supplies for each incomplete abortion. She included antibiotics, analgesics, curettes, and needles, among other things, in this estimate. Time-motion study: As each patient with incomplete abortion registered at the hospital, she was asked if she would participate in the study. A data collection sheet that had spaces for the time in and out of each stage of her visit was completed by one of the university research assistants that Dr. Davie hired for the study. Next to the time the patient spent in registration, waiting room, exam room, operating theatre, and recovery room, the research assistant also wrote down how much time each staff member spent with the patient. This allowed Dr. Davie to calculate the time patients wait between stages of treatment, the amount of staff time being spent by each category of staff (physician, nurse, support staff), and the cost of staff time per patient being expended. Interview: Recovery room nurses interviewed a sample of 20 abortion patients for this project. The patients were asked questions such as: Once you decided to come to the hospital this time, how long did it take you to get here? When you arrived, how long did you wait before you were examined by a doctor or nurse? What were you offered while you were waiting? (Counselling, wait with friend, magazine) Socio-demographic/reproductive health questions, including: age, religion, parity, contraceptive use and abortion history, and sources of health-care. Questionnaire: Dr. Davie distributed a questionnaire to the physicians, nurses, and midwives at the monthly staff meeting. Some of the questions on the questionnaire included: What is your position (physician, nurse, midwife)? How long have you worked at this hospital? How many incomplete abortion patients do you see per week? How much time do you typically spend with each patient: Treating her medical problems (evacuating her uterus, administering medications)? Discussing family planning? Completing paper work? Could you provide the same services you currently provide to patients with incomplete abortions in a treatment room (instead of in the operating theatre)? Why or why not?
Data Analysis: The goal of data analysis should be to use the data in a way that is meaningful and helpful to the specific purposes of your study. The level of data analysis that is performed depends on the type of	**Data Analysis:** Dr. Davie collected a lot of information in the course of her study; it is fortunate that she anticipated the data analysis when she selected her research methods. She tallied the data

research that has been conducted. A basic research methods text book may be helpful if your experience in this area is limited. You also may be able to find a bio-statistician or other person familiar with reproductive health research to assist you. In general, data analysis includes organising the information, identifying patterns in the information, and drawing conclusions from the information. Quantitative data, such as those obtained through review of records, time-motion studies, and interviews (closed-ended questions) can be organized by a computer or on summary sheets. Patterns can be identified by looking at the frequency of responses and by cross-tabulating characteristics of the respondent/hospital with various other variables. Other statistical analysis can be conducted; a statistics text book may be helpful. Qualitative data, such as those obtained through focus groups and open-ended questions in interviews or on questionnaires, can be organized into themes or categories. It is often informative to relate socio-demographic data, such as race or profession, to the responses to see if any patterns exist.	obtained through hospital and patient records to determine the number of patients treated for incomplete abortion. The time-motion study generated data on the minutes each patient spends in different parts of her care and the staff time spent with each patient. This information was entered into a spreadsheet programme on a computer and totals for patient wait time, staff time treating patients, and the cost of the staff time were calculated by the computer. Information collected from patients (through interviews) and providers (through questionnaires) were used in two ways. First data on patients' and providers' reports of the time they spent were compared to the data from the time-motion observations. Second, their responses to the open-ended questions about their opinions on the current treatment protocol were read and categorized into satisfied, unsatisfied, and no opinion/other groupings. Examples of their comments were used in the report that Dr. Davie made to the board of directors.
Results: It is important to convey the results of your research to those who supported the research (funders, planners, research assistants) and to those who may make programmatic or policy decisions based on the research.	**Results:** It is important to convey the results of your research to those who supported the research (funders, planners, research assistants) and to those who may make programmatic or policy decisions based on the research.

Example 2

Postabortion Family Planning

Theory	Application
	Background: Anirvan, the Regional Medical Coordinator for Delta Region, has just returned to work after attending a two-week conference and training on a new curriculum in postabortion family-planning. Motivated by the International Conference on Population and Development Programme of Action, which endorses addressing the problem of unsafe abortion through improving family-planning services, Anirvan proposes implementation of postabortion family-planning services, including counselling and provision of contraceptives, in the regional hospital. He knows that if he wants to expand the programme throughout the region and the country, he will have to document its acceptability and effectiveness.
Research Questions: Before starting a research project, it is important to state clearly the research questions that the project is to answer. These questions should be focused and must be answerable. The research questions that are asked will influence the choice of methods necessary to answer them.	**Research Questions:** Anirvan consulted with the head of the Obstetrics and Gynaecology unit at the regional hospital, and also contacted two women's groups active in the region. Together, they developed and agreed upon the following research questions: How many postabortion patients accept family-planning methods before and after implementing postabortion family-planning services? What percent of postabortion patients return for follow up visits before programme implementation? What percent return for follow up after the counselling and services are initiated? How acceptable is the programme of postabortion family-planning counselling and services to patients? to providers?
Data Collection: Several research methods can be used in a hospital setting. Perhaps the most available are records review and interviews with patients and providers.	**Data Collection:** To measure the impact of the new services, Anirvan realized that he must conduct pre- and post-intervention assessments of service delivery. After the initial assessment, the hospital will sponsor training for obstetrics and gynaecology staff in postabortion family-planning counselling and contraceptive service delivery. Once the counselling and services have been in place for three months, he will do the post-intervention assessment. Anirvan decides that he can collect the information he needs within a limited budget by collecting data through a review of hospital records and limited interviews with patients and providers. He will conduct the records review and the interviews before the training and three months after the training.

Data Collection (continued):	**Data Collection (continued):** His records indicate that the hospital sees an average of 10 postabortion patients each week; he estimates that in four weeks of data collection he will be able to interview about 32 patients (realizing that some will not be well enough or willing to be interviewed).
Review of records: Many records in a hospital may be suitable for data collection on length of patient stay, medications prescribed, procedures performed, cost of supplies, staff time used, and other topics. Patient charts, logbooks, supply logs, and other records often have information that can help answer the research questions. Before using existing records, it is important to have a standardized way of collecting the information and recording it onto a data collection sheet.	Review of records: Anirvan designed two data collection sheets: one for recording information from patient charts, and one for recording information from ward logbooks. He trained two midwives to review patient charts and logbooks and record data on data collection sheets. Information extracted from patient and hospital records for this assessment included patient age, parity, uterine size, type of treatment received, complications, past family-planning methods used, and whether they returned to the hospital for their follow-up examination.
Interview: Respondents are asked questions according to an interview protocol. The interview protocol is comprised of the questions to be asked, the response categories (answer categories), and special instructions to the interviewer. Questions can be *closed-ended*, in which there are specific responses provided to the respondent, or *open-ended*, in which the respondents answer in their own words. Interviews are appropriate when the researcher has a lot of questions to ask, and when the interviewer can comfortably communicate with the respondents on the topic. Interviews can be expensive, require training of the interviewers to be complete and unbiased, and present challenges for data analysis if open-ended questions are used.	Interview: Anirvan decided to conduct the provider interviews himself. He interviewed the head of obstetrics and gynaecology, the chief nursing officer, and several of the doctors, midwives, and nurses who work in obstetrics and gynaecology and family-planning. To determine the providers acceptability of offering postabortion family-planning counselling and methods delivery, they were asked questions on a number of issues: opinions about the family-planning needs of postabortion patients, perceptions of the burden/reward of their responsibilities and workload, and the quality of staff training to provide family-planning services to postabortion patients. Because Anirvan did not have the computer capacity or time to analyse long responses to open-ended questions, he designed the interview to include mostly questions with fixed response categories. For example, in many question schedules respondents were asked whether they strongly disagreed, disagreed, were neutral, agreed, or strongly agreed to a statement that Anirvan read. Patient interviews were conducted once the patients were in the recovery room and if they agreed to participate in the interview. The midwives trained in logbook review conducted the interviews. Issues covered on the patient interview schedule included: perceptions of waiting times, providers' attitudes, the perceived convenience of services, and demographic questions, including age, religion, parity, contraceptive/abortion history, and sources of health care.

