# Unsafe abortion

Global and regional estimates of the incidence of unsafe abortion and associated mortality in 2000

Fourth edition



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Authors: Elisabeth Ahman, Iqbal Shah

Editing: Patricia Butler

Editing web bibliography: Frederick Schlagenhaft

Cover and layout: Maureen Dunphy

#### **Abstract**

Unsafe abortion is entirely preventable. Yet, it remains a significant cause of maternal morbidity and mortality in much of the developing world. Over the past decade, the World Health Organization has developed a systematic approach to estimating the regional and global incidence of unsafe abortion and the mortality associated with it. Estimates based on figures for the year 2000 indicate that 19 million unsafe abortions take place each year, that is, approximately one in ten pregnancies end in an unsafe abortion, giving a ratio of one unsafe abortion to about seven live births. Almost all unsafe abortions occur in developing countries.

Women who resort to unskilled or untrained abortion providers put their health and life at risk. Worldwide an estimated 68 000 women die as a consequence of unsafe abortion. In developing countries the risk of death is estimated at 1 in 270 unsafe abortion procedures. Where contraception is inaccessible or of poor quality, many women will seek to terminate unintended pregnancies, despite restrictive laws and lack of adequate abortion services. Prevention of unplanned pregnancies by improving access to quality family planning services must therefore be the highest priority, followed by improving the quality of abortion services, where legal, and of post-abortion care.

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#### 1. Introduction

Lach year, throughout the world, approximately 210 million women become pregnant<sup>1</sup> and some 130 million<sup>2</sup> of them go on to deliver live-born infants. As many as 80 million pregnancies are unplanned.<sup>1</sup> Some of these are carried to term, while others end in spontaneous or induced abortion. Estimates indicate that 46 million pregnancies are voluntarily terminated each year—27 million<sup>1</sup> legally and 19 million outside the legal system. In the latter case the abortions are often performed by unskilled providers or under unhygienic conditions or both.

Unsafe abortion is one of the neglected problems of health care in developing countries. It is characterized by inadequacy of skills on the part of the provider and use of hazardous techniques and unsanitary facilities. Hence, the women who resort to clandestine facilities and/or unqualified providers put their health and life at risk. The World Health Organization (WHO) is concerned with the public health aspects of unsafe abortion. As early as 1967, the World Health Assembly passed Resolution WHA20.41, which stated that "abortions ... constitute a serious public health problem in many countries ...", and requested the Director-General to "continue to develop the activities of the World Health Organization in the field of health aspects of human reproduction ...". WHO defines unsafe abortion as a procedure for terminating an unintended pregnancy carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both.<sup>3</sup>

At the 1994 International Conference on Population and Development (ICPD) in Cairo, Egypt, governments agreed that:

"In no case should abortion be promoted as a method of family planning. All Governments and relevant intergovernmental and non-governmental organizations are urged to strengthen their commitment to women's health, to deal with the health aspect of unsafe abortion as a major public health concern and to reduce the recourse to abortion through expanded and improved family-planning services. Prevention of unintended pregnancies must always be given the highest priority and every attempt should be made to eliminate the need for abortion. Women who have unintended pregnancies should have ready access to reliable information and compassionate counselling. Any measures or changes related to abortion within the health system can only be determined at the national or local level according to the national legislative process. In circumstances where abortion is not against the law, such abortion should be safe. In all cases, women should have access to quality services for management of complications arising from abortion. Post-abortion counselling, education and family-planning services should be offered promptly, which will also help to avoid repeat abortions."<sup>4</sup>

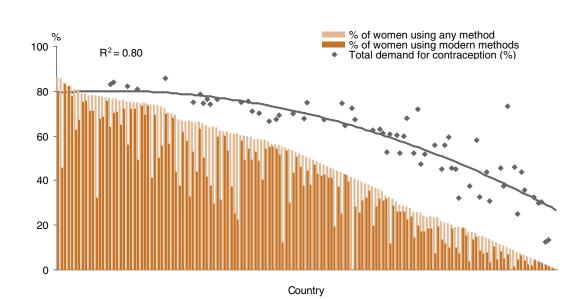
The above was reiterated at the five-year review of the implementation of the ICPD Programme of Action<sup>5</sup> in New York, USA, further emphasizing that preventing unintended pregnancy through improved and expanded family planning services must be given the highest priority and that all attempts should be made to reduce the need for abortion, which in no case should be promoted as a method of family planning.

## 2. Unplanned pregnancies and family planning

It has been estimated that almost two in every five pregnancies worldwide are unplanned — the result of non-use of contraception or of ineffective contraceptive use or method failure. The 1994 ICPD Programme of Action demphasizes that expanding and improving family planning services can help reduce unintended pregnancy and induced abortion. However, family planning services are frequently unable to meet the demand, or may be inaccessible or unaffordable, or there may be a range of social barriers that prevent women and couples from using them. Studies show that

many married women in developing countries do not have access to the contraceptive methods they would prefer to use in order to space pregnancies or limit family size.<sup>6,7</sup> The situation is worse for unmarried women, particularly adolescents, who rarely have access to reproductive information and counselling, and are frequently excluded from contraceptive services.

The magnitude of the unmet need for contraception in countries is indicated in Figure 1 by the area between the curve for projected total demand for contraception and current use of all (modern and traditional) contraceptive methods. In addition, it should be noted that reliance on traditional family planning methods—an important part of current contraceptive use—represents additional increased risk for unplanned pregnancies.



**Figure 1**. Proportions of women currently using any contraceptive method, those using modern methods and those who need contraception

Sources: Demographic and Health Surveys (DHS), and United Nations Population Division<sup>8</sup>

When motivation to regulate fertility is strong but effective contraception is largely inaccessible, a large number of unplanned pregnancies will occur. During the rapid transition from high to low fertility, as witnessed in several countries, contraceptive services are often unable to meet the growing demand of couples for fertility regulation; this results in unplanned pregnancies, some of which are terminated by abortion. Also, where less effective methods are commonly used, unplanned pregnancies and, consequently, abortions are likely to occur. Unintended pregnancies also occur as a result of method failure or ineffective use, particularly with traditional and user-dependent methods.

Statistical models suggest that higher contraceptive prevalence and greater use of effective contraceptive methods will result in a reduced incidence of abortion. Using data from developed countries Marston & Cleland tecently demonstrated the validity of this model. They also showed that when fertility is on the decline, abortion and contraceptive use can rise simultaneously. The authors' explanation for this is that contraceptive use alone is unable to meet the growing demand for fertility regulation. As early as in 1962 similar trends were observed in Santiago, Chile. Consistent with these observations, current estimates of unsafe abortion and contraceptive use by fertility level in developing countries show similar trends. For example, sterilization is the most common modern contraceptive method in some parts of the world, such as Latin America and South-central Asia. It is possible that women resort to unsafe abortion to space births before terminating childbearing through sterilization. It is therefore essential not only to make

contraception available, but also to offer an appropriate choice of contraceptive methods to meet the individual needs of women who want to space or limit births.

# 3. Legal framework of abortion

The incidence of unsafe abortion is affected by legal provisions governing access to safe abortion, as well as the availability and quality of legal abortion services. Restrictive legislation is associated with a high incidence of unsafe abortion. The outcome of complications of unsafe abortion will depend not only on the availability and quality of post-abortion services, but also on women's willingness to turn to hospitals in the event of complications, and the readiness of medical staff to extend services. It is thus the number of maternal deaths, not abortions, that is the most visible consequence of legal codes.<sup>13</sup> In the case of Romania, for example, the number of abortion-related deaths increased sharply after November 1966, when the government tightened a previously liberal abortion law (Figure 2). The figure rose from 20 to 100 000 live births in 1965 to almost 100 in 1974 and 150 in 1983.<sup>14</sup> Abortions were legalized again in December 1989 and, by the end of 1990, maternal deaths caused by abortion dropped to around 60 to 100 000 live births.

