# The Incidence of Abortion Worldwide

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**Context:** *Accurate measurement of induced abortion levels has proven difficult in many parts of the world. Health care workers and policymakers need information on the incidence of both legal and illegal induced abortion to provide the needed services and to reduce the negative impact of unsafe abortion on women's health.*

**Methods:** *Numbers and rates of induced abortions were estimated from four sources: official statistics or other national data on legal abortions in 57 countries; estimates based on population surveys for two countries without official statistics; special studies for 10 countries where abortion is highly restricted; and worldwide and regional estimates of unsafe abortion from the World Health Organization.*

**Results**: *Approximately 26 million legal and 20 million illegal abortions were performed worldwide in 1995, resulting in a worldwide abortion rate of 35 per 1,000 women aged 15–44. Among the subregions of the world, Eastern Europe had the highest abortion rate (90 per 1,000) and Western Europe the lowest rate (11 per 1,000). Among countries where abortion is legal without restriction as to reason, the highest abortion rate, 83 per 1,000, was reported for Vietnam and the lowest, seven per 1,000, for Belgium and the Netherlands. Abortion rates are no lower overall in areas where abortion is generally restricted by law (and where many abortions are performed under unsafe conditions) than in areas where abortion is legally permitted.*

**Conclusions:** *Both developed and developing countries can have low abortion rates. Most countries, however, have moderate to high abortion rates, reflecting lower prevalence and effectiveness of contraceptive use. Stringent legal restrictions do not guarantee a low abortion rate.*

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The Programme of Action of the 1994 International Conference on Population and Development urged governments and other relevant organizations "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."[1] To implement this recommendation, policymakers need information on the availability and quality of family planning services, the extent of harm to women's health caused by unsafe abortion, and the incidence of abortion.

This article focuses on the last of these factors, the incidence of both legal and illegal abortions in each country or area. Comparative data provide insight into the levels of abortion that might be achievable for a particular country and into the factors that influence abortion rates.

Despite its importance, accurate measurement of the level of induced abortion has proven difficult to achieve in many parts of the world. In many countries where abortion is legal under broad conditions, statistics on abortion are collected and are of reasonable completeness and accuracy, but in others, official data are lacking or are incomplete. A common problem is that some privately performed procedures go unreported and are therefore not counted.

In addition, the availability of statistics is limited by other factors. In some countries, only certain categories of abortions may be reported—for example, only those that comply with official requirements and regulations, those performed in settings where reporting is routine (such as hospitals or clinics) or those paid for by government insurance. Moreover, in some areas where reporting is legally required, enforcement is uneven.

That no official statistics would be available in countries where abortion is highly restricted by law and can carry the possibility of severe consequences is understandable. In these settings, moreover, attempts to collect information on induced abortion by other methods (for example, by directly questioning women, doctors or other potential providers) are unlikely to elicit accurate reports.[2]

As a result of these problems, we have used a variety of data sources, data collection approaches and methods of estimation to obtain the best possible estimates of the number of induced abortions occurring worldwide and in specific regions and countries. The research reported on in this article continues a series of worldwide overviews of the level of abortion and takes a similar approach to data compilation and estimation.[3] It also draws on compilations of the level of abortion from organizations and researchers for various regions or countries.[4]

This article presents current estimates of the level of induced abortion, based on a recent effort to assemble all available official statistics from countries that collect such data, as well as existing estimates of the level of induced abortion for countries that have no official statistics. We incorporate worldwide and regional estimates from the World Health Organization (WHO) of the number of unsafe abortions, which the organization defines as abortions that do not meet the legal requirements in countries where abortion is generally permitted as well as abortions in restrictive countries. (Thus, WHO's estimates of "unsafe" procedures can be considered estimates of illegal abortions.) We combine these estimates with all available data on legal abortions to arrive at estimates of the overall number and level of induced abortion, whether safe or unsafe, legal or illegal.

## Methods and Data Sources

### *Countries with Nonrestrictive Laws*

Our aim was to obtain abortion statistics from all countries* where legal abortion was generally available in 1997 and that had populations of one million or more. In each country where we believed data would be available, we requested information and published reports containing abortion statistics from the national statistical office or a local informed expert.

*"Countries" as used here includes certain dependent territories with separate abortion statistics or legislation.

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(The experts were government officials, scientists interested in abortion and family planning officials.) For most countries, we sent a questionnaire requesting specific abortion, birth and population data.

Abortion data are generally collected by government agencies, which compile statistics from health facilities and physicians that perform abortions. Although reporting is usually required, it is nevertheless incomplete—and thus potentially misleading—in many countries. Therefore, we asked the local experts for an assessment of the completeness of the data, and we have set apart results for countries where reporting is incomplete or of unknown completeness.

We obtained data from 50 of the 56 countries that allowed abortion on socioeconomic grounds or without restriction as to reason for the procedure in 1997.[5]* We also have information for nine countries where laws are more restrictive but where legal abortion services are nevertheless available to many women.

For all but seven of these 59 countries, we present government abortion statistics. In Australia, we obtained data from records of national health insurance payments and hospital records.[6] The number of abortions in Puerto Rico was projected from a survey of abortion providers,[7] while household surveys were used for the Republic of Korea (South Korea) and Turkey.[8] We took the number of abortions in Switzerland from a publication reporting the number in each canton, with estimates for two cantons.[9] For the United States, we used data published by The Alan Guttmacher Institute (AGI) in preference to government statistics, which are incomplete for many states. (AGI statistics are derived from periodic surveys of all abortion providers.[10]) Data for Zambia came from one hospital where almost all legal abortions are performed.[11]

In some settings, multiple reporting systems give different statistics. Systems of classifying abortions may or may not include early abortions performed by vacuum aspiration (manual or electric), spontaneous abortions or criminal abortions, and some distinguish between elective and therapeutic abortions. In situations like these, we have relied on the advice of in-country experts to assess the reliability of data from each system and to inform our decision to combine sources or present data from only one source.

For example, in some former Soviet states, both the ministry of health and the federal statistical bureau compile abortion statistics, but both sets of statistics have shortcomings. For the Russian Federation, for example, we have used the Ministry of Health statistics, although they exclude abortions performed in the facilities of the Ministry of Transportation and other ministries. The statistical bureau collects data from all ministries but its abortion count includes spontaneous abortions and omits early vacuum aspiration abortions.