Data Analysis: The level of data analysis that is performed depends on the type of research that has been conducted. A basic research methods text book may be helpful if your experience in this area is limited. You also may be able to find a bio-statistician or other person familiar with reproductive health research to assist you. In general, data analysis includes organizing the information, identifying patterns in the information, and drawing conclusions from the information. Quantitative data, such as those obtained through review of records, time-motion studies, and interviews (closed ended questions) can be organized in a computer or on summary sheets. Patterns can be identified by looking at the frequency of responses and by cross-tabulating characteristics of the respondent/hospital with various other variables. Other statistical analysis can be conducted; a statistics text book may be helpful. Qualitative data, such as those obtained through focus group discussions and open-ended questions in individual interviews or on questionnaires, can be organized into themes or categories. It is often informative to relate demographic data, such as race or profession, to the responses to see if any patterns exist. Overall, the goal of data analysis should be to use the data in a way that is meaningful and helpful to the specific purposes of your study	**Data Analysis:** All data were collected over a four-week period before the training and for another four weeks three months after the training. As the data were collected, the information was entered into a statistical analysis programme on the computer at the MOH. A research officer from the Ministry assisted with the data analysis. Once the second round of data collection was completed, Anirvan calculated the percentage of patients who returned for their follow-up appointments. He compared the percentage of pre-intervention patients with those seen once the counselling and other services were implemented. He did a similar comparison of the percentage of patients who returned for their follow-up appointment. Information from ward logbooks was used to corroborate information from patient charts. Frequency distributions were calculated for the interview data. For example, Anirvan calculated what percentage of providers interviewed strongly agreed that counselling should be offered in the same ward as treatment for incomplete abortion and what percentage strongly disagreed. Again, pre- and post-intervention data were compared.
Results: It is important to convey the results of your research to those who supported the research (funders, planners, research assistants) and to those who may make programmatic or policy decisions based on the research.	**Results:** Anirvan was pleased with the results of his study, and he made several informational presentations in communities within his region. He was sure others would adopt postabortion family-planning counselling and method-delivery services. However, many officials in the MOH openly stated that postabortion patients should receive the same services as postpartum patients. Anirvan then decided to present his findings at a series of dissemination seminars. He invited other Regional Medical Coordinators, MOH officials, and representatives of the local Planned Parenthood. After the seminars, he published his findings in a Medical Journal. Six months later, he was invited by the MOH to assist the other regions to design postabortion family-planning programmes in their hospitals.

CHAPTER 4

Community Studies on Unsafe Abortion

4.1 Introduction

Although there is much that can be learned through community studies of unsafe abortion, relatively few have been attempted. The community is where unwanted pregnancy and abortion originate and where strategies to reduce maternal mortality from unsafe abortion must ultimately be implemented. Some situations that lead to unwanted, **unplanned** or mistimed pregnancies include:

women and men who want to limit their family size or delay childbearing but do not have access to modern contraception;

contraceptive methods that fail or are used incorrectly or inconsistently;

women who may not be able to make decisions about sexual or reproductive issues because of family members or lack of access to financial resources;

rape and forced pregnancy;

laws, policies, and provider interpretation of laws and policies that serve to deny women access to contraception;

young girls or adolescents having sexual intercourse and thinking they cannot become pregnant "the very first time";

lack of male responsibility (for example, "sugardaddies", or older men who trade their promises of marriage, food, gifts, or money for sexual relations, and who abandon young girls/women as soon as a pregnancy occurs and/or insist that the pregnancy be terminated);

the use of alcohol or drugs, leading to unprotected sexual intercourse, resulting in an unwanted pregnancy;

sexual assault (rape) and child sexual abuse a rapidly growing problem in many areas of the world may result in unwanted pregnancies;

the spread in some countries of a false belief that a man with HIV or AIDS can cure himself by having sex with a virgin;

tens of thousands of rural villages and impoverished neighbourhoods the world over, where restrictive abortion laws, the breakdown of family networks, the lack of contraception, the lack of money, and the lack of hope contribute to and exacerbate the problem of unsafe abortion.

structural adjustment and other changes in the economy that may make contraceptive services, essential obstetric services and legal abortion services unaffordable.

Community studies can complement hospital studies by allowing researchers to:

describe and explain community knowledge, experiences, and perceptions about unsafe abortion;

disseminate results of hospital or community studies in the community and solicit local solutions to and support of prevention programmes and other community-based interventions;

inform community leaders about factors that lead to unsafe abortion, and enlist support to change environments that lead to unsafe abortion; and

implement and assess community-based interventions.

Community perspectives may be very different from the perspectives expressed by women treated for abortion complications in a hospital, or by the health-care providers who treat them. Adolescents in secondary school; people working in various businesses and professions; women and men in traditional family roles; religious leaders; traditional medical workers such as birth attendants, healers or spirit mediums; and government community medical personnel such as village community workers, contraceptive-based distributors, district nursing officers, or community social workers are just a few of the groups that might be part of a community research study.

Research questions for community studies can include many of the same questions asked in hospital research. All of the data collection techniques outlined in Chapter 2 and many of the data collection instruments used in hospital studies are appropriate for community studies with only slight modifications. The main differences between community and hospital studies are the place(s) and subjects of data collection. Unlike in a hospital setting, community researchers are likely to interview people with little or no personal experience of unsafe abortion. Also, the focus of community research may be more concerned with the factors that lead to unsafe abortion, such as:

access to contraception and abortion;

the roles of women, men, and family members in decisions about sexuality, reproduction, pregnancy and abortion;

adolescent perspectives about sexuality, reproduction, pregnancy and abortion;

general attitudes about contraception and abortion;

long-held cultural beliefs about contraception and abortion;

the roles of traditional healers and birth attendants;

school policies regarding pregnancy;

women's status within the family, community, and legal/political jurisdiction; and

any number of community interventions that may be in place to reduce maternal mortality due to unsafe abortion.

Community studies of unsafe abortion have many favourable characteristics:

Different members of the community can provide insight into the context of unwanted pregnancy and unsafe abortion.

Perspectives from the overall community, including perceptions about health care, may be very different from those of women hospitalized for abortion complications.

Community members may have good suggestions for local interventions.

Community studies can sensitize people about the public health problem in general, and engender local support for women who undergo unsafe abortion.

There are also challenges to conducting community studies on unsafe abortion:

They are logistically more difficult to conduct because they are usually more broadly focused than hospital studies.

Achieving a broader perspective requires more time and thus more money than a more narrowly-focused hospital study.

Often, researchers must take the time necessary to get to know and be accepted by the community. Depending upon the study, it may be more important to obtain a representative, or at least a broader sample of local knowledge, experiences, and perspectives. This requires more sophisticated sampling techniques, and when interventions are implemented, follow-up.

This chapter provides background and literature review for several different types of community studies; suggestions for people who wish to examine abortion from a community perspective; and two hypothetical examples of community research studies.

4.2 Indicators of performance

When conducting research to inform and evaluate community interventions, it is important to measure change along a set of accepted markers. These markers, or indicators, of performance must be identified and selected based on their relevance and appropriateness for particular interventions. When measured at various points in time, change can be evaluated. The user should consider the needs of the

community and programme and tailor the indicators or create new ones to meet actual needs. See Annex 3 for sample indicators pertinent to studying unsafe abortion in a community setting.

4.3 Community research

Community studies are often associated with the work of anthropologists or sociologists. Anthropologists may spend many years in a community getting to know the residents and providing insights from an insider's perspective. Sociologists may undertake large community surveys that reflect the socio-demographic character of the community at large. Some good examples of anthropological approaches to the study of abortion can be found in a recent symposium presented in the journal *Social Science and Medicine* (1996). Dean (1994) provides an anthropological approach in her "Community study of child spacing, fertility and contraception in West Pokot District, Kenya". Dean's methods could be easily modified to address the issue of unsafe abortion. Also, Scrimshaw (1985) provides both ethnographic and survey data in her study of induced abortion in a squatter settlement in Ecuador. Nair and Kurup (1985) provide an example of a large-scale community study of unsafe abortion in India, and Olukoya (1987) provides a similar but smaller-scale example from Nigeria. Health-care workers can also investigate the problem of unsafe abortion in the community by:

modifying data collection instruments used in a hospital setting;

creating new instruments based on local assessment of the problem; or

devising questions that will help to assess a community-based intervention.

Brabin *et al*. (1994) provide a good example of a community study in their paper, "Reproductive tract infections and abortion among adolescent girls in rural Nigeria". Community studies by Younis *et al*. (1993) and Khattab (1992) make a strong case for policy-makers and health-care providers to incorporate the "social context of health" in the design of both curative and preventive health-care interventions.

Some additional research projects that might be appropriate for community research are to:

undertake a study of adolescent attitudes about sex and unwanted pregnancy;

assess a school sex education and counselling programme;

work with religious groups or school teachers who scorn young, unmarried girls who fall pregnant;

seek to explain the phenomenon of unsafe abortion and go to various community groups to find solutions that, once implemented, can be supported by the whole community;

examine women's status and decision-making abilities.