180 Deaths per 100 000 live births 160 Abortion legalized 140 120 100 80 60 40 Abortion Abortion deaths restricted 20 Total maternal deaths 

Figure 2. Number of maternal deaths to 100 000 live births, by year, Romania, 1960–1996

Source: World health statistics annual, various years

Table 1 outlines the conditions under which abortion is legally permitted in various countries. Abortion laws can be complex and diverse. There may be discrepancies between the exact wording of the law (*de jure*) and its application (*de facto*), which means that common practice can help or hinder the procurement of legal abortion. There may be additional requirements regarding consent and counselling, etc., and countries often impose a limit on the period during which women can access the procedure.

In some countries access is highly restricted; for example, in Chile, El Salvador, the Holy See, and Malta abortion is not permitted on any grounds. In others, pregnancy termination is available on broad medical and social grounds or on demand. Sometimes, however, even where induced abortion is legal, cumbersome rules may present overwhelming obstacles to women, attitudes of medical staff may be discouraging, and abortion services may be insufficient to meet the demand or inadequately distributed or of poor quality. In addition, women may be unaware of the availability of abortion services or their right to access within the legal framework.

Table 1. Grounds on which abortion is permitted

	To save the woman's life	To preserve physical health	To preserve mental health	Rape or incest	Fetal impair- ment	Economic or social reasons	On request
All countries (n = 193)							
Permitted	189	122	120	83	76	63	52
Not permitted	4	71	73	110	117	130	141
Developed countries (n = 48)							
Permitted	46	42	41	39	39	36	31
Not permitted	2	6	7	9	9	12	17
Developing countries (n = 145)							
Permitted	143	80	79	44	37	27	21
Not permitted	2	65	66	101	108	118	124

Source: United Nations<sup>15</sup>

## 4. Health consequences of unsafe abortion and impact on health services

The mortality and morbidity risks associated with unsafe induced abortion depend on the facilities and the skill of the abortion provider, the method used, the general health of the woman and the stage of her pregnancy. Unsafe abortion may be induced by the woman herself, by a non-medical person or by a health worker under unhygienic conditions. Such abortions may be induced by insertion of a solid object (root, twig or catheter) into the uterus; an improperly performed dilatation and curettage procedure by an unskilled provider; ingestion of harmful substances; exertion of external force; or unauthorised use of modern pharmaceuticals, such as misoprostol.

Some women rely on unskilled providers for pregnancy termination, even though medical services are available. While menstrual regulation (MR) is available in rural health facilities in Bangladesh, one study in 1996–1997 showed that only 58 of 143 women seeking abortion turned first to health facilities, while others saw two or three providers; in the end, four of the women had to be referred to the district hospital with serious complications, and one died. Untrained practitioners included traditional birth attendants, homeopaths, herbalists, religious healers, village doctors and relatives.<sup>16</sup>

A study in Ilorin, Nigeria, in 1992–1994, which included 144 women who underwent abortion, half of whom were under 20 years of age, reported typical complications: death, 9%; sepsis, 27%; anaemia (haemorrhage), 13%; sepsis with anaemia, 3%; cervical tear, 5%; pelvic abscess, 3%; uterine perforation with peritonitis, 3%; injury to gut, 4%; chemical vaginitis, 4%; laceration of vaginal wall, 3%; and vesicovaginal fistula, 1%. Only 25% had no complications. 17 Severe complications, such as sepsis, haemorrhage, genital and abdominal trauma, perforated uterus and poisoning due to ingestion of harmful substances, may be fatal if left untreated. Death may also result from secondary complications such as acute renal failure. Unsafe abortion may lead to reproductive tract infections (RTIs), chronic pelvic pain, pelvic inflammatory disease (PID), and at times to infertility; genital trauma and infection may also warrant an immediate hysterectomy. An increased risk of ectopic pregnancy, premature delivery, or spontaneous abortion in subsequent pregnancies is another possible consequence of a poorly performed abortion. Women with a sexually transmitted infection (STI) are at increased risk of an ascending postabortion infection. 18,19,20,21 The risk of infertility<sup>22</sup> increases with each episode of PID and salpingitis. 23 Studies indicate that about 20-30% of unsafe abortions may lead to RTI, of which between 20% and 40% lead to PID and consequent infertility. It has been estimated that the prevalence of infertility and long-term RTI as a consequence of unsafe abortion corresponds to 2% and 5%, respectively, of women of reproductive age.24

The risks involved also depend on the availability of facilities for the treatment of complications. In some countries, it is not uncommon to find that half of all obstetric admissions are for complications of unsafe abortion, <sup>25,26,27,28</sup> which undoubtedly compromises other maternity and emergency services. <sup>29,30,31</sup> Whereas a spontaneous or an uncomplicated abortion may require up to three days of hospitalization, complicated cases may need a hospital stay five times longer. The treatment of abortion complications in hospital consumes a significant share of resources, including hospital beds, blood supply, and medication, and often requires access to operating theatres, anaesthesia and medical specialists. Thus, the consequences of unsafe abortion place great demands on the scarce clinical, material and financial resources of hospitals in many developing countries. <sup>30,32</sup> Major social, financial and emotional costs are also incurred by the women who undergo unsafe abortion.

Unsafe abortion is a serious concern to women during their reproductive lives. Contrary to common belief, the majority of women seeking abortion are married or live in stable unions and already have several children. <sup>33,34,35,36,37,38</sup> They use abortion to limit family size or space births. They may resort to abortion in the event of contraceptive failure or because of the lack of access to modern contraception. However, in all parts of the world, particularly in urban areas, an increasing percentage of those having abortions are unmarried adolescents; in some urban centres, they represent the majority of all abortion seekers.

When induced abortion is performed by qualified persons using correct techniques and in sanitary conditions, it is a very safe surgical procedure. In the USA, for example, the death rate from abortion is 0.6 per 100 000 procedures, making it as safe as an injection of penicillin.<sup>39</sup> In developing countries, however, the risk of death following unsafe abortion procedures may be several hundred times higher than that of an abortion performed professionally under safe conditions. Abortion-related maternal mortality is therefore high. Table 2 shows the mortality risk associated with selected health procedures in developing countries and in the USA.

Table 2. Mortality risks associated with pregnancy and selected health procedures

Durandama	Deaths per 100 000 cases				
Procedure	Developing countries*	USA			
Legal abortion	4–6	1			
Female sterilization	10–100	4			
Delivery of live birth	250–800	14			
Caesarean section	160–220	41			
Illegal abortion	100–1000	50			
Hysterectomy	300–400	160			

<sup>\*</sup> Estimated

Source: Population Crisis Committee<sup>40</sup>

## 5. Estimating the incidence of unsafe abortion

#### 5.1 Data on unsafe abortion

In all countries, access to induced abortion is dependent on the legal framework. Where induced abortion is restricted and largely inaccessible, or legal but difficult to obtain, little information is available on abortion practice. Its occurrence tends to be unreported or under-reported, and it is therefore difficult to quantify and classify abortion in such circumstances. What information is available is inevitably not completely reliable because of legal, ethical and moral constraints that hinder reporting.

Whether legal or illegal, induced abortion is generally stigmatized and frequently censured by religious teaching. Women are often reluctant to admit to an induced abortion, especially when it is illegal. Surveys show that under-reporting 41,42,43,44 occurs even where abortion is legal. When abortions are clandestine they may not be reported at all or reported as spontaneous abortion (miscarriage). 45.46 The language used to describe induced abortion reflects this ambivalence: terms include induced miscarriage (*fausse couche provoquée*), 47 menstrual regulation, or "regulation of a delayed or suspended" menstruation. 48 It is therefore not surprising that unsafe abortion is one of the most difficult indicators to measure.

#### 5.2 WHO's database on unsafe abortion

The WHO Department of Reproductive Health and Research (RHR) maintains a database on unsafe abortion and associated mortality, as part of a broader database on women's reproductive health, including maternal mortality and coverage of maternity care. Information relevant to unsafe abortion includes hospital and survey data, legal developments, and research on abortion providers, unsafe abortion methods, and abortion-seeking behaviour. Information is collected from searches of journals, library and other databases, by tracing references, from WHO-supported country studies, other United Nations (UN) agencies, conference papers, unpublished reports, national authorities, and nongovernmental and other organizations. Published and unpublished reports and papers are screened for the scientific rigour of the study, and relevant information and data are included in the database on study design, coverage, and sample size and characteristics. Sources of other information are included in the bibliographic section of the database, with appropriate key words. A selection of important documentation is included in the bibliography in Annex 5 of the web version of this document (available on: www.who.int/reproductive-health/pages\_resources/listing\_ unsafe abortion.html).