For China, we have also used Ministry of Health statistics, in part because they are available for more years. Although there have been suggestions that the administrative units that supply data to the Ministry of Health may have had a tendency to overreport in the past, we judge that the total count is probably too low, especially in recent years, because of the omission of approximately one million medical (mifepristone) abortions per year and incomplete reporting from family planning clinics. The family planning program also compiles abortion statistics, but these data are derived in part from self-reports at local meetings of women; they exclude unmarried women, they omit abortions in many city hospitals and provinces are missing for some years. Even so, for some years the family planning totals are higher than those of the Ministry of Health.

For South Korea and Turkey, two countries with no national registration or service statistics, we present estimates from surveys that asked ever-married women aged 20–44 (South Korea) or 15–49 (Turkey) about their abortion experience in the previous year. The number of abortions for each of these countries is underestimated because abortions to unmarried women are not included. Given South Korea's very high mean age at marriage (about 26–27 for women), the proportion of women who are unmarried is substantial, and a significant number of abortions are being obtained by unmarried women.[12]

The median age at first marriage in Turkey is lower (19), and although premarital sexual activity is not believed to be common, some abortions are probably occurring among unmarried women. In addition, underreporting of abortions is common in surveys. However, reporting appears to be relatively complete in countries such as South Korea and Turkey, where abortion is legal and less stigmatized, and where reported levels are high.

For our regional and worldwide estimates of the number of legal abortions, we needed to include uncounted legal abortions for countries where abortion reporting is incomplete or nonexistent. For France and Italy, we used estimates made by local experts.[13] For the remaining countries, we took into account the opinions of local experts, as well as abortion rates in countries with a similar profile of abortion service provision and similar legal and social conditions regarding abortion. Seventy-one percent of our estimated number of legal abortions worldwide were reported and 29% were estimates of uncounted abortions.

For population estimates and numbers of live births needed to calculate rates and ratios, where possible we used data from official sources that were either published, obtained from country statistical offices or provided by our in-country experts. Data compilations published by the Council of Europe and the United Nations (UN) were used if data were unobtainable or if gaps existed in available official data.[14] For some countries, we used birth estimates provided by the Population Reference Bureau. For countries for which we could not obtain official estimates of the population of women aged 15–44, we relied on the estimates of the UN Population Division[15] and interpolated where necessary.

### *Countries with Highly Restrictive Laws*

Official statistics on illegal abortions are usually not available for countries with restrictive laws. For regional and worldwide estimates, we used WHO's estimates of the number of abortions occurring in areas where abortion is highly restricted, and of the number of unsafe abortions occurring in areas where abortion is legally permitted but where significant numbers are performed under illegal conditions.[16] These estimates are based on "indirect" techniques and take into account a variety of existing information on abortion, including studies reporting the ratio of births to abortion complications treated in hospitals, information on access to clandestine abortion services from trained physicians, the likelihood that women having abortions will experience complications, the degree of access to hospital treatment and the level of urbanization.

These techniques use information obtained from a number of sources: official statistics on women hospitalized for the treatment of abortion complications; hospital studies; surveys of medical facilities; and surveys of providers, women or abortion patients. Each of these sources suffers

*The six omitted countries include Austria, Greece and Taiwan, whose data cover only services provided in public facilities and thus represent a small, atypical fraction of women having abortions. In addition, we were unable to obtain recent information for Bosnia or North Korea. No data were available for Cambodia, which liberalized its law late in 1997.

**Table 1. Estimated number of induced abortions, by legal status, percentage of all abortions that are illegal, abortion rate and abortion ratio, all according to region and subregion, 1995**

| Region and subregion | No. of abortions (millions) | | | % illegal | Rate* | Ratio† |
|---|---|---|---|---|---|---|
| | Total | Legal | Illegal | | | |
| **Total** | **45.5** | **25.6** | **19.9** | **44** | **35** | **26** |
| **Developed regions** | **10.0** | **9.1** | **0.9** | **9** | **39** | **42** |
| Excluding Eastern Europe | 3.8 | 3.7 | 0.1 | 3 | 20 | 26 |
| **Developing regions** | **35.5** | **16.5** | **19.0** | **54** | **34** | **23** |
| Excluding China | 24.9 | 5.9 | 19.0 | 76 | 33 | 20 |
| **Africa** | **5.0** | **‡** | **5.0** | **99** | **33** | **15** |
| Eastern Africa | 1.9 | ‡ | 1.9 | 100 | 41 | 16 |
| Middle Africa | 0.6 | ‡ | 0.6 | 100 | 35 | 14 |
| Northern Africa | 0.6 | ‡ | 0.6 | 96 | 17 | 12 |
| Southern Africa | 0.2 | ‡ | 0.2 | 100 | 19 | 12 |
| Western Africa | 1.6 | ‡ | 1.6 | 100 | 37 | 15 |
| **Asia** | **26.8** | **16.9** | **9.9** | **37** | **33** | **25** |
| Eastern Asia | 12.5 | 12.5 | ‡ | § | 36 | 34 |
| South-central Asia | 8.4 | 1.9 | 6.5 | 78 | 28 | 18 |
| South-eastern Asia | 4.7 | 1.9 | 2.8 | 60 | 40 | 28 |
| Western Asia | 1.2 | 0.7 | 0.5 | 42 | 32 | 20 |
| **Europe** | **7.7** | **6.8** | **0.9** | **12** | **48** | **48** |
| Eastern Europe | 6.2 | 5.4 | 0.8 | 13 | 90 | 65 |
| Northern Europe | 0.4 | 0.3 | ‡ | 8 | 18 | 23 |
| Southern Europe | 0.8 | 0.7 | 0.1 | 12 | 24 | 34 |
| Western Europe | 0.4 | 0.4 | ‡ | § | 11 | 17 |
| **Latin America** | **4.2** | **0.2** | **4.0** | **95** | **37** | **27** |
| Caribbean | 0.4 | 0.2 | 0.2 | 47 | 50 | 35 |
| Central America | 0.9 | ‡ | 0.9 | 100 | 30 | 21 |
| South America | 3.0 | ‡ | 3.0 | 100 | 39 | 30 |
| **Northern America** | **1.5** | **1.5** | **‡** | **§** | **22** | **26** |
| **Oceania** | **0.1** | **0.1** | **‡** | **22** | **21** | **20** |

*Abortions per 1,000 women aged 15–44. †Abortions per 100 known pregnancies. (Known pregnancies are defined as abortions plus live births.) ‡Fewer than 50,000. §Less than 0.5%. *Notes:* Developed regions include Europe, Northern America, Australia, New Zealand and Japan; all others are considered developing. Regions are as defined by the United Nations (UN) (see Appendix). Numbers do not add to totals due to rounding. *Sources:* **Populations**—UN, *The Sex and Age Distribution of the World Population, The 1996 Revision*, New York: UN, 1997. **Births**—UN, *World Population Prospects: The 1996 Revision, Annex II & III, Demographic indicators by major area, region and country*, New York: UN, 1996. **Illegal abortions**—WHO, 1998, op. cit. (see reference 4). **Legal abortions**—see text.

from some inadequacy, and adjustments and assumptions are necessary to allow for these data limitations.