Researchers will probably want to focus a community study on specific groups. Men, women, and adolescents may be interviewed through a variety of community venues such as schools, churches, local businesses, or the community health centre or family-planning clinic. Group interviews can be conducted with similar and/or mixed groupings of people depending upon the group dynamics the researcher wants to achieve. Community interviews can be very similar to those administered in a hospital setting but, as a general rule, should be less directly focused on the treatment of abortion complications and provision of particular hospital services. Community studies can also involve the dissemination and discussion of the results of hospital studies in a community forum. (See Mutambirwa *et al*., 1994.)

4.4 Examples of Community Research Studies

Example 1:
Prevention Services

Theory	Application
	Background: Jared, the director of the lay-health advisor network in the Municipality has recently become very concerned about the problem of unsafe abortion among the women visited by health advisors. He requested and received funding from the local government to determine what prevention services might work in the area and to set up these services.
Research Questions: Before starting a research project, it is important to clearly state the research questions that the project is to answer. These questions should be focused and must be answerable. The research questions that are asked will influence the choice of methods necessary to answer them.	**Research Questions:** Jared meets with the team leaders of the lay-health advisors, the director of the OB-GYN department at the hospital, and a representative from the Municipality. They decide that their research questions will be: C What do women use/do to prevent pregnancy? C What do women do to end an unwanted pregnancy? C How do women get and share information about contraception and abortion alternatives?
Data Collection: Two common ways to conduct research in the community setting are individual interviews and focus group discussions. Interview: Respondents are asked questions according to an interview protocol. The interview protocol is comprised of the questions to be asked, the response categories (answer categories), and special instructions to the interviewer. Questions can be closed-ended, in which there are specific responses provided to the respondent, or open-ended, in which the respondents answer in their own words. Interviews are appropriate when the researcher has a number of questions to ask, and when the interviewer can comfortably communicate with the respondents on the topic. Interviews can be expensive, require training of the interviewers to be complete and unbiased, and present challenges for data analysis if open-ended questions are used.	**Data Collection:** Jared decides to collect data through focus group discussions because the topics of contraception and abortion are sensitive, and sometimes people will say more if they can speak generally in a group rather than individually about their experiences. Two women lay health advisors will be trained to conduct the focus groups and take notes. He will organize four groups: one of young women, one of women from a poor neighbourhood, one of women from a middle class neighbourhood, and one of older women. He and the health advisors decide on the following questions to ask: Some couples do things to delay or prevent pregnancy. You may know some couples who do this. What methods do couples you know use to delay or prevent pregnancy? Some of you mentioned a method (e.g. injections).

Focus Group Discussions: Focus group discussions are group interviews with 5 - 15 people. It is recommended that focus group participants be selected in a way that optimizes discussion of the particular topic under study. For culturally-sensitive issues such as abortion, groups of similar age, gender, educational status, and ethnic background might be most effective. Focus groups can be very structured or very casual. Usually the questions are open-ended. It is best if one person leads or facilitates the group and another person takes notes and operates a tape recorder. Focus groups are especially useful when researchers want to ask people about the ways things are done or considered in a certain community. Participants in the focus groups may also be asked to complete a brief interview or questionnaire about themselves (age, race, religion, marital status, parity, income).	Where do women around here get injections to prevent pregnancy? No one mentioned a method (e.g. condoms). Do you know any one who uses them? Why do you think people do/do not use them? Sometimes women get pregnant when they do not want to and they end the pregnancies. What ways do you know for women to end pregnancies? Where do they get the method for pregnancy termination? Of the ways you mentioned, what ways have you heard are most successful? How do women find out about these ways to end pregnancies? Do women talk about these ways with their family members? Friends? Health advisors? Who do you think people would trust to give women information on ways to prevent pregnancy? When and where would women want to receive this information?
Data Analysis: After conducting individual interviews or focus group discussions, it is important to analyse the information. Analysis can be done using computer programmes or by hand. For structured interviews, statistical analysis might be helpful to determine the characteristics of the people interviewed and their responses to your questions. An introductory statistics book or a knowledgeable person may be helpful if you want to do this type of analysis. However, open-ended interview and focus group data can often be analysed by considering what information mentioned was important (looking for themes), and looking at the characteristics of people who mentioned the information.	**Data Analysis:** Jared and his advisors met to discuss what information they learned from the focus groups. They typed out transcripts of the groups from the tapes and made notes about common themes and concerns of the participants. Once they identified themes, they considered the responses of the women in the four different groups. The similarities and differences among the groups were discussed.
Results: It is helpful to write a brief report of the results of the individual interviews or focus group discussions. This report can be shared with those who are funding the research and others who are involved with the project. It can also serve as a baseline report so changes can be compared after an intervention is implemented.	**Results:** Jared and the lay health advisors wrote a report that included some of the following information: Most women knew of at least two methods of contraception. The older women talked a lot about herbs; the younger women hardly mentioned herbs. In all the groups, women said they knew people who had ended a pregnancy. They mentioned herbs and vaginal sounds as common methods of ending a pregnancy. They said that some women in the community knew what herbs to use and would help women get the herbs. They also said that one person in the area would do an

	abortion for a fee.
	Results (continued) Women agreed that they talk about contraception and abortion with other women but not very much with their husbands or other men. They said that they thought women would welcome more information on contraception as long as it was given privately by other women.
Intervention and Follow-up: An intervention in a community setting can be many things, including a media programme, an education campaign, a new health service, or a change in a policy. It is important to look at some information before and after the intervention so you know if the intervention was effective. It is also possible to look at two areas (one community that gets the intervention and one that does not get the intervention) to see if and how the intervention worked.	**Intervention and Follow-up:** Jared, the director of obstetrics and gynaecology, the representative of the Municipality, and the health advisors agreed that having specially trained health advisors who provide information and contraceptive methods to women would probably help reduce the incidence of unsafe abortion. The director of obstetrics and gynaecology was able to share some statistics on the numbers of unsafe abortions treated at the hospital. These numbers would be compared to those occurring after the intervention had time to be effective. The focus-group information was referred to often as the intervention was planned to make sure that it addressed the needs of the women in the community. After the new programme had been underway for four months, Jared organized some additional focus groups with women to find out how the programme was being received.

Example 2

Sexual Health Information for School Students

Theory	Application
	Background: Marta, a secondary school principal, has seen a number of her students leave school pregnant and not return to their studies. She knows that the information the students have about sexual health is limited, and she remembers that a sexual health programme initiated several years ago was met with a great deal of resistance from the community. Marta decides to learn more about the state policy on providing sexual health information to students, and to gather information to enable her to design an appropriate and acceptable programme to propose to the school board.
Research Questions: Before starting a research project, it is important to clearly state the research questions that the project is to answer. These questions should be focused and must be answerable. The research questions that are asked will influence the choice of methods necessary to answer them.	**Research Questions:** Marta outlines her research questions as follows: What is the state policy about providing sexual and reproductive health information and services to students in a school setting? What components of a sexual and reproductive health programme would be acceptable to students? to teachers? to parents? to church and other community leaders? What do students in her school know about sexual and reproductive health? How do they want to obtain further information? Marta needs to learn about the laws and policies that relate to sexual health education, but she does not have time to go to the university library to do the research. She finds a psychology student who has strong library skills, and arranges for the student to receive a small honorarium for researching the laws and policies and writing a report of the findings. Upon learning that there are no restrictions on providing information and education to students, Marta begins to investigate what information the students need and what information is deemed appropriate to present in a school setting.