The database is an important resource, from which estimates of unsafe abortion can be generated on a global or regional basis. This was done in 1993<sup>49</sup> and again in 1997<sup>50</sup>. We demonstrate below how, for the current exercise, estimates of this indicator were developed using numerical data from the database, corroborated by other demographic data and research. These estimates were validated against information from other sources on fertility, use of modern and traditional contraceptive methods, and other proximate determinants of fertility.

# 5.3 Methods and assumptions for estimating incidence of unsafe abortion and associated mortality<sup>a</sup>

Abortion statistics are notoriously incomplete. Where induced abortion is restricted or illegal, its occurrence can be estimated only indirectly.<sup>51</sup> As there are no feasible data collection methods that can reliably reflect the overall burden of unsafe abortion, one is left to work with incomplete information on incidence and mortality from community studies or hospitals. This is then adjusted to correct for misreporting and under-reporting, using information on abortion laws and their application, providers of unsafe abortion, common methods of unsafe abortion and other pertinent information. The adjustments depend largely on the methods commonly used to perform the abortion, and assumptions about the relative incidence of unsafe abortion in rural and urban areas.

<sup>&</sup>lt;sup>a</sup> The methodology is described in detail in Annex 1

The estimation procedure used in this update started with an in-depth review of close to 500 recent reports containing data on abortion or information on abortion methods, abortion providers, access and legal developments. In addition, over 1400 entries in the database for 1980 or later were reassessed to ascertain important developments. Incidence data for all large and most medium-sized countries were available to calculate country estimates, as described in Annex 1.

In general, information is available on the unsafe abortion ratio, i.e. the number of unsafe abortions to 100 live births; this was therefore used to calculate the incidence of unsafe abortion by country. The ratio was calculated from hospital or community studies providing abortion data and birth data for the same period. On the rare occasions when they were available, national estimates of unsafe abortion from reports were used.

The annual unsafe abortion ratio was estimated after adjustment for under-reporting. Adjustments took into account the existing abortion law and its application, 52,53,54 information on the providers of unsafe abortions, prevalent abortion methods, and cultural and rural/urban differences. For every country the resulting estimate was finally assessed for consistency in the light of the total fertility rate (TFR);² reported contraceptive prevalence¹² and trends, where available; and unmet need for family planning, where available.<sup>6,7</sup> For the purpose of these calculations and to circumvent the problem of induced abortion being misreported as spontaneous abortion, it was considered more reliable to use the combined incidence of spontaneous and induced abortion, when available, and to correct for the incidence of spontaneous abortion.<sup>55</sup> Calculations took account of the fact that unsafe abortion ratios are lower in rural than in urban areas, <sup>56,57,58</sup> generally with the assumption that the abortion ratio in rural areas is half that in urban areas. By extension, it was also assumed that subnational data could be extrapolated to country level with adjustments.

Unsafe abortion is estimated from hospital data, as suggested by Singh & Wulf,<sup>55</sup> by adjusting the abortion/live birth ratio for the expected percentage (3.4%) of spontaneous abortions that occur at 13–22 weeks' gestation; these are assumed to require hospital treatment, whereas women in developing countries who have a miscarriage before 13 weeks rarely turn to a hospital. Intercountry differences in the tendency to use hospitals for pregnancy-related conditions were assumed to apply equally to treatment of abortion complications and deliveries. The hospital unsafe abortion ratio – the "tip of the iceberg" – was further adjusted, generally using a multiplier between 2 and 5,<sup>55</sup> (except in cases where a specific multiplier was available)<sup>59</sup> based on the assumption that most induced abortions do not lead to complications requiring hospitalization (generally the higher the factor, the "safer" the abortions provided). If not based on national data, the unsafe abortion/live birth ratio was finally corrected for the presumed lower abortion ratio in rural areas, by weighting using the United Nations estimates of urban and rural populations.<sup>60</sup>

Community studies of abortion generally report results in relation to number of births, or may report the proportion of women of reproductive age who have ever had an induced unsafe abortion or who have had one in the past year. Rates of women who have ever had an abortion were converted into annual rates. The corresponding abortion ratio was calculated using United Nations estimates of the numbers of women of reproductive age and of live births for the time of the survey, corrected for under-reporting and adjusted for spontaneous abortions, if included.

For a few countries a national estimate of the incidence or number of unsafe abortions was available from a dependable source and was used to calculate the abortion ratio. A small number of countries for which no information was available were assumed to have the same ratio as other countries in the region, or as other countries with similar abortion laws, fertility and contraceptive use.

Abortion-related mortality occurs mainly as a result of unsafe abortion, since spontaneous abortion is only rarely a cause of death. Unsafe abortion-related mortality is likely to be under-reported because of the stigma attached to abortion. To estimate the number of maternal deaths resulting from unsafe abortion, the starting-point was information on abortion deaths as a percentage of all maternal deaths. Where available, information from community studies was used. For many

countries, information came from hospital studies, where reporting of maternal deaths due to unsafe abortion depends on the tendency of women to seek hospital care when faced with complications. However, the proportion of maternal deaths due to unsafe abortion in hospital-based studies reasonably approximates the proportion in the community. Where relevant, adjustments were made for rural/urban differences. Countries for which no data were available were assumed to have a similar proportion of maternal deaths as countries with comparable abortion laws, cultural setting and indicators such as fertility rate and percentage urban population.

# 5.4 Estimating regional and global incidence of unsafe abortion and associated mortality

The number of unsafe abortions was estimated for each country by applying the adjusted unsafe abortion ratio to the number of births in the year 2000 as estimated by the United Nations Population Division.<sup>2</sup> These figures were then aggregated to arrive at regional and global estimates for the geographical regions defined by the United Nations (UN)<sup>2</sup> (see Annex 2).

The number of deaths due to unsafe abortion was estimated for each country by applying the estimated proportion of maternal deaths caused by abortion-related complications to the estimated number of maternal deaths<sup>61</sup> for the year 2000. These figures were then aggregated to arrive at regional and global estimates.

Regional and global estimates aggregated from country estimates are quite consistent. Nevertheless, estimates of the incidence of unsafe abortion and resulting maternal mortality have some degree of uncertainty because of the assumptions and adjustments made. Results are therefore indicative rather than precise estimates. They should be considered as best estimates given the information currently available.

# 6. Unsafe abortion incidence and mortality ratios and rates

The absolute number of unsafe abortions cannot be compared meaningfully between different regions and subregions because of differing population size. Ratios and rates are therefore calculated to allow such comparisons. Unsafe abortion incidence and mortality are calculated as ratios or rates as outlined below.

**Unsafe abortion incidence ratio**: The unsafe abortion ratio is the number of unsafe abortions to 100 live births (as a proxy for all pregnancies). The unsafe abortion ratio indicates the relative chance that a pregnancy will end in unsafe abortion rather than a live birth.

**Unsafe abortion incidence rate**: The unsafe abortion rate is the number of unsafe abortions per 1000 women of reproductive age (15–44 years) per year. This measure describes the level of unsafe abortion in a population. It indicates the proportion of women of reproductive age who are likely to experience an unsafe abortion in a given year.

**Unsafe abortion mortality ratio**: The unsafe abortion mortality ratio is the number of deaths due to unsafe abortion to 100 000 live births.<sup>b</sup> This is a subset of the maternal mortality ratio and measures the risk of dying due to unsafe abortion in comparison to the number of live births.

**Unsafe abortion case-fatality rate:** The unsafe abortion case fatality expresses the estimated number of deaths per 100 unsafe abortion procedures. This rate expresses the mortality risk associated with the procedure.

<sup>&</sup>lt;sup>b</sup> The number of live births serves as a proxy for the number of pregnancies. A more appropriate denominator would be the total number of pregnancies (live births, stillbirths, induced and spontaneous abortions, ectopic pregnancies), but this figure is rarely available. Live births are therefore used in the denominator for international comparisons.