Where abortion is highly restricted, data-based abortion estimates are scarce because they require extensive research. Such estimates start with statistics on the number of women hospitalized for abortion complications and build on these data, correcting for undercoverage and underreporting, and then obtain the number of induced abortions by removing spontaneous abortions. In the existing literature, we located estimates for 10 countries for a recent time period.[17] This group of countries includes Bangladesh, where menstrual regulation is permitted and reported in official statistics, but abortions are legally restricted, although common.

An important step is to determine the proportion of all women having a clandestine abortion who are likely to be hospitalized for complications; this factor is estimated based on findings from available community surveys and from opinion surveys of health professionals. However, because two key elements—access to safe abortion procedures and access to hospital care—are both subject to change, the estimates take this into account as far as possible by using any available information on access to safe abortion services or to hospital care, by comparing different sources over time and by using the most recent source.

The estimates for two of these 10 countries included an additional component. For Nigeria, an estimate of the number of abortions provided by private doctors, obtained by surveying a sample of medical facilities, is also incorporated.[18] For Bangladesh, the number includes an estimate of menstrual regulation procedures calculated from official statistics adjusted on the basis of survey results for the level of underreporting of such procedures by providers.[19]

### *Worldwide and Regional Estimates*

The estimated number of legal and illegal abortions and their sum, the estimated total number of abortions worldwide, all have a margin of error of a few million. Much of the possible error in the worldwide number of legal abortions comes from the need to estimate the level of underreporting in four large areas—China, India, Japan and the former Soviet bloc states. The numbers of abortions in these areas are large and influence the total estimate, and our assumptions about the level of completeness contribute to the margin of error around the world estimate. For the total number of illegal abortions worldwide, the WHO estimates involve a fair degree of uncertainty, given the indirect estimation methodology that was used.

## Findings

### *Global Incidence*

Approximately 46 million abortions were performed worldwide in 1995 (Table 1). Of these, about 26 million were legal and 20 million illegal.* The abortion rate worldwide was about 35 per 1,000 women aged 15–44. Of all pregnancies (excluding miscarriages and stillbirths), 26% were terminated by abortion.†

In our earlier work, we estimated that 43 million abortions (28 million legal and 15 million clandestine) took place in 1987, with a possible range of 36–53 million.[20] The apparent decrease in the number of legal abortions worldwide resulted from new estimates for the former Soviet countries, where abortion rates have been declining.

The increased estimate of the number of clandestine or illegal abortions comes from new WHO estimates, which are based on careful examination of the available data for each subregion. The largest change occurred in Africa, where WHO estimated that 3.7 million "unsafe" abortions were performed in 1990 and where its current estimate for 1995 is 5.0 million. We had earlier estimated, very conservatively, that 1.5 million illegal abortions took place there in 1987.

Approximately 44% of abortions worldwide are performed illegally (of which many, though not all, are unsafe). Reflecting the predominant laws in the regions, the proportion of abortions that are illegal ranges from almost none in Eastern Asia, Western Europe and Northern America to almost all in Africa, Central America and South America. In other parts of Asia and in the Caribbean, both legal and illegal abortions are common, while in Eastern, Northern and Southern Europe, the large majority of abortions are legal. (The countries included in each region are shown in the Appendix.)

The developing areas of the world, where 79% of the world's people live, ac-

*Illegal abortions include those that do not appear to meet legal requirements in countries where abortion is permitted under a broad range of conditions as well as those in countries with restrictive laws. In many countries, however, the exact meaning of the law has not been determined by the courts and some "illegal" abortions might be found to be legal if the question were litigated.

†A better measure of abortion incidence is the proportion of unintended pregnancies ended by abortion, but information on unintended pregnancies ending in birth is generally unavailable. It is therefore customary to report the ratio of abortions to all births or the ratio of abortions to births plus abortions. The latter is equivalent to the proportion of pregnancies (excluding miscarriages) ended by abortion. This measure is strongly affected by the numbers of intended as well as unintended births in a population.

count for 64% of legal and 95% of illegal abortions. When both legal and illegal abortions are considered, the abortion rate is 39 per 1,000 women aged 15–44 in developed countries and 34 per 1,000 in developing countries, a difference that is nonsignificant when the degree of error in the estimates is considered. The abortion ratio (abortions per 100 pregnancies ending in birth or abortion) is higher in the developed regions than in the developing regions (42% vs. 23%) because the developed areas have low birthrates.

The number and rate of abortions in developed regions are strongly influenced by the number and rate in Central and Eastern Europe,* where abortion is a common method of limiting and spacing births. When Eastern Europe is excluded, the number of abortions in the developed areas drops by more than half, and the rate falls from 39 to 20 abortions per 1,000 women. Similarly, China accounts for a large part of the developing world's population; excluding China, however, has little impact on the abortion rate.

Asia, the most populous region of the world, has the largest total number of abortions (17 million legal and 10 million illegal), followed by Europe, with eight million (most of them in Eastern Europe), Africa (five million), Latin America (four million), Northern America (1.5 million) and Oceania (0.1 million). Asia accounts for 59% of the world's abortions, and Northern America only 3%.

The abortion rate is highest in Europe (48 per 1,000 women aged 15–44), which includes both the subregion with the highest rate (Eastern Europe, with a rate of 90 per 1,000) and the subregion with the lowest rate (Western Europe, with a rate of 11 per 1,000). Eastern Europe has the highest proportion of pregnancies ended by abortion (65%). In Europe, few of the abortions performed are illegal, except in some of the former Soviet states, where some women seek to avoid the embarrassment and inconvenience of government health services but do not have access to or cannot afford a private physician; in Portugal, which has a restrictive law; and in Italy and Spain, where some physicians perform abortions that may not satisfy all legal requirements.