Data Collection: Focus group discussions and individual interviews are both methods of collecting data in a community setting. <u>Focus Group Discussions:</u> Focus group discussions are group interviews with 5 - 15 people. Focus groups can be very structured or very casual. Usually the questions are open-ended. One person should lead or facilitate the group and another person should take notes and/or operate a tape recorder. Focus groups are especially useful when researchers want to ask people about the ways things are done or considered in a certain community. Participants in the focus groups may also be asked to complete a brief interview or questionnaire about themselves (age, race, religion, marital status, parity, income). <u>Interview</u>: Respondents are asked questions according to an interview protocol. The interview protocol is comprised of the questions to be asked, the response categories (answer categories), and special instructions for the interviewer(s). Questions can be closed-ended, in which there are specific responses provided to the respondent, or open-ended, in which the respondents answer in their own words. Interviews are appropriate when the researcher has a lot of questions to ask, and when the interviewer can comfortably communicate with the respondents on the topic. Interviews can be expensive, require training of the interviewers to be complete and unbiased, and present challenges for data analysis if open-ended questions are used.	**Data Collection:** Marta schedules a series of focus group discussions with teachers, school administrators, parents, and church and community leaders. She is careful to arrange the focus group discussions to include participants who are similar in social status. She prepares open-ended questions for the focus groups, asking about perceptions of the appropriateness of teaching teenagers about sexual health and ideas for providing this information in a school setting. Marta realizes that her position as school principal may make some of the focus group participants uncomfortable. Therefore, she has two psychology students from the university conduct the focus groups. One leads the discussion, and the other tape-records the discussion and takes notes. These same graduate students interview students at Marta s school and a school in a rural area according to an interview protocol that they develop with Marta. Most of the questions are open-ended, as the purpose of the interviews is to assist in the design of an appropriate sexual health education programme. Students are asked about their interest in a sexual health education programme, preferences for topics to be covered, teaching methods, and for ideas on ways to garner community support for implementing a school programme. The students are also asked questions to determine their level of knowledge about sexual health topics.
Data Analysis: Analysis of interviews and focus group discussions can be done using computer programmes or by hand. For structured interviews, statistical analysis might be helpful to determine the characteristics of the people interviewed and their responses to your questions. A beginning statistics book may be helpful if you want to do this type of analysis. However, open-ended interview and focus group data can often be analysed by considering what information was mentioned as important (looking for themes), and looking at the types of people who mentioned the information.	**Data Analysis:** The graduate students transcribe the focus group discussions and interviews. As they review them with Marta, they outline areas where respondents agreed and areas where there was no consensus. For example, many focus group participants mentioned that an advisory committee of parents and other community members should review a proposed curriculum. It was also often suggested that students should be encouraged to discuss sexual health issues with their parents. Several of the students suggested that contraceptives be made available at school; however, the parents, teachers, and community members made it very clear in the focus groups that they would not approve of contraceptives being made available to students.

Results: It is helpful to write a brief report of the results of the individual interviews or focus group discussions. This report can be shared with those who are funding the research and others who are involved with the project. It can also serve as a baseline report so changes can be compared after an intervention is implemented.	**Data Analysis (continued):** Marta worked with two of the teachers at her school to review available sexual health curricula and adapt the best for her school. She presented the proposed curriculum and a report of the focus groups and interviews to policy-makers, including members of the school board. During the next school term, the students were introduced to the new curriculum. Before the first session, students took a brief knowledge questionnaire. After each session, a small group of students was asked to debrief with the teacher to discuss the content and approach of the programme. Modifications to the curriculum were made as they were suggested. At the end of the term, the students repeated the knowledge questionnaire. The advisory panel met regularly and gave the curriculum a positive review at the end of the term. It is expected to expand to other schools next year.
Intervention and Follow-up: An intervention in a community setting can be many things, including a media programme, an education campaign, a new health service, or a change in a policy. It is important to look at some information (indicators) before and after the intervention so you know if the intervention was effective. It is also possible to look at two areas (one community that gets the intervention and one that does not get the intervention) to see if the intervention worked.	

GLOSSARY

AIDS: acquired immune deficiency syndrome.

anonymous: presented without identity; **anonymity** is an ethical practice whereby research results cannot be linked to any particular individual.

bias: allowing subjectivity (rather than objectivity) or prejudice (rather than impartiality) to affect sample selection or data collection and analysis.

case history: research that focuses in-depth on a particular (single) phenomenon, place, or person.

clinical study: research that focuses on some aspect of a biomedical event, technology, or intervention.

closed-ended questions: fixed-choice questions that require the respondent to choose a response from the choices provided.

community study: used in this document to describe research conducted in a community setting other than a hospital or other health-care facility; a community study may or may not be population based; subjects may include members from one, several, or all of the groups that comprise a community, including: school children or other adolescents, business or professional people, men (in general), women (in general), women of reproductive age, factory workers, members of the clergy, local health-care workers, local politicians or policy-makers, etc.

comparative study: a study whereby one or more characteristics of two or more groups, places, institutions, etc. are compared.

confidentiality: an ethical practice for maintaining privacy and protecting the identity of research subjects.

content analysis: a form of qualitative data analysis that allows researchers to categorize and report a potentially wide range of symbolic (descriptive) and often explanatory information; various categories of qualitative data may be quantified (where appropriate) and compared to other categories of data.

control site: a data-collection site that is similar to a second data-collection site except for one or more defined variables that are explicitly different at the second (or intervention) site.

convenience sample: a non-probability sample that is drawn based on convenience rather than representation of a larger population.

cost study: a research study that helps document and explain cost and resource utilization.

cross-sectional design: studies in which data are collected at one point in time.

cross-tabulations: a method of analysing the relationships between dependent and independent variables. Cross-tabulations are presented in tables with one category of variable (usually the dependent variable) presented across the top (or row) and categories of another variable (usually the independent variable) presented in the left-hand column (also known as *contingency tables*).

data: information collected to answer research questions.

data analysis: the process of answering research questions through the qualitative and quantitative manipulation of data.

data collectors: persons trained to collect data (or information).

demography: the quantitative and qualitative study of population dynamics.

dependent variable: the variable which the researcher wants to predict or explain.

descriptive data: data or information that describe "who", "what", "where", or "how many".

diagnostic studies: exploratory studies; studies that help develop the context of a specific issue or problem.

direct methods: methods or questions that explicitly expose the data collector's true intentions.

epidemiology: the study of the incidence and distribution of disease.

experimental research design: "true" experimental research designs allow researchers to test a hypothesis by introducing a manipulated change (independent variable) into a system (a group of subjects, hospital or community setting) and subsequently assess the impact of that change on a dependent variable ideally, all other phenomena that might affect change in the dependent variable under study are eliminated through internal control mechanisms. One of the primary features of experimental design is the random assignment of subjects.

explanatory data: data or information that explain "why" and/or "how".

focus group discussion: sometimes called a group interview, focus group discussions are small (usually 5-15 people) interactive interviews led by an impartial facilitator, usually with a focused agenda.

fora: plural of forum; meetings, conferences, etc.

frequency distribution: a statistical term that denotes number of occurrences for a particular variable.

group interview: sometimes called a focus group discussion, group interviews are small (usually 5-15 people) interactive discussions led by an impartial facilitator, usually with a focused agenda.

heterogeneous: a term that refers to the amount or degree of difference in a group (e.g., of research subjects).

homogeneous: a term that refers to the amount or degree of similarity in a group (e.g., of research subjects).

HIV: human immunodeficiency virus; the virus that causes AIDS.

impartial: not favouring a particular belief or point of view; unbiased.

independent variable: the independent variable is used to explain the dependent variable.

incidence: occurrence, or the rate of occurrence.

indicators: markers for assessing and/or understanding a particular (social, economic, political, medical, etc.) phenomenon.

indirect methods: methods or questions that obscure the data collector's true intentions.

induced abortion: provoked termination of pregnancy.

informants: persons with special knowledge or insights based on experience, training, or social position.

informed consent: the ethical practice of providing sufficient information for potential research subjects to make informed decisions about their participation in a research study; informed consent involves the presentation to the subjects of a statement of all the risks and benefits of participation.

intervention research: also called operations research; research that includes design, implementation, and assessment of a service-delivery or community intervention.

Interview protocol: standard list of questions together with guidance on how to classify responses.

Likert response scale: a series of responses ranging from "strongly disagree" to "strongly agree"; "excellent" to "poor"; "very satisfied" to "very dissatisfied", etc., often used to measure attitudes.

longitudinal design: a trend study, involving repeated data collection of independently selected samples from the same population over time; or: a panel study with information gathered from the same cases at two or more different times, with the sets of data linked by case.

manual vacuum aspiration (MVA): a technique for evacuating the contents of the uterus through use of a hand-held syringe.

models: simplified descriptions of processes or systems.

non-experimental research design: lacking one or more of the features of internal control (e.g., random assignment, a comparison group) that characterizes true experimental designs (also known as *pre-experimental designs*).

non-probability sample: any non-randomized sample.

observation: a data-collection technique that involves personally witnessed documentation of events.

open-ended questions: free response questions that allow respondents to answer in their own words in either written form via questionnaires or expressed verbally to an interviewer.

operations research: also called intervention research; research that includes design, implementation, and assessment of a service-delivery or community intervention.

pilot study: an initial or trial test of an intervention.

population sample: a randomized sample that is statistically representative of a particular population.

postabortion care: the treatment of abortion complications, provision of postabortion family-planning services (including counselling and contraceptive method delivery, and delivery), and linkages to other appropriate reproductive health services.

pretest: an initial or trial test of a data-collection instrument or process.

principal investigator: the person who directs and has ultimate responsibility for a research project.

probability sample: a sample based on the random selection of subjects.

prospective data: data collected from the present until some specified future date. Data collection may be staged or continuous.

purposive sample: a non-probability sample that is biased towards a particular "type" of subject (e.g., women with complications of unsafe abortion).