Unsafe-abortion-related proportion of maternal deaths: The proportion of maternal deaths due to unsafe abortion is the number of abortion deaths per 100 maternal deaths. When maternal mortality is relatively low and where other causes of maternal death have already been substantially reduced, a small number of unsafe abortion deaths may account for an important proportion of maternal deaths. This measure is therefore influenced by the overall level of maternal mortality and various causes of maternal deaths in a country.

# 7. Regional and global incidence of unsafe abortion

#### 7.1 Global estimates

Figures 3 to 5 and Table 3 show the estimated incidence of unsafe abortion and related indicators, globally and by United Nations region<sup>c</sup> and subregion. Worldwide, the estimates indicate that 19 million unsafe abortions were carried out in 2000, i.e. approximately one in ten pregnancies ended in an unsafe abortion, giving a ratio of one unsafe abortion to about seven live births. For the period around 1995, 20 million unsafe abortions per year were estimated.<sup>50</sup> Because of possible differences in reporting and coverage, however, it is difficult to draw any conclusions about general trends by comparing the two figures. Nevertheless, it is possible that, because of increasing contraceptive use, women may be having fewer unsafe abortions, as also suggested by Figure 6. The picture for unsafe abortion ratio (unsafe abortions relative to live births) is more complex as it is also related to changes in fertility.

The unsafe abortion incidence rate in developing regions typically falls within a narrow range of 20–30 unsafe abortions per 1000 women of reproductive age. This shows that, whenever safe abortion services are unavailable, women all over the world have a similar propensity to turn to unsafe abortion when faced with an unintended pregnancy. However, the abortion ratio does not necessarily follow the same pattern, as it is influenced by the level of fertility. This is especially true for the three high-fertility regions (Eastern, Middle and Western) of sub-Saharan Africa , which have low or moderate unsafe abortion ratios, and nevertheless show high rates (22 to 31) of unsafe abortions per 1000 women aged 15–44 years.

The magnitude of unsafe abortions in developing countries becomes even more striking if Eastern Asia (which has hardly any unsafe abortions) is excluded from the average rate and ratio: the unsafe abortion rate for developing countries then increases from 16 to 23 per 1000 women aged 15–44 years and the unsafe abortion/live birth ratio for developing countries from 15 to 19. A similar effect is noticed for maternal mortality due to unsafe abortion.

Figure 5 and the last column in Table 3 show the unsafe abortion mortality ratio, i.e. unsafe-abortion-related maternal deaths to 100 000 live births, by subregion. Overall, the unsafe abortion mortality ratio is suitable for comparison between regions and subregions, although very high or very low fertility levels may under- or overemphasize its relative importance. The proportion of maternal deaths due to unsafe abortion is however relatively complex to interpret. In countries where maternal mortality is relatively low and other causes of maternal deaths have already been substantially reduced, a small number of deaths due to unsafe abortion may account for a significant proportion of maternal deaths. This is, for example, the case in Eastern Europe, which has the highest proportion of maternal deaths due to unsafe abortion, although the actual number of deaths is small. The situation is similar in some countries of Latin America, where maternal mortality is relatively low and abortion deaths are an important – sometimes the main – cause of maternal mortality.

<sup>&</sup>lt;sup>c</sup> Estimates are calculated for geographical regions and subregions, as defined by the United Nations, for ease of presentation. Countries, subregions and regions are listed in Annex 2. Estimates for WHO regions are given in Annex 3.

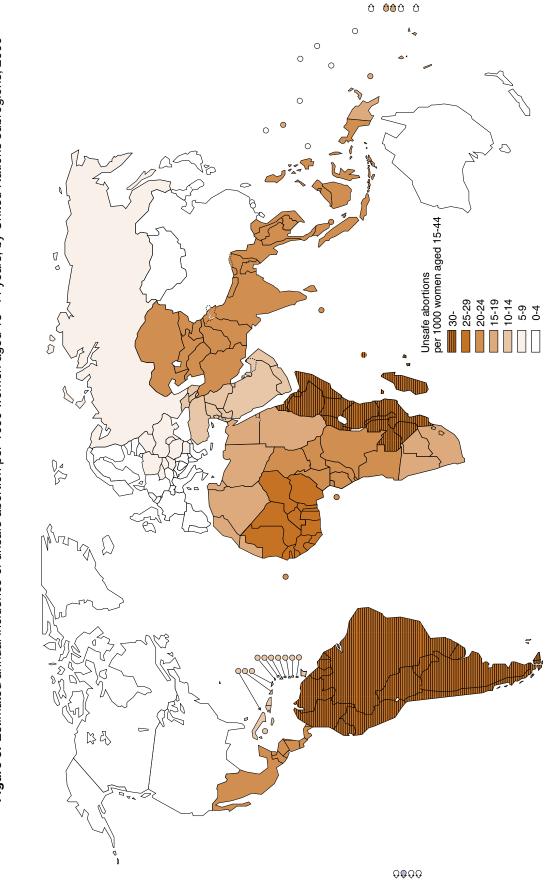
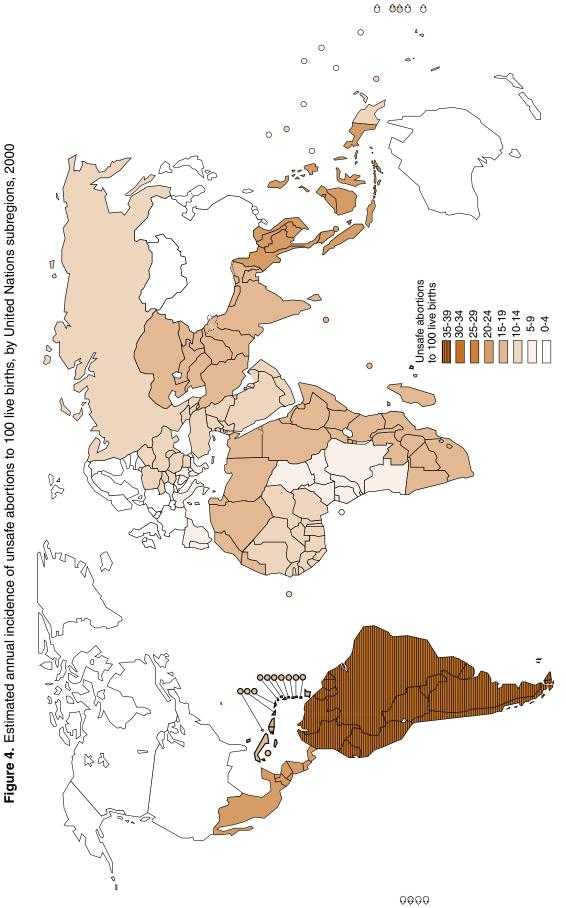
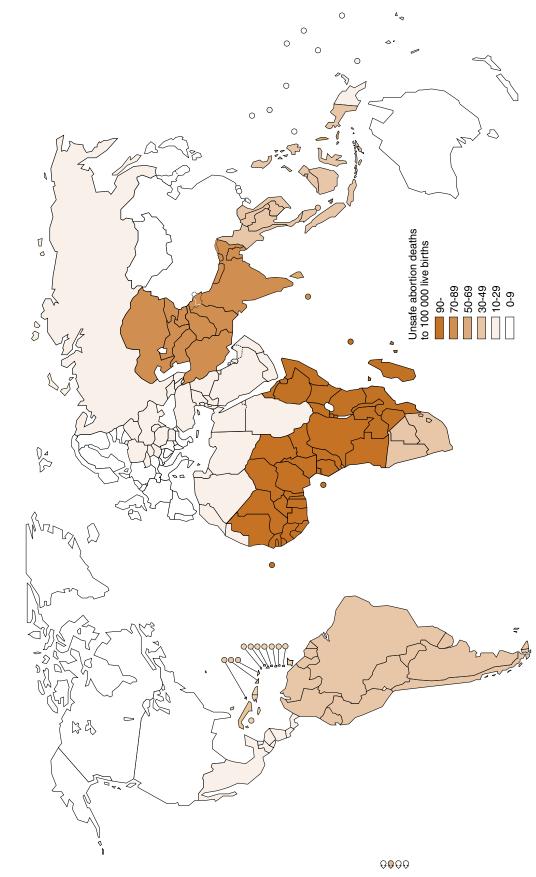


Figure 3. Estimated annual incidence of unsafe abortion per 1000 women aged 15-44 years, by United Nations subregions, 2000

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Figure 5. Estimated annual maternal deaths due to unsafe abortion to 100 000 live births, by United Nations subregions, 2000

The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dashed lines represent approximate border lines for which there may not yet be full agreement.