The region with the next highest estimated abortion rate is Latin America (37 per 1,000), where almost all abortions are illegal. Legal abortions are generally available only in Cuba, Puerto Rico and some small Caribbean countries. Of the subregions of Latin America, the Caribbean has the highest rate, in part because of the relatively high incidence of abortion in Cuba.

The overall abortion rate in Asia (33 per 1,000) is similar to that in Latin America. The rates in South-central Asia (28) and Western Asia (32) are somewhat lower than those in Eastern Asia (36) and South-eastern Asia (40). All the countries of Eastern Asia permit abortions under broad circumstances, and virtually all abortions are legal. The data for South-central and South-eastern Asia include both legal and illegal abortions, since the procedure is generally permitted in Singapore, Vietnam, India and the former Soviet Asian states but was legally restricted elsewhere in 1995. In Western Asia, the legal abortions in our statistics took place in Turkey and Israel.

In Africa, where the overall abortion rate is about 33 per 1,000, rates were estimated to be relatively low in Northern and Southern Africa and close to the world average in the other three subregions. Virtually all abortions are illegal, since only Tunisia and, since 1997, South Africa permit first-trimester abortions without restriction as to reason. The proportion of pregnancies ended by abortion in Africa is 15%, the lowest for any continent.

Of the regions, Oceania and Northern America have the lowest rates (21 and 22 abortions per 1,000, respectively). Those rates, however, are higher than those seen in several subregions elsewhere in the world.

### *Countries Where Abortion Is Legal*

Because the legal status of abortion is strongly related to the availability of statistics and to the completeness of reporting, we report separately on countries where abortion is legal under broad conditions and countries where it is highly restricted. Abortion estimates for the first group of countries are based on official statistics or surveys, while estimates for the latter are based on indirect techniques. However, some countries where abortion is legal do not have complete data, and these country-specific official statistics are also shown separately because this important difference affects interpretation of the data.

Table 2 (page S34) shows the legal abortion numbers, rates and ratios for countries with populations of more than one million for which statistics or survey results are available. The upper panel shows countries for which the reported number of abortions is thought to be within 20% of the true number, while the lower panel shows countries whose statistics are probably inaccurate by at least 20% or are of unknown completeness. The data presented may be considered minimums in most cases, since it is unlikely that abortions are overcounted.

The highest abortion rate (83 per 1,000) is for Vietnam, where very early vacuum aspiration is common. This number represents public-sector abortions only; when private-sector abortions, which are estimated at one-third the public-sector total,[21] are included, the number rises to about two million abortions and the rate to 111 per 1,000. Even when private-sector abortions are excluded, the total abortion rate indicates that the average woman would have 2.5 abortions during her lifetime if the abortion rate were to remain at this level.

Romania also has a relatively high abortion rate (78 per 1,000), even though many procedures performed in the private sector are missing from the official statistics. In 1990, before private doctors began doing large numbers of abortions, the Ministry of Health reported 914,000 abortions, for a rate of 182 per 1,000 women aged 15–44. The highest abortion rate ever documented in official statistics was recorded in Romania in 1965 (252 per 1,000).

The relatively high rate in Cuba (78 per 1,000) includes menstrual regulation, an early abortion procedure carried out without pregnancy testing, as well as termination of known pregnancies. In 1996, 60% of the procedures were menstrual regulations.

Many of the other countries with above-average abortion rates are former Soviet republics. According to local experts, the abortion counts are close to complete in four of these—Belarus, Estonia, Kazakhstan and Latvia.† In the other former Soviet states (Armenia, Azerbaijan, Georgia, Kyrgyzstan, Lithuania, Moldova, the Russian Federation, Tadjikistan, Turkmenistan, Ukraine and Uzbekistan), the completeness of the data is unknown because significant numbers of unreported abortions may have been performed by private physicians. In some cases, the numbers may be far from complete; in Georgia, for example, local experts believe the true number of abortions could be several times the reported number.

Even though its data are incomplete, the Russian Federation's recorded rate—68 abortions per 1,000 women aged 15–44—

*The Russian Federation is included in Eastern Europe.

†In Kazakhstan, a household survey reported that only 3% of abortions were performed in fee-for-service facilities, so it is likely that official reports are relatively complete, although privately performed abortions could have been underreported in the survey (source: National Institute of Nutrition, Academy of Preventive Medicine of Kazakhstan and Macro International, *Kazakhstan Demographic and Health Survey*, 1995, Calverton, MD, USA: Macro International, 1996).

