CHAPTER 1

Generating National Unsafe Abortion Estimates: Challenges and Choices

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Unsafe abortions are of major public health significance. As far back as 40 years ago, in 1967, the World Health Assembly recognized that unsafe abortions constituted a serious public health problem in many countries (World Health Organization [WHO] 1967). However, it was the 1987 Safe Motherhood Conference, held in Nairobi, which played a pivotal role in the recognition of unsafe abortion as a major health hazard and an important contributor to maternal mortality and morbidity (Cohen 1987). Since then, several global conferences such as the 1994 International Conference on Population and Development stressed the prevention of unsafe abortion as critical to improving maternal health and reducing maternal mortality (United Nations 1995; United Nations General Assembly 1999). Moreover, addressing unsafe abortion is critical to realizing the 2000 Millennium Development Goal of improving maternal health.

It is well known that induced abortion is stigmatized and that women are reluctant to report having had one. *Unsafe* induced abortions are especially difficult to measure and, in general, their occurrence can only be estimated indirectly. Underreporting of all procedures occurs even where abortion is legal on request or under broad conditions; unsafe abortions in particular may not be reported at all or be recorded as spontaneous abortions (miscarriages). Therefore, obtaining reliable information on the incidence of unsafe abortion poses major challenges.

WHO has estimated incidence globally and by region since the early 1990s to document the public health problem of unsafe abortion. These estimates are built from country-specific information; however, aggregated estimates at the regional and global level are more robust and can potentially offset individual country-level underestimation or error. Global and regional unsafe abortion estimates have been published by WHO for the years 1993, 1996, 2000 and 2003 (WHO 1994; WHO 1998; WHO 2004; WHO 2007). These likely conservative estimates suggest that, worldwide, roughly 19–20 million unsafe abortions are performed each year. Indeed, expanded access to data and improvements in research techniques have shown that some early unsafe abortion estimates by WHO, particularly those for Sub-Saharan Africa, were underestimates.

The primary objective of this chapter is to encourage and facilitate researchers in finding ways to make and publish national-level estimates of unsafe abortion where such estimates are currently unavailable. Knowing the magnitude of unsafe abortion in a given country facilitates an informed discussion on the abortion issue and on improving women's reproductive health there. The country-level incidence of unsafe abortion can be employed for local advocacy and interventions, and would better establish the scope of the problem at regional and global levels. We support such endeavors by drawing attention to underused data and relevant research to approximate national estimates of unsafe abortion. Currently, there are fewer than 20 published country-level estimates; however, data of acceptable quality exist that can be evaluated and analyzed to produce more appraisals of individual countries. A well thought-out, critical assessment of the magnitude of unsafe abortion at the country level is more useful than mere recognition of the problem.

This chapter builds on WHO methodology and experience in making regional and global estimates over the last 15 years. It also reflects an extensive review of the literature and approaches used to collect and present information on the incidence of unsafe abortion. We first briefly explain WHO's experience in the estimation of unsafe abortion. Then we outline how country-level assessments of unsafe abortion can be developed by drawing on existing methodologies, so researchers can make use of work that has already been done. Finally, we suggest that appropriate population data accompany all estimates of unsafe abortion incidence to allow calculations of rates or ratios, so estimates are strictly comparable. We also identify regions with little usable data or where data are outdated. This chapter thus covers ways of facilitating and improving the national measurement of the incidence of unsafe abortion and of narrowing existing information gaps.

Defining Unsafe Abortion

Induced abortions are performed both within the law and outside it. However, the risk to a woman's health will always depend on the circumstances of the procedure and the medical skills of the abortion provider. In some countries, the lack of resources to invest in medical infra-

structure and inadequate medical skills among providers may mean that even abortions that meet the legal and medical requirements of a country carry a higher degree of risk than those performed in high-resource settings.

Induced abortion is a very safe procedure when performed by qualified persons using correct techniques in sanitary conditions and with proper postabortion care (Gold 1990). WHO defines unsafe abortion as a procedure for terminating an unintended pregnancy that is carried out either by persons lacking the necessary skills or in an environment that does not conform to minimal medical standards, or both (WHO 1992). Induced abortions that are done outside the law are frequently performed by unqualified and unskilled providers, or are self-induced; such abortions often take place in unhygienic conditions and involve the use of dangerous methods or the incorrect administration of medications.

However, even when clandestine abortions are performed by a medical practitioner, such procedures are conducted outside a recognized facility and thus generally carry additional health risks: Medical back-up is not immediately available in an emergency, the woman may not receive appropriate postabortion care, and if complications develop, she may hesitate to seek care. Procedures carried out by medical personnel with variable skills in somewhat unsafe settings are therefore counted as unsafe abortions. The incidence of unsafe abortion and its relative health risk thus differ by a given country's provider skills, resources invested in the health system (including the abortion methods used) and de facto application of the law (Berer 2004). Thus, induced abortions occur on a sliding multidimensional scale of resources, skills and legality. Operationally, estimates of unsafe abortion are intended to capture abortions that carry greater health risks than those carried out for officially accepted reasons under the laws of the country concerned. Abortions that are performed within the parameters of the law and officially accounted for are addressed elsewhere (Sedgh et al. 2007).

Estimating Incidence: The WHO Approach and Experience

Here we briefly summarize the approach that WHO uses to calculate global and regional estimates of the incidence of unsafe abortion,* which are aggregated from country-level information and estimates. First, an extensive literature search is performed to take into account any published country-specific estimates. All known studies reporting subnational or national data are included in a database along with critical information related to the reported data and the corresponding methodology and coverage of each study. When no country-level estimate is published, we extrapolate from national or subnational abortion data using the regional and global estimation process. Evaluations of available data for a country also consider a wide range of abortion research to formulate appropriate assumptions (WHO 2007) and make the adjustments needed to approximate the most probable magnitude of unsafe abortions for a given country.