**Table 3.** Global and regional estimates of annual incidence of unsafe abortion and mortality due to unsafe abortion, by United Nations region, around the year 2000<sup>a</sup>

	Unsafe abortion incidence		Mortality	due to unsafe	abortion	
	Number of unsafe abortions (thousands)	Unsafe abortions to 100 live births	Unsafe abortions per 1000 women aged 15–44	Number of maternal deaths due to unsafe abortion	% of all maternal deaths	Unsafe abortion deaths to 100 000 live births
World	19 000	14	14	67 900	13	50
Developed countries*	500	4	2	300	14	3
Developing countries	18 400	15	16	67 500	13	60
Africa	4200	14	24	29 800	12	100
Eastern Africa	1700	16	31	15 300	14	140
Middle Africa	400	9	22	4900	10	110
Northern Africa	700	15	17	600	6	10
Southern Africa	200	16	17	400	11	30
Western Africa	1200	13	25	8700	10	90
Asia*	10 500	14	13	34 000	13	40
Eastern Asia*	0	0	0	0	0	0
South-central Asia	7200	18	22	28 700	14	70
South-eastern Asia	2700	23	21	4700	4700 19	
Western Asia	500	10	12	600	6	10
Europe	500	7	3	300	20	5
Eastern Europe	400	14	6	300	26	10
Northern Europe	10	1	1	0	4	o
Southern Europe	100	7	3	<100	13	1
Western Europe	0	0	0	0	0	0
Latin America and the Caribbean	3700	32	29	3700	17	30
Caribbean	100	15	12	300	13	40
Central America	700	20	21	400	11	10
South America	2900	39	34	3000	19	40
Northern America	0	0	0	0	0	0
Oceania*	30	12	17	<100	7	20

<sup>&</sup>lt;sup>a</sup> Figures may not exactly add up to totals because of rounding.

Japan, Australia and New Zealand have been excluded from the regional estimates, but are included in the total for developed countries.

 $<sup>^{\</sup>circ}$   $\,$  No estimates are shown for regions where the incidence is negligible.

## 7.2 Regional and subregional estimates

It is evident that unsafe abortions occur in most parts of the world. Notable exceptions are Northern America, most parts of Europe and Eastern Asia (e.g. China), where abortion is legal, safe and relatively accessible. However, variations within subregions may be important. For example, abortion is legal and unsafe abortions are exceptional or nonexistent in some countries of South-eastern and Western Asia, e.g. Viet Nam and Turkey, as well as in Tunisia (Northern African subregion). On the other hand, legal abortion and menstrual regulation occur in parallel with large numbers of unsafe abortions in South-central Asia, i.e. India and Bangladesh. Despite liberalization of abortion laws in some developing countries, e.g. Guyana, Nepal and South Africa, it may take some time before legal and safe abortion services are accessible to all women who need them.

The estimated unsafe abortion ratios and rates are highest for the region of Latin America and the Caribbean, where almost four million unsafe abortions are estimated to take place each year. The ratios and rates of unsafe abortion for South America are particularly high. For example, the incidence ratio is 32 to 100 live births for all of Latin America and the Caribbean, compared to 39 for South America. This means that for every ten live births in South America it is estimated that there are four unsafe abortions. Overall unsafe abortion is less common in the Caribbean, as abortion laws in some of the islands are less restrictive, e.g. Cuba.

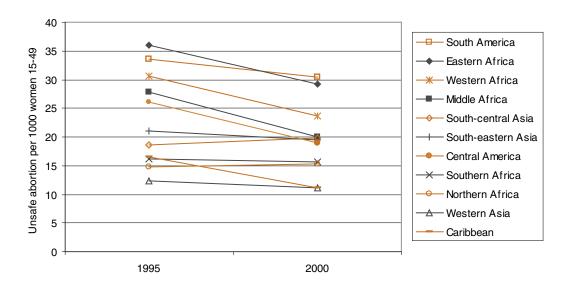


Figure 6. Incidence of unsafe abortion per 1000 women aged 15-49, 1995 and 2000a

Note: Rates for 2000 were recalculated for comparison with the 1995 rates for the age group 15-49 years

The unsafe abortion mortality ratio of 30 to 100 000 live births for Latin America and the Caribbean – approximately 3700 deaths – corresponds to about one in six maternal deaths in the region. Because of low fertility, the relative risk of death is highest in South America.

Africa accounts for over 4 million unsafe abortions; however, because of high fertility, the unsafe abortion ratio is relatively low at 14 to 100 live births. On the other hand, the number of unsafe abortions per 1000 women of reproductive age is almost as high as in Latin America; Eastern Africa, with a rate of 31 per 1000, is second only to South America. In several of the subregions of Africa, the likelihood of a woman resorting to unsafe abortion is among the highest in the world. Only Northern and Southern Africa show a relatively low rate of 17 unsafe abortions per

<sup>&</sup>lt;sup>a</sup> 1995 data from ref.<sup>50</sup>

1000 women aged 15–44. However, both regions show higher use of modern contraceptives than elsewhere in Africa and the moderate incidence rate in Northern Africa can be further explained by the inclusion of Tunisia, which has a liberal abortion law. Southern Africa has a decreasing incidence rate of unsafe abortion, following legalization of abortion in South Africa, which accounts for 85% of births in the subregion, and a slowly improving infrastructure of safe abortion services.

There were an estimated 30 000 deaths due to unsafe abortion in the year 2000 in Africa – over 40% of all unsafe abortion deaths. Of all the regions, Africa has by far the highest unsafe abortion mortality ratio, at 100 to 100 000 live births, as a result of the use of high-risk methods of unsafe abortion and poor access to health services. The highest unsafe abortion mortality ratios were found in Eastern and Middle Africa, at 140 and 110 to 100 000 live births, respectively. Abortion-related deaths account for 12–13% of all maternal deaths in Africa and Asia, a relatively low percentage because of overall high maternal mortality. South-central Asia has large absolute numbers of abortion-related maternal deaths, estimated at 29 000 deaths annually, and a high mortality ratio of 70 to 100 000 live births.

The absolute number of unsafe abortions is highest in Asia, at 10.5 million, accounting for more than half of all unsafe abortions. Over 7 million unsafe abortions occur in South-central Asia alone, which is a reflection of a high abortion incidence in a large population of reproductive age. The unsafe abortion rate for Asia is 13 per 1000 women aged 15–44 years, and the ratio 14 unsafe abortions to 100 live births. However, the real impact of unsafe abortion in Asia becomes apparent only when Eastern Asia, where abortion services are available and unsafe abortion is practically nonexistent, is excluded from the average rate and ratio for the region. The average rate then increases by more than half to 21 unsafe abortions per 1000 women of reproductive age, while the unsafe abortion/live birth ratio increases to 18. South-central and South-eastern Asia show similar high unsafe abortion rates of 22 and 21 per 1000 women aged 15–44 years. However, because of the higher fertility in South-central Asia, it has a lower unsafe abortion ratio to 100 live births: 18 versus 23 for South-eastern Asia. Western Asia has the lowest unsafe abortion incidence, both in Asia, and of the developing subregions, probably because of cultural traditions in favour of large families and against abortion.

In Europe, a remnant of less safe abortion practices can still be discerned, mainly in Eastern Europe, despite the fact that abortion is widely available legally. This appears to be part of a falling trend in overall abortion and in unsafe abortion incidence as modern contraceptives become increasingly available and services improve, with the notable exception of Poland, where abortion has become restricted.

#### 7.3 Unsafe abortion and age

An analysis of data on unsafe abortion by age indicates that two-thirds occur among women aged between 15 and 30 years. More importantly from a public health perspective, 2.5 million, or almost 14%, of all unsafe abortions in developing countries are among women under 20. Figure 7 illustrates the age pattern of unsafe abortions, which differs markedly from region to region. The proportion of women aged 15–19 years in Africa who have had an unsafe abortion is higher than in any other region; almost 60% of unsafe abortions are among women aged less than 25 and almost 80% are among women below 30. This contrasts with Asia where 30% of unsafe abortions are in women less than 25 and 60% are in women under 30. In Latin America and the Caribbean, women aged 20–29 years account for more than half of all unsafe abortions with almost 70% of unsafe abortions being carried out on women below 30, demonstrating an age pattern intermediate between those for Africa and Asia.