**Table 2. Measures of legal abortion, by completeness of data, country and data year**

| Completeness and country | No.* | Rate† | Ratio‡ | Total abortion rate§ |
|---|---|---|---|---|
| **Believed to be complete** | | | | |
| Australia, 1995–1996 | 91,900 | 22.2 | 26.4 | 0.57 |
| Belarus, 1996 | 155,700 | 67.5 | 61.9 | 2.04 |
| Belgium, 1996** | 14,600 | 6.8 | 11.2 | 0.21 |
| Bulgaria,1996 | 89,000 | 51.3 | 55.2 | 1.55 |
| Canada, 1995†† | 106,700 | 15.5 | 22.0 | 0.49 |
| Cuba, 1996 | 209,900 | 77.7 | 58.6 | **2.33** |
| Czech Republic,1996 | 46,500 | 20.7 | 34.0 | 0.63 |
| Denmark, 1995 | 17,700 | 16.1 | 20.3 | 0.48 |
| England & Wales, 1996‡‡ | 167,900 | 15.6 | 20.5 | 0.48 |
| Estonia, 1996 | 16,900 | 53.8 | 56.0 | 1.63 |
| Finland, 1996 | 10,400 | 10.0 | 14.7 | 0.31 |
| Germany, 1996 | 130,900 | 7.6 | 14.1 | **0.23** |
| Hungary, 1996 | 76,600 | 34.7 | 42.1 | 1.07 |
| Israel, 1995 | 17,600 | 14.3 | 13.1 | 0.43 |
| Kazakhstan, 1996 | 178,000 | 43.9 | 41.3 | **1.32** |
| Latvia, 1996 | 23,100 | 44.1 | 53.9 | 1.33 |
| Netherlands, 1996‡‡ | 22,400 | 6.5 | 10.6 | **0.20** |
| New Zealand, 1995 | 13,700 | 16.4 | 19.1 | 0.49 |
| Norway, 1996 | 14,300 | 15.6 | 19.1 | 0.47 |
| Puerto Rico, 1991–1992 | 19,200 | 22.7 | 23.0 | **0.68** |
| Scotland, 1996§§ | 12,300 | 11.2 | 17.2 | 0.34 |
| Singapore, 1996 | 14,400 | 15.9 | 22.8 | **0.48** |
| Slovak Republic, 1996 | 24,300 | 19.7 | 28.8 | **0.59** |
| Slovenia, 1996 | 10,400 | 23.2 | 35.7 | 0.70 |
| Sweden, 1996 | 32,100 | 18.7 | 25.2 | 0.56 |
| Switzerland, 1996*† | 12,800 | 8.4 | 13.3 | **0.25** |
| Tunisia, 1996 | 19,000 | 8.6 | 7.8 | **0.26** |
| United States, 1996 | 1,365,700 | 22.9 | 25.9 | **0.69** |
| **Incomplete or of unknown completeness** | | | | |
| Albania, 1996 | 21,200 | 27.2 | 23.7 | **0.82** |
| Armenia, 1996 | 31,300 | 35.4 | 39.4 | **1.06** |
| Azerbaijan,1996 | 28,400 | 16.0 | 18.0 | 0.49 |
| Bangladesh, 1995–1996*‡ | 100,300 | 3.8 | 3.1 | **0.11** |
| China, 1995 | 7,930,000 | 26.1 | 27.4 | **0.78** |
| Croatia, 1996 | 12,300 | 12.9 | 18.7 | 0.38 |
| France, 1995 | 156,200 | 12.4 | 17.7 | 0.37 |
| Georgia, 1996 | 26,600 | 21.9 | 33.2 | 0.66 |
| Hong Kong, 1996 | 25,000 | 15.1 | 27.9 | 0.45 |
| India, 1995–1996 | 566,500 | 2.7 | 2.1 | **0.08** |
| Ireland, 1996*§ | 4,900 | 5.9 | 8.9 | **0.18** |
| Italy, 1996 | 140,400 | 11.4 | 21.1 | **0.34** |
| Japan, 1995 | 343,000 | 13.4 | 22.4 | 0.40 |
| Korea (South), 1996†* | 230,000 | 19.6 | 24.6 | **0.59** |
| Kyrgyzstan, 1996 | 24,600 | 22.4 | 17.5 | **0.67** |
| Lithuania, 1996 | 27,800 | 34.4 | 41.5 | **1.03** |
| Macedonia, 1996 | 14,200 | 28.5 | 31.1 | **0.86** |
| Moldova, 1996 | 38,900 | 38.8 | 42.7 | 0.83 |
| Mongolia, 1996 | 15,600 | 25.9 | 18.2 | **0.78** |
| Romania, 1996 | 394,400 | 78.0 | 63.0 | **2.34** |
| Russian Federation, 1995 | 2,287,300 | 68.4 | 62.6 | 2.56 |
| South Africa, 1997 | 26,400 | 2.7 | 2.4 | **0.08** |
| Spain, 1996 | 51,000 | 5.7 | 12.6 | **0.17** |
| Tadjikistan, 1990†‡ | 55,500 | 49.1 | 21.2 | **1.47** |
| Turkey, 1993†* | 351,300 | 25.0 | 20.5 | **0.75** |
| Turkmenistan, 1990†‡ | 37,200 | 44.9 | 22.9 | **1.35** |
| Ukraine, 1996 | 635,600 | 57.2 | 57.6 | **1.72** |
| Uzbekistan, 1996 | 63,200 | 11.8 | 9.5 | **0.35** |
| Vietnam, 1996†§ | 1,520,000 | 83.3 | 43.7 | **2.50** |
| Yugoslavia, 1993 | 119,300 | 54.6 | 45.8 | **1.64** |
| Zambia, 1983 | 1,200 | 0.4 | 0.4 | **0.01** |

*Rounded to the nearest 100. †Abortions per 1,000 women aged 15–44. ‡Abortions per 100 known pregnancies. §The number of abortions that would be experienced by the average woman during her reproductive lifetime, given present age-specific abortion rates. Numbers in bold were estimated by multiplying the rate by 30 and dividing by 1,000.**Including abortions obtained in the Netherlands. ††Including abortions obtained in the United States. ‡‡Residents only. §§Including abortions obtained in England and Wales. *†Includes estimates for two of the 26 cantons. *‡Menstrual regulations. *§Based on Irish residents who obtained abortions in England. †*Based on surveys of ever-married women aged 20–44(Korea) and 15–49(Turkey). ††Includes spontaneous abortions. †§Excludes an estimated 500,000 private-sector abortions. *Sources:* see text.

is about the same as that of Belarus, the former Soviet republic with the highest rate. Before the breakup of the union, Soviet statistics showed Russia to have a higher rate than Belarus or any of the other republics.[22] Even with the undercounts, Russia and Romania have the highest recorded proportions of pregnancies (excluding miscarriages) that end in abortion (63%). In addition, illegal abortions continue to occur in some of the successor states to the Soviet Union; the Russian Federation reported that 5,263 women were treated for complications of illegal abortions in 1995, down from 13,493 in 1991.[23]

Most other developed countries have abortion rates of 10–19 per 1,000. Although reporting is incomplete in France and Italy, their true rates are probably in this range. Australia and the United States (22–23 per 1,000) are slightly above this range. Japan's reported rate is 13 abortions per 1,000, but the completeness of reporting is unknown; given that surveys of Japanese women indicate more abortions than are shown in the official statistics, the actual abortion rate could be well above 20 per 1,000.[24]

Four developed countries with complete data have rates below 10 per 1,000: Belgium, Germany, the Netherlands and Switzerland. Among Dutch-born women in the Netherlands, the abortion rate (about four per 1,000) is much lower than the national level, while the rate among immigrants from former Dutch colonies is much higher. Spain also has a reported rate below 10 per 1,000, but the data are incomplete and the rate is underestimated. Although legal abortion services are completely unavailable in Ireland, at least six of every 1,000 Irish women of reproductive age have abortions each year. Since this statistic counts only women who give Irish addresses when having abortions in England or Wales, the true rate is likely to be higher.