qualitative variable: a variable or response that describes a quality rather than a quantity; qualitative variables are usually described in words rather than numbers.

quantitative variable: a variable or response that describes a quantity rather than a quality; quantitative variables are usually described in numbers as well as, or instead of, words.

quasi-experimental research design: research designs that allow researchers to take an experimental approach without full experimental control; usually, these designs do not include random assignment of subjects but do include supplementary cross-checks for validity, and may also include the use of control groups.

random assignment: a process (such as a coin toss) for sample selection that gives each individual in a given population an equal chance of being included (also known as *random selection*).

reliability: a study situation in which different researchers conduct the same study using the same data collection instruments and obtain the same results.

replicability: a characteristic of study design that means a study can be repeated and produce a similar outcome.

representative sample: a sample that provides a close approximation of the population studied, making it possible to generalize back to the population from which it was drawn.

reproductive health: Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so. Implicit in this last condition are the right of men and women to be informed of and to have access to safe, effective, affordable and acceptable methods of family planning of their choice, as well as other methods of their choice for regulation of fertility which are not against the law, and the right of access to appropriate health-care services that will enable women to go safely through pregnancy and childbirth and provide couples with the best chance of having a healthy infant. In line with the above definition of reproductive health, reproductive health care is defined as the constellation of methods, techniques and services that contribute to reproductive health and well-being by preventing and solving reproductive health problems. It also includes sexual health, the purpose of which is the enhancement of life and personal relations, and not merely counselling and care related to reproduction and sexually transmitted diseases. (ICPD Programme of Action, A/CONF.171/13, paragraph 7.2.)

reproductive health care: the sum total of services (clinical treatment, counselling, information, and education) and referrals of services as required to address individuals' needs for health care related to human sexuality and reproduction, including: fertility regulation, prenatal care, safe birth, post-natal care, infertility, abortion, and reproductive tract infections (including **sexually transmitted infections and diseases**).

reproductive tract infection (RTI): any infection associated with the reproductive/sexual organs; RTIs may be the result of endogenous infections (such as bacterial vaginosis or candida), sexually transmitted infections/diseases (such as HIV/AIDS, trichomonas or gonorrhea), or infections caused by a procedural complication (such as that related to induced abortion or other gynaecological surgery).

research: any systematic inquiry that involves collecting data and disseminating the results.

research (study) design: a formalized and usually systematic plan to collect data that will inform a hypothesis.

researcher: any person who undertakes to conduct research (collect data).

retrospective data: data that are collected by reviewing past records or asking subjects about their past experience(s).

semi-structured interviews: interviews that combine closed-ended and open-ended questions that facilitate the description and explanation of various phenomena.

sexually transmitted disease (STD): a disease that can be transmitted from one individual to another through sexual contact.

sexually transmitted infection (STI): a virus (such as HIV) or bacteria that can be transmitted from one individual to another through sexual contact.

sharp curettage: a procedure for emptying the uterus that involves scraping the uterine lining with a metal curette (also known as *dilatation and curettage*, or *D&C*).

snowball sample: a non-probability sampling technique that involves obtaining subjects through chain referrals from friends, family, or acquaintances.

spontaneous abortion: unprovoked termination of pregnancy.

statistical significance: the degree of likelihood that a research finding (result) is due to a cause other than chance, or the affect of sampling bias (i.e. the finding is based on a randomly selected sample).

stratification: the division of a population into mutually exclusive groups, or strata.

structured interviews: interviews with closed-ended, codable responses.

study (research) designs: a formalized and usually systematic plan to collect data that will inform a hypothesis.

subjects: the participants of research studies.

surveillance: the routine collection and analysis of data that may be used to take appropriate action. In the context of unsafe abortion, surveillance could include collecting data on maternal deaths due to complications of abortion, and case loads within services for treatment of abortion complications.

temporal sample: a non-probability sampling technique that involves recruiting subjects over a specified period of time.

time-motion studies: studies that involve highly-structured observation of activity patterns; researchers closely follow subjects while documenting each discreet activity.

unplanned pregnancy: a pregnancy that is not expected.

unsafe abortion: a procedure for terminating unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the minimal medical standards or both.

unwanted pregnancy: a pregnancy that for a variety of often overlapping reasons is unexpected and undesired. Reasons a pregnancy may be unwanted include, but are not limited to, social/cultural, environmental, economic, and/or health factors.

validity: the accuracy of research results based on the method(s) used to obtain them.

variable: any measurable entity that might constitute an aspect of a research study.

Annex 1

Abortion Care: Actions by level of the health care system			
Community Level	Type I and Type II Health Centres	First referral	Secondary and Tertiary
Complicated Spontaneous or Induced Abortion			
C education about the dangers of unsafe abortions C promotion and provision of family planning C recognition of abortion and its complications	Additional actions: C assess stage of abortion <u>Threatened abortion</u> C sedate, observe up to 48 hours, if improving, send home and review in two weeks unless bleeding gets worse <u>Incomplete or complete abortion</u> C digital removal of visible products of conception during examination C treat shock C give antibiotics if signs of infection or suspicion of unsafe abortion C refer second trimester cases, cases of abdominal sepsis, and cases of trauma C vacuum aspiration of retained products of conception C refer if signs of uterine perforation C check for and treat anaemia C give tetanus toxoid if not up to date C if unable to evacuate uterus: give oxytocics, treat shock or infection if present, organize blood donors, refer. (Type II Centre admit and refer if not improving in 3 days) <u>Missed abortion</u> C refer	Additional actions: C uterine evacuation in the second trimester C treatment of most complications C blood cross-matching and transfusion C local and general anaesthesia C laparotomy and indicated surgery (including for ectopic pregnancy) C assess and refer for severe complications such as septicaemia, peritonitis, renal failure	Additional actions: C uterine evacuation as indicated C treatment of severe complications (including bowel injury, tetanus, renal failure, gas gangrene, severe sepsis) C treatment of coagulopathy
Where menstrual regulation is legal			
C refer women wanting abortions as soon as possible	C perform uterine evacuation in the first 12 weeks or refer	C perform uterine evacuation as indicated	

Sources: World Health Organization. *Care of mother and baby at the health centre: a practical guide.* WHO/FHE/MSM/94.2 Geneva: 1994.
World Health Organization. *Complications of abortion: Technical and managerial guidelines for prevention and treatment.* Geneva, 1995.

Annex 2
WHO Classification of Abortion

The WHO has established criteria for categorizing whether a presenting abortion complication is the result of a spontaneous or induced abortion.[17] However, studies conducted in countries with legal restrictions on abortion that attempt to differentiate patients who have induced abortion are ethically questionable since they put the subjects of study at some risk of legal prosecution, social retribution, or ostracism if they are exposed. Thus, researchers should be able to justify `why' they need to categorize women with induced abortion.

Distinguishing between spontaneous and induced abortion among women hospitalized for abortion complications is difficult. In some countries under restrictive legislation, induced abortion is tolerated and women may be more open to discussing their experiences.[18] In other countries, where women fear retribution or inadequate care, they are likely to deny unsafe procedures even in the face of the most obvious evidence.[19] To overcome this problem several different criteria for classifying abortion cases as spontaneous or induced can be devised, based solely on clinical evidence. The WHO classification scheme is based on the following criteria:

> *Certainly induced abortion*: when the woman herself provides this information, or when such information is provided by a health worker or a relative (in the case of the woman dying), or when there is evidence of trauma or of a foreign body in the genital tract.
>
> *Probably induced abortion*: when the woman has signs of abortion accompanied by sepsis or peritonitis, and the woman states that the pregnancy was unplanned (she was either using contraception during the cycle of conception or she was not using contraception because of reasons other than desired pregnancy).
>
> *Possibly induced abortion:* if only one of the "probably" induced conditions listed above is present.
>
> *Spontaneous abortion*: if none of the conditions listed above is present, or if the woman states that the pregnancy was planned and desired.

These criteria may be considered too strict in some settings, and might in fact underestimate the number of induced abortions. More detailed clinical evaluation taking into account fever and the extent of the

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[17] Belsey M. World Health Organization studies differentiating between spontaneous and induced abortions. In *Methodological issues in abortion research*. New York: The Population Council, 1989.

World Health Organization. Induced abortion. *Report of WHO Scientific Group*. WHO Technical Series No. 623. Geneva: World Health Organization, 1978.

[18] This was the case in Turkey before liberalization of the law, in Malaysia (Figà-Talamanca, 1986), and in Bangladesh (Khan *et al.*, 1984).

[19] This was the case in past studies in Latin America (Viel, 1979) and in many African countries more recently (e.g. Crowther and Verkuyl, 1985; Olykoya, 1987).

pelvic infection can be used to shift many of the "probable" and "possible" into the "certainly" induced category; however, absolute accuracy is not necessary here.