The age pattern of unsafe abortion is critical to a better understanding of the barriers to access. Interventions can be tailored according to the region-specific age pattern of unsafe abortion, though prevention of unsafe abortion at all ages should remain a high priority.

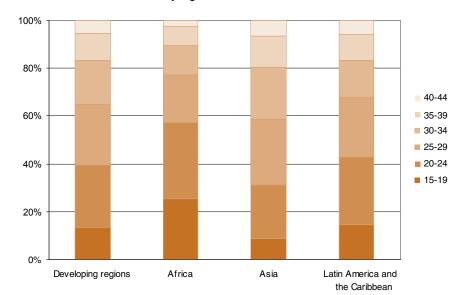


Figure 7. Distribution of unsafe abortion by age

## 7.4 Risk of death due to unsafe abortion

Table 4 shows estimates of global and regional mortality due to complications of unsafe abortion. The estimated case-fatality rate (deaths per 100 unsafe abortion procedures) ranges from a high of 0.7% in Africa to 0.1% in developed countries, with an average of 0.4% for developing regions. The global case-fatality rate associated with unsafe abortion is probably 700 times higher than the rate associated with legal induced abortion in the USA;<sup>39</sup> in some subregions it is well over 1000 times higher. Even in developed countries this rate is 80 times higher for an unsafe abortion than for a legal procedure.

Table 4.	Global and regional estimates of number of unsafe abortions and of mortality due to unsafe
	abortion, around the year 2000 <sup>a</sup>

	Number of unsafe abortions (thousands)	Number of maternal deaths due to unsafe abortion	% of all maternal deaths	Case-fatality rate (%)	Unsafe abortion deaths to 100 000 live births	
World	19 000	67 900	13	0.4	50	
Developed countries*	500	300	14	0.1	3	
Developing countries	18 400	67 500	13	0.4	60	
Africa	4200	29 800	12	0.7	100	
Asia*	10 500	34 000	13	0.3	40	
Europe	500	300	20	<0.1	5	
Latin America and the Caribbean	3700	3 700	17	0.1	30	
Northern America	٥	0	0	0	o	
Oceania*	30	<100	7	0.1	20	

<sup>&</sup>lt;sup>a</sup> Figures may not exactly add up to totals because of rounding.

<sup>\*</sup> Japan, Australia and New Zealand have been excluded from the regional estimates, but are included in the total for developed countries.

No estimates are shown for regions where the incidence is negligible.

#### 8. Conclusions

Major progress has been made in some areas of reproductive health, most notably in contraceptive use. However, unsafe abortions, though entirely preventable, continue to occur in almost all developing countries. The major public health implications include, but are not limited to, maternal morbidity and mortality. In addition, there are financial costs to women and to health services for treating complications. Preventing unintended pregnancies and unsafe abortion must therefore continue to be a high priority for improving women's reproductive health. It also remains important to study and monitor the extent of unsafe abortion in countries, globally and regionally, so that the public health impact can continue to be assessed.

Although the evidence remains incomplete, there are increasing indications that both incidence of unsafe abortion and resulting mortality are rising among unmarried adolescent women in urban areas, particularly where abortion is illegal and fertility regulation services are inadequate or inappropriate. A variety of demographic and socioeconomic developments – earlier menarche, rising age at marriage, and the influence of the media – can contribute to increasing the likelihood of premarital sexual activity and early pregnancy. Where information about sexuality, safe sexual practices and contraception is either lacking or of insufficient quality to respond to the needs of the young, there are likely to be many unintended pregnancies, a proportion of which will be terminated by safe or unsafe abortion. Young women may undergo an unsafe abortion even when abortion is legally permitted, because of lack of information and skills to make informed decisions and seek assistance. Where abortion is strictly illegal, they have no other option than to seek an unsafe abortion or continue the pregnancy – with all the attendant social and educational consequences.

The need for readily available information and services for abortion care is not confined to young people. In several countries, the legalization of abortion has not been systematically followed by elimination of unsafe abortion. Women may be unaware that safe abortion services are available, they may lack the resources, time or decision-making power to use such services, or the services may be inadequate to meet demand. Other factors inhibiting use of safe abortion where it is legal are lack of privacy and confidentiality; poor access to services; and discouraging attitudes of health care providers.

It remains important to study and monitor unsafe abortion so that trends can be assessed, efforts to prevent unintended pregnancy evaluated, and preventable causes of morbidity and mortality associated with abortion identified and reduced. It is vital that governments, intergovernmental and nongovernmental organizations deal openly with unsafe abortion as a major public health concern. Governments need to assess the health impact of unsafe abortion, reduce the need for abortion by expanding and improving family planning services, and design laws and policies to improve women's health and well-being. Prevention of unintended pregnancies must always be given the highest priority and all attempts should be made to eliminate the need for abortion. Women who wish to terminate their pregnancy should have ready access to reliable information, compassionate counselling and, in parallel, services for the prevention of unintended pregnancy and management of complications as outlined in the Programme of Action of the International Conference on Population and Development<sup>4</sup> and at the follow-up conference.<sup>5</sup>

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#### Annex 1

## Estimating the regional and global incidence of unsafe abortion

The first step in the estimation process was to collect and compile available evidence from published and unpublished sources. For this update an in-depth review was undertaken of close to 500 recent reports containing data on abortion or information on abortion methods, providers, access and legal developments. In addition, over 1400 entries in the WHO database (see Section 5.2) for 1980 or later were reassessed for significant developments. Country-specific numerical data, as well as qualitative information, were found for 138 countries, while qualitative information only was available for 38 countries (only 1 of which had over 1 million births); no information was available for 11 small countries. Adequate data were found for all large and most medium-sized and small countries, and used to calculate country estimates using the methods described below. Whenever possible, these estimates were corroborated using multiple approaches. The incidence of unsafe abortion and its associated mortality were first estimated for countries with a population of 300 000 or more; these figures were then aggregated to arrive at subregional, regional and global estimates. The aim was to arrive at reasonable country estimates, with consistent aggregate estimates.

Estimates of the incidence of unsafe abortion and resulting maternal mortality necessarily have a degree of uncertainty. They should be considered only as best estimates given the information currently available, using the methods described below.

# **Estimating incidence of abortion**

#### Methods and assumptions

The incidence of unsafe abortion was first calculated for each country using the abortion ratio, i.e. the number of abortions to 100 live births in a particular geographical area and period. The estimates of unsafe abortion incidence for subregions and for the world were derived from the estimates made for countries with a population of 300 000 or more, weighted according to number of births for the year 2000, as estimated by the United Nations Population Division.¹ Because of the level of uncertainty, country estimates were calculated solely for the purpose of aggregation and are not published.

The most pertinent assumptions underlying the use of the reported data were:

- the prevalence of induced abortion will increase or decrease only as other determinants of fertility change, mainly total fertility rate and effective contraceptive use;<sup>2</sup>
- a change in law (*de jure*) or practice (*de facto*) to make abortion available on more liberal grounds or on demand will lead to a shift from clandestine to legal abortion as the infrastructure becomes available;
- to circumvent the problem of induced abortion being misreported as spontaneous, it has been considered more reliable to use the combined incidence of spontaneous and induced abortion, when available, correcting for the incidence of spontaneous abortion using the methodology described below;<sup>3</sup>
- subnational data can be generalized to country level with adjustments;
- unsafe abortion ratios are lower in rural than in urban areas.<sup>4,5,6</sup> It was assumed that the incidence in rural areas is half that in urban areas.

#### **Country estimates**

#### Hospital data

Unsafe abortion incidence was estimated from hospital data by adjusting for spontaneous abortion (see below). The abortion/birth ratio was further adjusted on the assumption that half or more of induced abortions do not lead to complications requiring hospitalization. If the data were not for the national level, the abortion/birth ratio was corrected for a lower abortion ratio in rural areas, as indicated above.