Although most developing countries with nonrestrictive laws tend to have rates of 30 or more abortions per 1,000 women, the abortion rates in both Puerto Rico and Tunisia are remarkably low—23 per 1,000 in Puerto Rico and nine per 1,000 in Tunisia—given their low total fertility rates (2.0 and 2.9 lifetime births per woman, respectively). Contraceptive prevalence is high in both areas—78% among Puerto Rican women in 1996[25] and 60% among married Tunisian women in 1994.[26]

Bangladesh and India have low official rates of menstrual regulation and abortion, respectively, but the actual rates are much higher. An estimated 468,000 menstrual regulation procedures are performed each year by trained practitioners in Bangladesh,[27] almost four times the reported number. In India, the number of abortions performed by physicians is estimated to be twice the reported number, and the number performed by nonphysicians is thought to be several times the reported number.[28]

According to official statistics, South Africa's abortion rate is only three per 1,000. The South African law allowing abortions during the first trimester went into effect

in February 1997, and services are not yet available to fully meet demand.[29] Many illegal abortions still take place.[30]

Although the official rate in China is 26 abortions per 1,000 women, the true rate is probably between 30 and 35 per 1,000, close to the world average, when the undercount is considered.

The numbers of abortions in South Korea and Turkey shown in Table 2 are minimum estimates based on surveys of ever-married women, who may not have reported all of their abortions. The rates are calculated as the number of abortions reported by ever-married women per 1,000 women of all marital statuses aged 15–44. The rates—20 per 1,000 in South Korea and 25 per 1,000 in Turkey—would be higher if abortions obtained by unmarried women were included. A survey of abortion providers in one city in Korea in 1979 found that 28% of abortions were obtained by never-married women.[31] If the same percentage were applicable nationally in 1996, the number would be 320,000 and the abortion rate 27 per 1,000. In Turkey, there is little information on the extent of underreporting or on the number of abortions obtained by never-married women.

### *Countries Where Abortion Is Illegal*

Data-based estimates of the number of induced abortions are available in the literature for only 10 countries where the procedure is highly legally restricted.[32] Because estimates of numbers of abortions are based on numerous factors, many of which cannot be measured precisely, most analysts have calculated a range, based on varying assumptions, that encompasses their best estimate (Table 3). The factor that explains most of the spread in the range is the proportion of all women having abortions who are expected to be hospitalized. This proportion is estimated to range from 14% to 67% (column three divided by column six), depending on the safety of abortion service provision and access to hospitals.*

The proportion of women hospitalized for complications of abortion is based on several variables for which accurate measurement is not possible. The extent to which safe abortion is practiced, the probability of complications arising from procedures provided by nonphysicians and the ease of access to a hospital are all reflected in this factor. Moreover, the factor itself was estimated from different sources, including community surveys that provide the proportion hospitalized among all women reporting having had an abortion, and surveys of informed health professionals that ask their opinion on the probability of women experiencing complications from abortion and the probability of obtaining medical care if they do so.[33]

**Table 3. Measures of induced abortion and hospitalization for abortion complications, for 10 countries where abortion is highly legally restricted, by country**

| Country and year | Abortions | | | | Hospitalizations | |
|---|---|---|---|---|---|---|
| | Best estimate of number | Range | Rate* | Ratio* | No. | Rate |
| Bangladesh, 1995† | 730,000 | 678,000–783,000 | 28.0 | 18.0 | 71,800‡ | 2.8 |
| Brazil, 1991 | 1,444,000 | 1,021,000–2,021,000 | 40.8 | 29.8 | 288,700 | 8.1 |
| Chile, 1990 | 160,000 | 128,000–224,000 | 50.0 | 35.3 | 31,900 | 10.0 |
| Colombia, 1989 | 288,000 | 288,000–404,000 | 36.3 | 26.0 | 57,700 | 7.2 |
| Dominican Republic, 1990 | 82,000 | 58,000–115,000 | 47.0 | 27.9 | 16,500 | 9.8 |
| Egypt, 1996 | 324,000 | u | 23.0 | 15.7 | 216,000 | 15.3 |
| Mexico, 1990 | 533,000 | 297,000–746,000 | 25.1 | 17.1 | 106,500 | 5.4 |
| Nigeria, 1996 | 610,000 | 428,000–610,000 | 25.4 | 12.0 | 142,200§ | 6.1 |
| Peru, 1989 | 271,000 | 271,000–380,000 | 56.1 | 30.0 | 54,200 | 10.9 |
| Philippines, 1994 | 401,000 | 320,000–481,000 | 25.0 | 16.0 | 80,100 | 5.1 |

*Based on best estimates presented in column 1. †Bangladesh estimates for induced abortion include an estimated number of menstrual regulations (468,000). For officially reported numbers of (legal) menstrual regulations, see Table 2. ‡Includes 19,400 women hospitalized due to complications resulting from a menstrual regulation procedure. §Includes 21,500 women treated for complications from an abortion performed by a physician. *Note:* u=unknown. *Sources:* see reference 17.

The preferred estimates within the ranges shown are close to the midpoint of the range for six of the nine countries for which multiple estimates are available, but are at either the top end or the bottom end of the range for the other three countries.

Although abortion is illegal in all of these countries, the estimated annual rate of abortion ranges from 23 per 1,000 women aged 15–44 in Egypt to 56 per 1,000 in Peru (Table 3). The variation in the abortion ratio (the number of abortions per 100 pregnancies) follows the same pattern, with the countries that have lower abortion rates also having lower abortion ratios (12–18 abortions per 100 pregnancies) and those with higher abortion rates having higher abortion ratios (28–35 abortions per 100). In Colombia, both the abortion rate and the abortion ratio are close to the world average. The ranking by ratio does not exactly mirror the ranking according to the rate, however, because the abortion ratio in any given country is influenced by the country's level of fertility.

Surveys of health professionals suggest that some induced abortions in highly restrictive countries are safe procedures, provided by physicians in medical settings.[34] Nevertheless, a substantial proportion are done using unsafe procedures, or by providers other than physicians. The estimated number of women hospitalized for treatment of a complication of induced abortion is a good indicator of the extent to which unsafe abortion continues to endanger women's health and lives (Table 3). According to these estimates, 3–15 women out of every 1,000 are hospitalized each year for treatment of complications from an induced abortion.

## Discussion

Worldwide, about one-fourth of the approximately 180 million pregnancies known to occur each year are resolved by abortion. Abortions numbered an estimated 46 million in 1995, but given the uncertainty of the data, that number could be as low as 42 million or as high as 50 million. About 35 in every 1,000 women aged 15–44 have an abortion each year.

The high rate of abortion worldwide reflects the frequent occurrence of unplanned pregnancy in many developed and developing countries, a result of far from universal (although increasing) contraceptive use. As the Cairo Programme of Action states, unwanted pregnancy and abortion can be reduced by expanding and improving family planning services.