The severity of the clinical picture is likely to vary from country to country depending on the methods used to clandestinely terminate pregnancy and the barriers women encounter in reaching the hospital ward when complications arise. Where the hospital is easily accessible, women may seek care even at the slightest sign of complication; when the hospital is inaccessible, women will reach it only when their condition has become critical. The resulting overall clinical picture of abortion cases would look substantially different in these two settings.

Annex 3

Developing indicators of performance within communities and for health services

Indicators within community settings

Research to inform and evaluate community interventions must measure change along a set of accepted indicators of performance. These indicators should be:

identified and selected based on their relevance and appropriateness for particular interventions;

measured at various points in time so that change can be evaluated.

For example, the number of traditional birth attendants who have been trained in a certain skill can be measured before a new training programme is initiated, six months after the programme has been in place, and again after 12 months.

The needs of the community and programme must be consistent with the indicators. If this is not the case, new indicators will need to be created to meet actual needs. Indicators pertinent to those studying unsafe abortion in a community setting include:

number of health-care providers in a community trained in a specific skill (e.g., family-planning counselling, physical and pelvic examination to assess bleeding during pregnancies, abortion complications);

number of local women's groups who address reproductive health issues;

**number of distributors of contraceptive methods** (doctors, midwives, pharmacists, etc.) in a particular geographic area;

percentage of sexually active adolescents enrolled in a public school who are using contraception;

**percentage of health and science teachers** who are knowledgeable about contraception.

Researchers should keep in mind that alternative and/or additional indicators can be developed, depending on the characteristics of the community to be studied.

Indicators for Health Services:

Issues to Consider while Developing Research and Programme Objectives

Category	Issues for Consideration
Health-care System	availability of existing obstetric/gynaecological services for incomplete abortion
	existing resources to accommodate treatment of abortion complications (e.g., instruments, treatment space)
	adequate staffing patterns and site schedules
	present caseload and client profiles at current sites of treatment for abortion complications
	procedures for logistics and inventory control
	procedures for client follow-up
	procedures to monitor women with complications related to treatment
	availability of postabortion counselling
	mechanisms to ensure high-quality family-planning counselling
	financing of equipment, training, evaluation, and outreach needs
	level within health-care system at which women have greatest access to appropriate services
Information Needs	educational materials necessary for women treated for abortion complications
	information required by practitioners
	community education to raise awareness of services and to encourage early recognition of pregnancy complications
	documentation of programmes and dissemination of programme results
Regulatory Requirements	regulations and policies that govern the provision of induced abortion and treatment for abortion complications
	approval to conduct research studies
Logistics and Supplies	arrangements and accounts for obtaining necessary supplies and commodities

Category	Issues for Consideration
	inventory and distribution systems
	facility space as defined in treatment/counselling protocols
Training	initial and ongoing training of personnel providing treatment of abortion complications
	evaluation and monitoring of technical and counselling competence
	evaluation of training programmes
Client Care	protocols for practice (e.g., client screening, informed consent, counselling, pain management, family-planning services, infection prevention)
	protocols for follow-up and for managing complications
	provision and monitoring of family-planning services
	responsibilities of staff for treatment/counselling services
	monitoring and evaluation of treatment/counselling services
	record-keeping procedures for clients
	facilitation of clients return for follow-up and family-planning
	provision of or referral to other reproductive health services (e.g. treatment of STDs)
	scheduling services to facilitate women s access
	prices of services

Table adapted from: Greenslade FC, Baird TL, Johnson BR, Winkler J, and Leonard AH. Introducing medicinal abortion technologies into service-delivery systems, In: DT Baird *et al.*, *Modern methods of inducing abortion*; Oxford; Blackwell Science, 1995.

Annex 4

Examples of questions related to unsafe abortions

Following are examples of questions that researchers might use to obtain information related to unsafe abortion.

Examples include questions about:

- patient treatment status;
- socio-demographic/economic issues;
- reproductive health history;
- future reproductive intentions;
- health care seeking behaviours;
- fertility control;
- abortion-care service delivery;
- cost (to patients) of health-care services

These examples do not represent an exhaustive list of research questions on issues related to unsafe abortion. Furthermore, many of the questions and/or the order of the questions may be inappropriate for some studies and many other potential questions are not presented here. Researchers are encouraged to incorporate many of the same types of questions (especially about service delivery) into provider questionnaires with appropriate modifications.

Instructions for use

The interviewer introduction and informed consent statement should be carefully re-worded to fully describe and explain each individual study. Select and modify questions that focus on the main research issues(s). Delete all questions that are inappropriate or do not apply to the research study and amend the list with new questions. Re-order the questions in a way that you think is appropriate. Number the questions including Go to numbers for the skip patterns. Translate the questions into the local language and pretest them among a sufficient number of respondents. Following the pretest, reconsider whether each question directly addresses the primary study questions(s). Conduct a mini-analysis to see if the responses are meaningful and meet your study objectives.

PROJECT NAME: INTERVIEW NUMBER:
RESPONDENT NUMBER:
RESPONDENT S GENDER: Female Male **[Circle one]**
PROVINCE: DISTRICT: TOWN:
NAME OF HEALTH CENTRE: CODE:
INTERVIEWER NAME: CODE:
DATE OF INTERVIEW: DAY / / MONTH / / YEAR/ /
TIME OF INTERVIEW [24 HOUR CLOCK]:

[Begin the interview with an interviewer introduction and informed consent statement such as the following:]

My name is . . . . . and I am working with the Ministry of Health on a project to improve care for women who have problems with pregnancy.

We are inviting all women who are treated for incomplete abortion to join a study that involves one interview today and then two more interviews at three-month intervals over the next 6 months. If you agree to join the study, you would be required to come back for a follow-up interview three months from today, then again three months from that date.

Today s interview includes questions about your age, marital status, education, and economic activities; about your reproductive history; about your future reproductive intentions; about abortion; about the services you received today; plus a few other questions.

When you return three months from today we will ask you questions about how well you are meeting your reproductive health goals, including questions about contraception and how well your partner is supporting you in meeting your goals.

It is very important that you understand that everything you say will be completely confidential, and your name will not appear on any publicly seen document. Also, you may stop the interview at any time if you do not wish to continue. And you may discontinue your participation in the study altogether if you do not wish to continue.

If you agree to participate you must give me your name and address so I can send you reminders of the follow-up interviews. I am the only person who will ever see this list. I will mail to you a card like this **[show appointment card]** which will remind you to come for a follow-up reproductive health appointment. If you do not show up on the appointed date, we will visit you at your home to conduct the interview. Any interview conducted in your home will be completely private and confidential , not in the presence of your partner of children.

Your participation in this study will help many women in this community receive better services in the future when they come to hospital with problems related to their pregnancy.

Do you have any questions?

Will you participate in our study? . . . (Yes) . . . (No) Signature (Mark) .....

I. QUESTIONS ABOUT PATIENT TREATMENT STATUS			
01	Patient treatment status **[Interviewer complete if known]**	1= Incomplete abortion 2= Postabortion follow-up 3= Other [specify .....]	1 2 3
__	Complications at time of presentation **[Circle all that apply; this information may have to be obtained from patient record]**	1= Moderate to light vaginal bleeding 2= Severe vaginal bleeding 3= Shock 4= Localized intra-uterine infection 5= Sepsis 6= Vaginal discharge (not blood) 7= Fever 8= RTI/STD 9= Other [specify .....]	1 2 3 4 5 6 7 8 9
__	Type of procedure used for treating abortion complication? **[Interviewer complete if known]**	1= Vacuum aspiration (manual) 2= Vacuum aspiration (electric) 3= Sharp curettage 4= Aspiration followed by curette check 5= Other [specify .....]	1 2 3 4 5
__	Type of anaesthesia used? **[Interviewer complete if known]**	1= General anaesthesia [specify .....] 2= Heavy sedation [specify .....] 3= Light sedation [specify .....] 4= Local anaesthesia (paracervical block) [specify .....] 5= Intravenous or intramuscular analgesia [specify .....] 6= Oral analgesic [specify .....] 7= No anaesthesia used 8= Other [specify .....]	1 2 3 4 5 6 7 8
__	Were postabortion family-planning services provided?	1= Yes 2= No **[Go to ....]** 3= Don t know **[Go to ....]**	1 2 3

__	What method did you choose?	1= Abstinence 2= Sterilization (female) 3= Sterilization (male) 4= Implant 5= IUD 6= Injectable 7= Oral contraceptive [specify .....] 8= Condoms (male) 9= Condoms (female) 10= Diaphragm 11= Spermicides [specify .....] 12= Sponge 13= Rhythm 14= Withdrawal 15= Traditional method [specify .....] 16= Other [specify .....] 17= No method chosen	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
__	Did you receive postabortion family-planning counselling?	1= Yes 1= No	1 2