For example, using urban hospital data, the estimate was calculated as:

$$F * [(A - S) * U] + [(A - S) * P * R]$$

where:

- F is an adjustment factor, correcting for the fact that not all unsafe induced abortions lead to complications that require hospitalization (2 for Africa, 1.5 for Western Asia and Northern Africa,<sup>7</sup> and 3 or 5 for Latin America, depending on prevalent unsafe abortion methods and their associated risk of complications<sup>3</sup>);
- A is the abortion ratio found in hospital study;
- *S* is the correction for spontaneous abortion (see below);
- U is the percentage of population living in urban areas;
- *P* is the assumed proportion of rural to urban hospital abortion ratios;
- *R* is the percentage of population living in rural areas.

#### Adjustment for spontaneous abortion

Following the procedure suggested by Singh and Wulf the abortion/birth ratio was adjusted by 3.4% (estimated using life-table approach) to account for the expected proportion of spontaneous abortions<sup>3</sup> at 13–22 weeks' gestation. It is assumed that the proportion of women with spontaneous abortion who are hospitalized is approximately equal to the proportion of women giving birth who deliver in a hospital in a given country, equally adjusting the hospital abortion/birth ratio by 3.4%.

#### Community studies

Community studies generally relate abortion to births, or may report the percentage of women of reproductive age who have had an induced unsafe abortion in the previous year or ever. Rates of women who had ever aborted were converted into yearly rates using the formula:

Wrep.age \* Avabo/Avrep.yr

where:

Wrep.age is the percentage of women reporting ever having had an abortion;

Avabo is the reported average number of abortions per woman;

Avrep.yr is the average number of reproductive years, which here is assumed to be

15 for women in the age range 15-44 years.

Yearly abortion rates were then converted into the corresponding abortion ratio (using UN estimates of numbers of women of reproductive age and live births for the year of the survey), corrected for 50% unreporting<sup>8,9,10</sup> and adjusted for spontaneous abortions, as follows:

 $C^*(A - S)$ 

C is the correction factor for 50% unreported

A is the abortion ratio found in the study

*S* is the correction for spontaneous abortion (see above)

Community studies generally provided national data.

#### Reported national estimates

Reasonable national estimates of abortion incidence or number of abortions were occasionally available. The number of abortions was related to the number of births for 2000, as estimated by the United Nations, to arrive at the abortion ratio.

#### Countries with no data

A few countries, for which no information was available, were assumed to have the same abortion ratio as other countries in the region or as other countries with similar abortion laws, fertility and contraceptive use.

#### Regional and global estimates of incidence

The number of unsafe abortions was estimated for each country by applying the estimated unsafe abortion ratio to the estimated number of births for the year 2000.<sup>1</sup> These figures were aggregated to arrive at regional and world totals.

## Estimates of mortality due to unsafe abortion

In estimating the number of maternal deaths resulting from unsafe abortion, the starting-point was usually data on abortion deaths as a percentage of all maternal deaths. Where available, information from community studies was used. However, for many countries, information came from hospital studies. After the results of individual studies were combined and adjusted for rural/ urban differences, the percentage of abortion deaths to total maternal deaths in each country was calculated; these figures were then weighted by the number of maternal deaths and aggregated to arrive at regional estimates of the percentage of maternal deaths due to unsafe abortion. These were finally applied to the estimated number of maternal deaths for the region to arrive at regional and world numbers of abortion-related deaths.

# Methods and assumptions

The percentage of maternal deaths due to unsafe abortion was first estimated for each country as detailed below. The estimates of unsafe-abortion-related maternal mortality for subregions and the world were derived from the estimates made for countries with a population of 300 000 or more, weighted by maternal deaths (using country-specific WHO maternal mortality ratios for 2000,<sup>11</sup> and United Nations birth estimates for the year 2000<sup>1</sup>). The aim was to arrive at reasonable country estimates, with consistent aggregate estimates.

For every country, data were carefully reviewed in the light of:

- existing abortion law (de jure) and its application (de facto);
- estimated unsafe abortion incidence;
- percentage of deliveries taking place in hospital;
- prevalent abortion methods.

The most pertinent assumptions underlying the use of the reported data were:

- abortion-related mortality occurs mainly or exclusively as a result of unsafe abortion, as spontaneous abortion is only rarely a cause of death;
- abortion-related mortality is likely to be under-reported because of the stigma attached to the procedure;
- subnational data can be generalized to country level with appropriate adjustments.

#### Country estimates

Estimates of the proportion of maternal deaths due to unsafe abortion originated from three sources: hospitals, national statistics, and community studies. The assumptions and formulas applied for each are outlined below.

#### National hospital data

Unsafe-abortion-related deaths are assumed to account for a higher proportion of maternal deaths in hospitals than nationally. It was assumed that nationally, the proportion of abortion-related maternal mortality was 0.9 of that seen in hospitals. The calculation applied was then:

where:

 $P_N$  is the proportion applied (here 0.9);

H<sub>m</sub> is the abortion-related mortality as a percentage of maternal mortality in hospitals.

## Urban and rural hospitals

Extending the reasoning above, it was assumed that the proportion of deaths in urban areas was 0.9 of urban hospital abortion-related mortality, while the proportion in rural areas was 0.6 of that found in urban hospitals. The rural proportion was expected to be lower than the urban proportion, as the incidence of abortion was expected to be lower (see above), while the risk of death may be higher because of less easy access to health care facilities in rural areas. The calculation applied in the case of urban hospital data was then:

$$(P_{hu} * H_{u} * U) + (P_{hr} * H_{u} * R)$$

where:

 $P_{\text{hu}}$  is the assumed proportion of urban mortality to urban hospital mortality (here 0.9);

 $H_{U}$  is the abortion-related mortality as a percentage of maternal mortality in urban hospitals;

Phr is the assumed proportion of rural mortality to urban hospital mortality (here 0.6);

U is the percentage of the population living in urban areas;

R is the percentage of the population living in rural areas.

## National reports, community studies, and reproductive age surveys

National community studies or reports have been assumed to provide the best estimates available, and these have been used without adjustments.

#### Urban and rural community studies

A few community studies were available at subnational level. Using the assumption that the proportion of mortality in rural areas is 0.6 that found in urban areas, the calculation applied in the case of urban data was:

$$(Mucs * U) + (Prcs * Mu * R)$$

*M*<sub>ucs</sub> is the survey-based abortion-related mortality in urban areas as a percentage of maternal mortality;

Prcs is the assumed proportion of rural mortality to urban community study mortality (here 0.6);

*U* is the percentage of the population living in urban areas;

*R* is the percentage of the population living in rural areas.

#### Countries with no data

A few countries, for which no information was available, were assumed to have the same percentage of abortion-related maternal mortality as other countries in the region or as other countries with similar abortion laws, total fertility rate, unsafe abortion incidence, and percentage hospital deliveries.

#### Regional and global estimates of mortality due to unsafe abortion

The numbers of maternal deaths due to unsafe abortion were estimated for each country by applying the estimated proportion of maternal mortality caused by abortion-related complications to the estimated number of maternal deaths for the year 2000. These figures were then aggregated to arrive at regional and world totals.