Unwanted and mistimed pregnancies continue to occur primarily because sexually active women who do not want a child are not using an effective contraceptive method, but also because all methods have some risk of failure and methods are not always used correctly. In addition, the conditions at the time of a conception can change during pregnancy, and women and their partners may be ambivalent about

*Estimates in six countries in Latin America in the late 1980s and early 1990s are based on expected proportions of women hospitalized varying from 15% to 20%; the proportions used for 1994 estimates for the Philippines range from 17% to 25%. In Bangladesh, the proportions (for 1995) do not include menstrual regulation procedures, and in Nigeria the statistics (for 1996) apply only to abortions provided by nonphysicians. The proportions used for Bangladesh range from 17% to 25% (because of women's poor access to hospital care), and those used for Nigeria range from 33% to 66% (under the assumptions that unsafe abortion has a very high probability of complications and that medical care for this kind of complication is reasonably available). This proportion is used to estimate the total number of abortions occurring—if the proportion hospitalized is 25%, then the total number of women having abortions in a given year is the number of hospitalized women multiplied by 4 (1/0.25).

whether they want to have a child at that time, or they may disagree.

Among the developed countries, rates are highest in Eastern and Central Europe and the successor states to the Soviet Union. From the mid-1950s until recently, abortion services were available without charge in these countries, but contraceptive services and methods were scarce. Contraceptive prevalence was low because the quality of condoms was poor, the only oral contraceptives available were usually high-dose types, contraceptive sterilization was legally restricted and barrier methods other than condoms were rarely available. Condom and pill supplies were sporadic, making it difficult to depend on these methods for long-term use.[35] In addition, IUDs were not always available and their quality was poor, leading to high failure rates.[36] Thus, couples came to rely heavily on abortion to control fertility.

Among the developing countries, Cuba and Vietnam currently have the highest documented abortion rates. The high rate in Cuba may be attributed to a desire for low fertility combined with access to a limited range of contraceptive methods, use of low-quality IUDs and irregular contraceptive supplies.[37] A high proportion of abortions are obtained by teenagers (33% in 1990),[38] suggesting a high rate of sexual activity among adolescents who wish to postpone childbearing.

In Vietnam, reasons for the high level of abortion include a rapid decrease in preferred family size (not matched by an equivalent increase in use of contraceptives); heavy reliance on one method (an IUD with a relatively high failure rate); and supply problems with other methods. In addition, sexual activity appears to have increased among unmarried women.[39]

Even though abortion is restricted, abortion rates are estimated to be around 30 per 1,000 or higher in Latin America, in three of the five subregions of Africa and in the subregions of Asia where most countries have restrictive abortion laws. As motivation to have a small family began to increase in many Latin American countries in the 1960s, couples started to use both contraceptives and abortion to achieve a small family and, increasingly, to influence the timing of their births.[40] Contraceptive use had risen to quite high levels by the 1990s, and analyses of the situation in three countries with data suggest that abortion rates are starting to decline in the major metropolitan areas of Colombia and Mexico, although they remain high in other parts of these countries and in Brazil.[41]

In much of Sub-Saharan Africa, reproductive preferences and behavior have begun to change in the last decade, although most couples still prefer a large family and contraceptive prevalence generally remains low.[42] Levels of contraceptive use are rising as fertility preferences begin to change, but use of abortion is probably also increasing. In Sub-Saharan Africa as well as Latin America, increasing levels of sexual activity before marriage are likely to lead to greater use of abortion.[43]

If effective contraceptive use is widespread, abortion rates can be very low even in countries where fertility is low and where the rate of sexual activity among unmarried women is high. The lowest documented abortion rates are in Belgium and the Netherlands, countries that rely on contraception to maintain low fertility. In both countries, abortion services are provided without charge to the woman, and abortion is legal under broad conditions.

One developing country, Tunisia, also has a low abortion rate even though abortion is legal under broad conditions during the first trimester and the TFR is low (2.9 lifetime births per woman[44]). The example of Tunisia suggests that in developing as well as developed countries, good family planning services and a high level of contraceptive use can lead to low abortion incidence. Likewise, decreases in contraceptive use can result in higher abortion rates, as occurred in England and Wales and Norway after the negative publicity about third-generation pills in October 1995.[45] Earlier pill scares in England and Wales and the Netherlands were also reflected in higher abortion rates.[46]

Where abortions are clandestine and unsafe, the consequences for women's health and survival are damaging, especially for poor, rural, less-educated and young women, and the impact on countries' health care systems also cannot be ignored. In many countries of Latin America, Sub-Saharan Africa and Asia, current trends toward small family preferences and rising premarital sexual activity may continue to increase women's and couples' need for abortion, as they seek to avoid unwanted births but continue to face barriers to effective contraceptive use.

## Appendix

The United Nations regional groupings include the following countries and territories with populations of at least one million.

### *Africa*

- *Eastern Africa.* Burundi, Ethiopia, Kenya, Madagascar, Malawi, Mauritius, Mozambique, Rwanda, Somalia, Uganda, Tanzania, Zambia and Zimbabwe.
- *Middle Africa.* Angola, Cameroon, Central African Republic, Chad, Congo, Democratic Republic of Congo and Gabon.
- *Northern Africa.* Algeria, Egypt, Libyan Arab Jamahiriya, Morocco, Sudan and Tunisia.
- *Southern Africa.* Botswana, Lesotho, Namibia and South Africa.
- *Western Africa.* Benin, Burkina Faso, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone and Togo.

### *Latin America*

- *Caribbean.* Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico and Trinidad and Tobago.
- *Central America.* Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama.
- *South America.* Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay and Venezuela.

### *Northern America*

Canada and the United States

### *Asia*

- *Eastern Asia.* China, Democratic People's Republic of Korea, Hong Kong, Japan, Mongolia and Republic of Korea.
- *South-central Asia.* Afghanistan, Bangladesh, Bhutan, India, Iran, Kazakhstan, Kyrgyzstan, Nepal, Pakistan, Sri Lanka, Tajikistan, Turkmenistan and Uzbekistan.
- *South-eastern Asia.* Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.
- *Western Asia.* Armenia, Azerbaijan, Georgia, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Saudi Arabia, Syrian Arab Republic, Turkey, United Arab Emirates and Yemen.

### *Europe*

- *Eastern Europe.* Belarus, Bulgaria, Czech Republic, Hungary, Moldova, Poland, Romania, Russian Federation, Slovak Republic and Ukraine.
- *Northern Europe.* Denmark, Estonia, Finland, Ireland, Latvia, Lithuania, Norway, Sweden and United Kingdom.
- *Southern Europe.* Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Portugal, Slovenia and Spain.
- *Western Europe.* Austria, Belgium, France, Germany, Netherlands and Switzerland.