II. QUESTIONS ABOUT SOCIO-DEMOGRAPHIC/ECONOMIC ISSUES			
__	In which town are you currently living?	**[Record response here]**	
__	How long have you lived there?	**[Time in completed years]**	
__	What is your current age?	**[Record number of complete years]**	
__	What is the highest level of formal education you have completed?	1= No school 2= Some primary school 3= Primary school 4= Some secondary school 5= Secondary school 6= Some technical school 7= Technical school 8= Some university 9= University	1 2 3 4 5 6 7 8 9
__	Can you read a newspaper easily, with some difficulty, or not at all?	1= Easily 2= With some difficulty 3= Not at all	1 2 3
__	To which ethnic group do you belong?	1= ..... 2= ..... 3= ..... 4= ..... 5= Other [specify .....]	1 2 3 4 5
__	What is your religion?	1= Traditional [specify .....] 2= Modern [specify .....] 3= Combination of traditional and modern [specify .....] 4= No religion	1 2 3 4
__	Do you yourself currently earn any income?	1= Yes 2= No	1 2
__	What is your main economic activity? **[Do not read list. Have the respondent choose only one option.]**	1= Agricultural labour 2= Market vendor 3= Office work 4= Factory work 5= Other [specify .....]	1 2 3 4 5

__	What is your current marital status?	1= Married/monogamous 2= Married/polygamous 3= Single/never married **[Go to ....]** 4= Divorced **[Go to ....]** 5= Widowed **[Go to ....]** 6= Co-habiting **[Go to ....]**	1 2 3 4 5 6
__	What is your partner s main economic activity?	1= Agricultural labour 2= Market vendor 3= Other business 4= Office work 5= Factory work 6= Other [specify .....]	1 2 3 4 5 6

III. QUESTIONS ABOUT REPRODUCTIVE HEALTH HISTORY			
__	How old were you when you first had sexual intercourse?		
__	How many times have you been pregnant (including this pregnancy loss)?		
__	How many children born alive have you had?		
__	How many children born alive are still living?		
__	How many living male children do you have?		
__	How many pregnancy losses (stillbirths, miscarriages, abortions) have you had (including the current one)?		
	How many miscarriages have you had?		
__	How many induced abortions have you had?		
__	Was the current pregnancy planned or unplanned?	1= Planned 2= Unplanned	1 2

IV. QUESTIONS ABOUT REPRODUCTIVE INTENTIONS			
__	Do you hope to have another pregnancy?	1= Yes 2= No 3= Don t know	1 2 3
__	How many more children would you like to have?	**[Record number]**	
__	How many more children would your husband/partner like to have?	**[Record number]**	
__	When do you plan to have another pregnancy? **[Then go to ....]**	1= Within next 6 months 2= Within next 1 year 3= Within next 2 years 4= Within next 3 years 5= Other [specify .....] 6= Don t know	1 2 3 4 5 6
__	How do you plan to delay your next pregnancy?	1= Abstinence 2= Sterilization (female) 3= Sterilization (male) 4= Implant 5= IUD 6= Injectable 7= Oral contraceptive [specify .....] 8= Condoms (male) 9= Condoms (female) 10= Diaphragm 11= Spermicides [specify .....] 12= Sponge 13= Rhythm 14= Withdrawal 15= Traditional method [specify .....] 16= Other [specify .....] 17= No method chosen	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
__	How do you plan to avoid getting pregnant again?	1= Abstinence 2= Sterilization (female) 3= Sterilization (male) 4= Implant 5= IUD	1 2 3 4 5

		6= Injectable 7= Oral contraceptive [specify .....] 8= Condoms (male) 9= Condoms (female) 10= Diaphragm 11= Spermicides [specify .....] 12= Sponge 13= Rhythm 14= Withdrawal 15= Traditional method [specify .....] 16= Other [specify .....] 17= No method chosen	6 7 8 9 10 11 12 13 14 15 16 17
__	Are you and your partner in agreement about your future reproductive intentions?	1= Yes 2= No 3= Don t know	1 2 3

V. QUESTIONS ABOUT HEALTH-CARE SEEKING BEHAVIOURS			
__	Before coming to this hospital did you seek help for your problem from anyone else?	1= Yes 1= No **[Go to ....]**	1 2
__	From whom did you seek help?	1= Doctor 2= Nurse 3= Midwife 4= Chemist/Pharmacist 5= Herbalist 6= Traditional birth attendant 7= Mother 8= Aunt 9= Sister 10= Other [specify .....]	1 2 3 4 5 6 7 8 9 10
__	Was this person located in your community?	1= Yes 2= No	1 2
__	How many days before coming to this hospital did you see this person?	1= Today 2= Yesterday 3= 2-4 days ago 4= 5-7 days ago 5= More than one week ago	1 2 3 4 5
__	What treatment did the person offer you?	**[Record response here]**	
__	Did the person tell you to come to this hospital to take care of your health problem?	1= Yes **[Go to ....]** 2= No	1 2
__	Why did you seek care at this hospital?	**[Record response here]**	
__	How long did it take for you to reach this hospital?	1= Less than 1 hour 2= 1 to 2 hours 3= 2 to 12 hours 4= 12 to 24 hours 5= More than 1 day	1 2 3 4 5

__	How did you get to this hospital?	1= Walk 2= Bicycle 3= Motorbike 4= Automobile 5= Public transport 6= Other [specify .....]	1 2 3 4 5 6

VI. QUESTIONS ABOUT FERTILITY CONTROL			
__	Do you know the meaning of the words FAMILY PLANNING?	1= Yes 2= No 3= Don t know	1 2 3
__	Do you know the meaning of the word CONTRACEPTION?	1= Yes 2= No 3= Don t know	1 2 3
__	What do you consider to be the ideal number of children?	1= One child 2= Two children 3= Three children 4= Four children 5= Five children 6= Six children 7= Seven children 8= Eight children 9= Nine children 10= Ten children	1 2 3 4 5 6 7 8 9 10
__	What methods to control fertility have you heard of? **[Do not prompt]**	1= Abstinence 2= Sterilization (female) 3= Sterilization (male) 4= Implant 5= IUD 6= Injectable 7= Oral contraceptives 8= Condoms (male) 9= Condoms (female) 10= Diaphragm 11= Spermicides 12= Sponge 13= Rhythm 14= Withdrawal 15= Traditional method [specify .....] 16= Emergency contraception 17= Abortion	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
__	Have you heard of the following methods? **[Read the list]**	1= Abstinence 2= Sterilization (female) 3= Sterilization (male) 4= Implant 5= IUD 6= Injectable 7= Oral contraceptives	1 2 3 4 5 6 7

		8= Condoms (male) 9= Condoms (female) 10= Diaphragm 11= Spermicides 12= Sponge 13= Rhythm 14= Withdrawal 15= Traditional method [specify .....] 16= Emergency contraception 17= Abortion	8 9 10 11 12 13 14 15 16 17
__	Have you ever used a method to control your fertility?	1= Yes 2= No **[Go to ....]**	1 2
__	Which methods have you used to control fertility? **[Then go to ....]**	1= Abstinence 2= Sterilization (female) 3= Sterilization (male) 4= Implant 5= IUD 6= Injectable 7= Oral contraceptives 8= Condoms (male) 9= Condoms (female) 10= Diaphragm 11= Spermicides 12= Sponge 13= Rhythm 14= Withdrawal 15= Traditional method [specify .....] 16= Emergency contraception 17= Abortion	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
__	Why have you not used a method to control fertility?	1= Economic reasons 2= Moral reasons 3= Religious reasons 4= Lack of knowledge 5= Partner does not approve 6= No source 7= Don t know 8= Other [specify .....]	1 2 3 4 5 6 7 8
__	Were you using a fertility-control method when you became pregnant this time?	1= Yes 2= No **[Go to ....]**	1 2

__	Which method were you using?	1= Abstinence 2= Sterilization (female) 3= Sterilization (male) 4= Implant 5= IUD 6= Injectable 7= Oral contraceptives [specify .....] 8= Condoms (male) 9= Condoms (female) 10= Diaphragm 11= Spermicides [specify .....] 12= Sponge 13= Rhythm 14= Withdrawal 15= Traditional method [specify .....] 16= Other [specify .....]	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
__	Why do you think the method failed?	1= Improper use 2= Forgot to use 3= Other [specify .....] Don t know	1 2 3 4
__	Why were you not using a fertility-control method?	1= Desired pregnancy 2= Not having regular sexual relations 3= Did not think I could become pregnant the first time 4= Opposition from husband 5= Lack of knowledge about methods 6= Unable to obtain a method 7= Methods too expensive 8= Fear of side effects 9= Actual side effects 10= Other [specify .....]	1 2 3 4 5 6 7 8 9 10
__	Where is the best place to obtain information about fertility-control methods?	1= Family planning clinic 2= Health centre 3= Home 4= School 5= Other [specify .....]	1 2 3 4 5