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#### Annex 2

# United Nations geographical regions and subregions in 2000<sup>a</sup>

**AFRICA** 

**Eastern Africa** 

Burundi Comoros Djibouti Eritrea Ethiopia Kenya Madagascar Malawi Mauritius

Mozambique Reunion Rwanda Somalia Uganda

United Republic of Tanzania

Zambia Zimbabwe

**Middle Africa** 

Angola Cameroon

Central African Republic

Chad Congo

Democratic Republic of the Congo

**Equatorial Guinea** 

Gabon

**Northern Africa** 

Algeria Egypt

Libyan Arab Jamahiriya

Morocco Sudan Tunisia

Western Sahara

**Southern Africa** 

Botswana Lesotho Namibia South Africa Swaziland

Western Africa

Benin Burkina Faso

<sup>a</sup> countries with more than 300 000 inhabitants

Côte d'Ivoire Gambia Ghana Guinea Guinea-Bissau Liberia

Cape Verde

Mauritania Niger Nigeria Senegal Sierra Leone

Togo

Mali

**ASIA** 

Eastern Asia

China

China, Hong Kong SAR China, Macao SAR

Democratic People's Republic of Korea

Japan Mongolia

Republic of Korea

**South-central Asia** 

Afghanistan Bangladesh Bhutan India

Iran (Islamic Republic of)

Kazakhstan Kyrgyzstan Nepal Pakistan Sri Lanka Tajikistan Turkmenistan Uzbekistan

South-eastern Asia

Brunei Darussalam

Cambodia East Timor Indonesia

Lao People's Democratic Republic

Malaysia Myanmar Philippines Singapore Thailand Viet Nam

#### Western Asia

Armenia Azerbaijan Bahrain

Cyprus

Georgia

Iraq Israel

Jordan Kuwait

Lebanon

Occupied Palestinian Territory

Oman Qatar

Saudi Arabia

Syrian Arab Republic

Turkey

**United Arab Emirates** 

Yemen

#### **LATIN AMERICA**

#### The Caribbean

Bahamas

Barbados

Cuba

Dominican Republic

Guadeloupe

Haiti

Jamaica Martinique

**Netherlands Antilles** 

Puerto Rico

Saint Lucia

Trinidad and Tobago

#### **Central America**

Belize

Costa Rica

El Salvador

Guatemala

Honduras

Mexico

Nicaragua Panama

#### **South America**

Argentina

Bolivia

Brazil

Chile

Colombia

Ecuador

French Guiana

Guyana

Paraguay

Peru

Suriname

Uruguay

Venezuela

## **NORTHERN AMERICA**

Canada

United States of America

## **EUROPE**

## **Eastern Europe**

**Belarus** 

Bulgaria

Czech Republic

Hungary

Republic of Moldova

Poland

Romania

Russian Federation

Slovak Republic

Ukraine

#### **Northern Europe**

Denmark

Estonia

**Finland** 

Iceland

Ireland

Latvia

Lithuania Norway

Noiway

Sweden

United Kingdom

## **Southern Europe**

Albania

Bosnia and Herzegovina

Croatia

Greece

Italy

Portugal

Slovenia

Spain

#### **Western Europe**

Austria

Belgium

France

Germany

Netherlands

Switzerland

## **OCEANIA**

## Australia/New Zealand

Australia New Zealand

## Melanesia/Micronesia/Polynesia

Fiji French Polynesia Guam New Caledonia Papua New Guinea Salomon Islands Samoa

Vanuatu

#### Annex 3

# Regional annual estimates of incidence of unsafe abortion by World Health Organization (WHO) regions and subregions, around the year 2000

	Unsafe abortion incidence			Mortality due to unsafe abortion		
	Number of unsafe abortions (thousands)	Unsafe abortions to 100 live births	Unsafe abortions per 1000 women aged 15-44	Number of maternal deaths due to unsafe abortion	% of all maternal deaths	Unsafe abortion deaths to 100 000 live births
AFRO	3500	14	26	28 000	12	110
AFRO D	1500	12	24	10 000	10	80
AFRO E	2000	15	28	18 000	14	130
AMRO	3700	23	19	3700	16	20
AMRO A	0	0	0	0	0	0
AMRO B	3200	34	30	2300	16	30
AMRO D	500	24	30	1300	19	70
EMRO	2600	16	24	8000	11	50
EMRO B	600	17	19	200	6	5
EMRO D	2000	16	26	7800	12	60
EURO	700	7	3	400	13	4
EURO A	100	2	0	0	0	0
EURO B	200	7	5	100	7	4
EURO C	300	15	6	300	23	10
SEARO	7700	20	22	26 500	15	70
SEARO B	1700	29	23	1700	15	30
SEARO D	6000	19	21	24 800	15	80
WPRO	700	3	2	1100	5	4
WPRO A	0	0	0	0	0	0
WPRO B	700	3	2	1100	5	5

<sup>&</sup>lt;sup>a</sup> Figures may not equal totals due to rounding.

A: very low child, very low adult mortality

B: low child, low adult mortality

C: low child, high adult mortality

D: high child, high adult mortality

E: high child, very high adult mortality

No estimates are shown for regions where the incidence is negligible.

<sup>&</sup>lt;sup>1</sup> WHO regions and subregions are listed in Annex 4

#### Annex 4

## Member States by World Health Organization regions and mortality strata

## **AFRICAN REGION (AFRO)**

#### AFRO D

#### (high child, high adult mortality)

Algeria Angola Benin Burkina Faso Cameroon Cape Verde Chad Comoros

**Equatorial Guinea** 

Gabon
Gambia
Ghana
Guinea
Guinea-Bissau
Liberia
Madagascar
Mali
Mauritania
Mauritius
Niger
Nigeria

Sao Tome and Principe

Seychelles Senegal Sierra Leone Togo

## AFRO E

#### (high child, very high adult mortality)

Botswana Burundi

Central African Republic

Congo Côte d'Ivoire

Democratic Republic of the Congo

Eritrea
Ethiopia
Kenya
Lesotho
Malawi
Mozambique
Namibia
Rwanda
South Africa
Swaziland
Uganda

United Republic of Tanzania

Zambia Zimbabwe

## **REGION OF THE AMERICAS (AMRO)**

#### **AMRO A**

#### (very low child, very low adult mortality)

Canada Cuba

United States of America

#### **AMRO B**

#### (low child, low adult mortality)

Antigua and Barbuda

Argentina
Bahamas
Barbados
Belize
Brazil
Chile
Colombia
Costa Rica
Dominica

Dominican Republic

El Salvador Grenada Guyana Honduras Jamaica Mexico Panama Paraguay

Saint Kitts and Nevis

Saint Lucia

Saint Vincent and the Grenadines

Suriname

Trinidad and Tobago

Uruguay Venezuela

#### AMRO D

## (high child, high adult mortality)

Bolivia Ecuador Guatemala Haiti Nicaragua Peru

## EASTERN MEDITERRANEAN REGION (EMRO)

#### **EMRO B**

#### (low child, low adult mortality)

Bahrain Cyprus

Iran (Islamic Republic of)

Jordan Kuwait Lebanon

Libyan Arab Jamahiriya

Oman Qatar Saudi Arabia Syrian Arab Republic Tunisia

United Arab Emirates

#### **EMRO D**

#### (high child, high adult mortality)

Afghanistan Djibouti Egypt Iraq Morocco Pakistan Somalia Sudan Yemen

#### **EUROPEAN REGION (EURO)**

#### **EURO A**

#### (very low child, very low adult mortality)

Andorra
Austria
Belgium
Croatia
Czech Republic
Denmark
Finland
France
Germany

Germany Greece Iceland Ireland Israel

Italy
Luxembourg
Malta
Monaco
Netherlands
Norway
Portugal

San Marino Slovenia Spain Sweden Switzerland United Kingdom

#### **EURO B**

#### (low child, low adult mortality)

Albania Armenia Azerbaijan

Bosnia and Herzegovina

Bulgaria Georgia Kyrgyzstan Poland Romania Slovakia Tajikistan

The former Yugoslav Republic of Macedonia

Turkey Turkmenistan Uzbekistan Yugoslavia

#### **EURO C**

#### (low child, high adult mortality)

Belarus Estonia Hungary Kazakhstan Latvia Lithuania

Republic of Moldova Russian Federation

Ukraine

#### **SOUTH-EAST ASIA REGION (SEARO)**

#### **SEARO B**

#### (low child, low adult mortality)

Indonesia Sri Lanka Thailand

#### **SEARO D**

## (high child, high adult mortality)

Bangladesh Bhutan

Democratic People's Republic of Korea

India Maldives Myanmar Nepal

## **WESTERN PACIFIC REGION (WPRO)**

#### **WPRO A**

(very low child, very low adult mortality)

Australia

Brunei Darussalam

Japan

New Zealand

Singapore

#### **WPRO B**

#### (low child, low adult mortality)

Cambodia

China

China, Hong Kong SAR

China, Macao SAR

Cook Islands

Fiji

Kiribati

Lao People's Democratic Republic

Malaysia

Marshall Islands

Micronesia, Federated States of

Mongolia

Nauru

Niue

Palau

Papua New Guinea

Philippines

Republic of Korea

Samoa

Solomon Islands

Tonga

Tuvalu

Vanuatu

Viet Nam

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