### *Oceania*

Australia, New Zealand and Papua New Guinea.

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## Resumen

**Contexto:** Se ha puesto difícil en muchas áreas del mundo la medición idónea de niveles de aborto inducido. Los trabajadores de salud y los encargados de formular políticas necesitan disponer de información sobre la incidencia de aborto, tanto legal como ilegal, para ofrecer los servicios requiridos para disminuir el impacto negativo que puede tener el aborto inseguro en la salud de la mujer.
**Métodos:** Se estimaron los números y las tasas de abortos inducidos en base a cuatro fuentes: estadísticas oficiales o datos nacionales sobre abortos legales en 57 países; las estimaciones basadas en encuestas demográficas de dos países que no cuentan con estadísticas oficiales; estudios especiales de 10 países donde se prohíbe estrictamente el aborto; y estimaciones mundiales y regionales de abortos no seguros obtenidos de la Organización Mundial de la Salud.
**Resultados:** En 1995, se realizaron aproximadamente 26 millones de abortos legales y 20 millones de abortos ilegales en todo el mundo, lo cual resulta en una tasa mundial de 35 abortos por cada 1.000 mujeres de 15–44 años. Entre las subregiones del mundo, Europa Oriental presentó la tasa más elevada (90 por 1.000) y Europa Occidental la más baja (11 por 1.000). Entre los países donde el aborto es legal y no restringido, la tasa más elevada, 83 por 1.000, se registró en Vietnam y la más baja, 7 por 1.000, en Bélgica y los Países Bajos. En general, las tasas de aborto en los países que restringen el procedimiento por ley (y donde muchos abortos se realizan en condiciones inseguras) no son más bajas que las tasas que predominan en

los países que permiten el aborto.
**Conclusiones:** Tanto los países más desarrollados como los menos desarrollados pueden tener bajas tasas de aborto. Sin embargo, la mayoría de los países registran tasas de aborto entre moderadas y elevadas, lo cual refleja una baja prevalencia de uso anticonceptivo y una eficacia de uso inadecuada. Las restricciones legales severas no garantizan una baja tasa de abortos.

## Résumé

**Contexte:** La mesure précise des niveaux d'avortement s'est avérée difficile dans de nombreuses régions du monde. Les prestataires de soins de santé et les décideurs doivent disposer d'informations sur l'incidence de l'avortement tant légal qu'illégal pour assurer les services nécessaires et réduire les risques, pour la santé des femmes, de l'avortement pratiqué dans des conditions peu sûres.
**Méthodes:** Les nombres et les taux d'avortement ont été estimés au départ de quatre sources: statistiques officielles ou autres données nationales relatives à l'avortement légal dans 57 pays; estimations basées sur les enquêtes démographiques de deux pays ne disposant pas de statistiques officielles; études spéciales pour 10 pays soumis à de sérieuses restrictions de l'avortement; et estimations mondiales et régionales de l'Organisation mondiale de la santé sur l'avortement à risques.
**Résultats:** Environ 26 millions d'avortements ont été pratiqués légalement dans le monde, et 20 millions l'ont été clandestinement, en 1995, soit un taux mondial d'avortement de 35 par millier de femmes âgées de 15 à 44 ans. Parmi les sous-régions du monde, l'Europe de l'Est présentait le taux le plus élevé (90 pour 1.000) et l'Europe de l'Ouest, le taux le moins élevé (11 pour 1.000). Parmi les pays où la procédure est légale, le taux d'avortement le plus élevé (83 pour 1.000) a été relevé au Viet Nam, et le moins élevé (sept pour 1.000), en Belgique et aux Pays-Bas. Les taux d'avortement ne sont pas moindres, dans l'ensemble, dans les régions où la procédure est généralement limitée par la loi (et où elle est souvent pratiquée dans des conditions peu sûres) que dans celles où elle est légale.
**Conclusions:** Les pays industrialisés comme ceux en voie de développement peuvent avoir des taux d'avortement faibles. La plupart des pays présentent toutefois des taux modérés à élevés, reflet d'une prévalence et d'une efficacité moindres de la pratique contraceptive. Les restrictions légales rigoureuses ne garantissent nullement des taux d'avortement faibles.

# INSTRUCTIONS FOR AUTHORS

*International Family Planning Perspectives* is a peer-reviewed quarterly research journal serving an audience that crosses professional specialties, educational backgrounds and developing-country boundaries. We define family planning broadly, and invite submissions from researchers, policymakers and program providers on such topics as contraceptive practice and research; fertility levels, trends and determinants; adolescent pregnancy; abortion; public policies and legal issues affecting family planning and childbearing; program operation, development and evaluation; information, education and communication activities; sexually transmitted diseases; and reproductive, maternal and child health.

We receive manuscripts with the understanding that they are not under consideration elsewhere and that the substance of the data or analysis has not been published previously. Submissions undergo a two-tiered review process. They are screened initially by the editorial staff for overall quality and interest; about 60% are rejected at this stage and the author notified within six weeks of submission. The surviving submissions undergo double-blind peer review by at least two experts in the field. Authors of articles sent for review can expect to receive critiques of their manuscript about three months after submission, with guidance from the editors as to whether to proceed with a revision or submit elsewhere.

We expect manuscripts to be double-spaced, with all pages numbered; only one copy is needed. The title page should include the names, titles and affiliations of all authors; we limit the number of authors to eight. (Multicenter clinical studies may have no more than 10 authors.) A word count is mandatory; we look unfavorably upon articles of more than 6,000 words (not including references). The text should be preceded by a data-based abstract of no more than 250 words.

Use active voice when writing the text. Stick to plain English and avoid the jargon known only to sociological, demographic, psychological and medical subspecialties. In particular, describe the study's methodology clearly and simply, keeping in mind that some readers may not be familar with specific statistical techniques.

The maximum number of tables and other graphic elements is eight. Tables and charts should not be interspersed within the manuscript; instead, number them and place each one on a separate page at the end of the text.

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Footnotes and references are separate elements and should not be intermingled. Used sparingly, footnotes are appropriate for parenthetical or explanatory information that cannot be smoothly accommodated in the text. To distinguish them from references, a system of symbols or letters may be used. Please do not use computer automatic numbering functions for either references or footnotes (i.e., do not "embed" them in the text); type them at the end or place them in a separate computer file.

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