__	Who is the best person from whom to obtain information about fertility-control?	1= Doctor 2= Nurse 3= Midwife 4= Traditional birth attendant 5= Contraceptive-based distributor 6= Aunt 7= Mother 8= Elder sister 9= Teacher 10= Friend 11=Other [specify .....]	1 2 3 4 5 6 7 8 9 10 11
__	Where is the best place to obtain a fertility-control method?	1= Family-planning clinic 2= Health centre 3= Home 4= School 5= Other [specify .....]	1 2 3 4 5
__	Who is the best person from whom to obtain a fertility-control method?	1= Doctor 2= Nurse 3= Midwife 4= Traditional birth attendant 5= Contraceptive-based distributor 6= Other [specify .....]	1 2 3 4 5 6
__	Would you prefer the person who provides you with fertility-control information and method be female or male or does it not matter?	1= Female 2= Male 3= Does not matter	1 2 3
__	Does your partner support your use of a method to delay or avoid pregnancy?	1= Yes 2= No 3= Don t know	1 2 3
__	Do you think all women treated for abortion complications should be offered the contraceptive of their choice?	1= Yes 2= No 3= Don t know	1 2 3
__	Do you think women and men should have to pay for contraceptives they obtain from government clinics?	1= Yes 2= No 3= Don t know	1 2 3
__	How could the government make it easier for women to learn about fertility-control methods?	**[Record response here]**	

__	How could the government make it easier for women to obtain fertility-control methods?	**[Record response here]**	
__	Do you have regular menstrual cycles?	1= Yes 2= No **[Go to ....]** 3= Don t know	1 2 3
__	If yes, after how much time (days) of delayed menstruation would you suspect that you are pregnant?	**[Record number of days]**	
__	Do you know the circumstances that allow for legal abortion in this country?	1= Yes 2= No **[Go to ....]** 3= Don t know **[Go to ....]**	1 2 3
__	What are the circumstances that allow for legal termination of pregnancy?	**[Record response here]**	
__	What do you think are the circumstances that should make a woman eligible to obtain a legal abortion?	**[Record response here]**	
__	Do you think that women who become pregnant while using contraception should be allowed to terminate an unwanted pregnancy?	1= Yes 2= No 3= Don t know	1 2 3
__	Do you think that women who are HIV positive should be allowed to terminate an unwanted pregnancy?	1= Yes 2= No 3= Don t know	1 2 3

__	Do you think that women who have AIDS should be allowed to terminate an unwanted pregnancy?	1= Yes 2= No 3= Don t know	1 2 3
__	Who should care for children orphaned by AIDS?	1= Relatives 2= Government 3= Church 4= Friends 5= Other [specify .....]	1 2 3 4 5
__	Is HIV/AIDS a serious problem in this town?	1= Yes 2= No 3= Don t know	1 2 3

VII. QUESTIONS ABOUT ABORTION-CARE SERVICE DELIVERY			
1) Pre-procedure			
__	From the time that you arrived at the hospital until the time that someone first examined you, do you think the waiting time was appropriate or too long?	1= Appropriate 2= Too long 3= Not sure	1 2 3
__	Before the procedure, who examined you?	1= Doctor 2= Nurse 3= Midwife 4= Other [specify .....]	1 2 3 4
__	Did this person treat you respectfully, with indifference, or disrespectfully?	1= Respectfully 2= Indifference 3= Disrespectfully 4= Other [specify .....]	1 2 3 4
__	Did the person give you any information about your health or physical condition?	1= Yes 2= No **[Go to ....]**	1 2
__	Did you understand this information?	1= Yes 2= No 3= Not sure	1 2 3
__	Did the person give you any information about what would happen during the procedure?	1= Yes 2= No 3= Don t remember	1 2 3
__	Did the person give you the opportunity to ask questions?	1= Yes 2= No 3= Don t remember	1 2 3
__	Were you examined by a man or a woman?	1= Man 2= Woman	1 2
__	What would be your preference?	1= Male 2= Female 3= Indifferent	1 2 3
__	Why do you have this preference?	**[Record response here]**	

2) Procedure			
__	From the time that you were first examined until the time the procedure began, was your wait appropriate or too long?	1= Appropriate 2= Too long 3= Don t know	1 2 3
__	Were you awake or asleep during the procedure?	1= Awake 2= Asleep **[Go to ....]**	1 2
__	Who performed the procedure?	1= Doctor 2= Nurse 3= Midwife 4= Other [specify .....]	1 2 3 4
__	Did this person treat you respectfully, with indifference, or disrespectfully?	1= Respectfully 2= Indifference 3= Disrespectfully 4= Other [specify .....]	1 2 3 4
__	Did the person explain what was happening during the procedure?	1= Yes 2= No **[Go to ....]** 3= Don t remember	1 2 3
__	Did you understand the information that you were given?	1= Yes **[Go to ....]** 2= No **[Go to ....]** 3= Don t know	
__	Did you want to know what was happening during the procedure?	1= Yes 2= No 3= Don t know	1 2 3
__	Did the person treating you console you during the procedure?	1= Yes 2= No 3= Don t remember	1 2 3
__	Did you feel any pain during the procedure?	1= Yes 2= No	1 2
__	Were you given any medication to ease the pain?	1= Yes 2= No 3= Don t remember	1 2 3

3) Post-procedure			
__	Who examined you after the procedure?	1= Doctor 2= Nurse 3= Midwife 4= No one 5= Other [specify .....]	1 2 3 4 5
__	Were you treated respectfully, with indifference, or disrespectfully by this person?	1= Respectfully 2= Indifference 3= Disrespectfully 4= Other [specify .....]	1 2 3 4
__	Did this person explain how to care for yourself after leaving the hospital?	1= Yes 2= No 3= Don t remember	1 2 3
__	Did the person explain that you can immediately become pregnant once again?	1= Yes 2= No 3= Don t remember	1 2 3
__	Do you have an appointment for a follow-up visit?	1= Yes 2= No	1 2
__	Were you given any information about fertility control?	1= Yes 2= No	1 2
__	Did the person who gave you information treat you respectfully, with indifference, or disrespectfully?	1= Respectfully 2= Indifference 3= Disrespectfully 4= Other [specify .....]	1 2 3 4
__	Were you encouraged to ask questions?	1= Yes 2= No	1 2
__	Were you given a modern contraceptive method?	1= Yes 2= No **[Go to ....]**	1 2
__	What method did you choose?	1= Abstinence 2= Sterilization (female) 3= Sterilization (male) 4= Implant 5= IUD 6= Injectable 7= Oral contraceptives [specify .....]	1 2 3 4 5 6 7

		8= Condoms (male) 9= Condoms (female) 10= Diaphragm 11= Spermicides [specify .....] 12= Sponge 13= Rhythm 14= Withdrawal 15= Traditional method [specify .....] 16= Other [specify .....] 17= No method chosen	8 9 10 11 12 13 14 15 16 17
__	Who provided you with this information?	1= Counsellor 2= Doctor 3= Nurse 4= Midwife	1 2 3 4
__	Were you told where you could get contraceptives in your community?	1= Yes 2= No	1 2
__	If you were a nurse or doctor, how would you provide family-planning services?	**[Record response here]**	

VIII. COST OF SERVICES			
__	During this visit, did you pay for the services you received at this hospital?	1= Yes 2= No **[Go to ....]**	1 2
__	How much did you pay?	**[Record amount in local currency]**	
__	Do you think that this amount is appropriate or too much?	1= Appropriate 2= Too much 3= Don t know	1 2 3

IX. CLOSURE	
Thank you very much for your time and responses. Do you have any questions you would like to ask me?	**[Record response here]**

If conducting a follow-up study, the interviewer should read a prepared statement about the next interview such as:

I understand that you have agreed to return on ....., exactly 3 months from today, for a follow-up interview. Here is your appointment card **(present card)**. We will send you another reminder by mail one week before your appointment. If you forget, we will try to contact you by telephone or by visiting you at your home. If we conduct a home interview, it will be conducted in complete privacy or not at all.

Please remember, you may discontinue your participation in this study at any time for any reason.

Thank you, have a safe trip home.

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