The abortion figures are assessed together with the legal grounds for abortion, the total fertility rate, overall and modern contraceptive prevalence, and any other available contextual national information (such as a recent change in the law). To arrive at regional and global estimates of unsafe abortion, we aggregate national rates that are calculated for the data year and are projected forward to yield the number of unsafe abortions in a given reference year. We discuss three major approaches to estimating national-level incidence that rely on national or subnational data: adjusting by applying *multipliers* to hospitalized abortion cases; correcting for *underreporting* in surveys; and applying a ratio of *urban to rural abortions* to account for the lack of data from rural areas, when applicable.

Currently, the two main sources of data are health service statistics and a variety of types of surveys, although additional promising approaches use other sources of data (Johnston and Hill 1996; Lara et al. 2004; Westoff 2008). Corrections of such raw data are indispensable. Hospitalization numbers, for example, show only complications from unsafe abortion that reach health institutions for treatment, leaving out both women who are reluctant to seek needed help and those with only minor complications (Singh and Wulf 1994). Even in countries where the procedure is legal, in surveys women underreport their abortion experiences (Fu et al. 1998; Jones and Kost 2007), so further adjustments are needed. Obviously, country assessments that are needed to make global estimates and that rely on adjustments applied in other countries (instead of on research that is specific to unsafe abortion in that country) are somewhat less precise than country-level published national estimates, which best serve the needs for interventions and global estimation. (For further information, see WHO 2007.)

*A detailed description of the methodology is found in Chapter 6 and Annex 1 of *Unsafe Abortion. Global and Regional Estimates of the Incidence* of *Unsafe Abortion and Associated Mortality in 2003,* fifth edition, which can be requested from WHO or downloaded from http://www.who.int/reproductivehealth/publications/unsafe_abortion/9789241596121/en/index.html.

National Estimates: The Basis for Strategic Planning

We consider it essential to expand research on country-by-country estimates of unsafe abortion incidence. While this goal may not be immediately feasible, it is often possible to assess existing data and extrapolate them to the national level while pursuing more precise estimates in the long term. The ultimate goal, at any one time, is to have the best possible country-level estimates of the incidence of unsafe abortion available in the public domain.

A publically available national estimate of the incidence of unsafe abortion increases the local knowledge base, feeds into strategic planning, and informs decision making and program implementation. National-level estimates can be an especially powerful advocacy tool. They are also essential to providing a baseline from which to measure changes over time or the effects of specific interventions. The improved national-level data provide the added bonus of strengthening the regional and global estimates that they provide the basis for.

Whereas subnational small-scale studies may be of interest, investigators should consider assumptions that can be generalized and, if possible, extrapolate their data to the national level. On the other hand, unsafe abortion estimates should not be done at the expense of quality; publishing unsubstantiated figures of unsafe abortion may be counterproductive. Researchers have the responsibility to fully explain their findings. Only well-argued and reliable results can help influence opinion, policy and decision makers. An estimate of unsafe abortion incidence in a country can potentially mobilize support for increased resources, including for contraceptive information and services, to help women avoid unintended pregnancy and safeguard their reproductive health.

Although fewer than 20 national-level estimates, some done a decade ago or earlier, were available to develop WHO's 2003 estimates, we were able to identify heretofore unused relevant data at the national level for another 30 countries. In some instances, more recent data were available than the widely accepted estimates, which provided opportunities for analyzing trends over time. More possibilities exist for assessing the unsafe abortion situation than is generally perceived to be the case. We surmise that as many as 80% of the world's unsafe abortions can be measured from available national data, taking into account official national estimates and assessments from currently unadjusted national data (Table 1). Making the necessary, well-argued adjustments to existing abortion data could vastly expand the number of publishable national estimates. Better still, complementary research into appropriate adjustment factors could be performed, which would make those estimates more reliable.

Assessing National Incidence by Filling in the Gaps

This section briefly reviews issues that arise from assessing the incidence of unsafe abortion at the national level. Our analysis draws on the numerous studies that were reviewed to estimate the global and regional incidence of unsafe abortion as recently as 2007 (and earlier). The recommendations reflect our disappointment at finding imprecise terminology, a too-narrow perspective that resulted in omitted data and a failure to identify data that are currently available. In the following section, we suggest ways for researchers to generate more national-level estimates of unsafe abortion. We organize the discussion in 10 interrelated (but not exhaustive) points under the following five categories:

- underused sources of national data (points 1–2) and reliance on existing adjustment factors;
- new research into correction factors to adjust data from surveys, hospitals and urban areas only (points 3–5);
- need for appropriate population data to accompany unsafe abortion data (points 6–7);
- identification of countries and regions where data are scarce or no longer recent enough to be reliable (points 8–9); and
- the need for unambiguous terminology to improve estimation efforts (point 10).

Underused Existing National Data

1. Unadjusted, reliable country-level data

Unsafe abortion incidence cannot generally be measured directly. The appropriate and ideal method to arrive at a national estimate is through a two-pronged approach of data collection matched by complementary research to determine the adjustments needed to extrapolate to the national level. Data collection efforts that, for whatever reason, omit the extrapolation research component miss an opportunity to provide a national-level estimate (Gebreselassie et al. 2004; Jewkes et al. 2005; Warakamin et al. 2004). Well-informed local researchers can generate a national-level estimate by extrapolating from data that have already been collected and by relying on research to calculate appropriate adjustments (see points 3–5 below). Alternatively, reasonable correction factors from another country with similar basic parameters can be used to generate an approximate national estimate or provide a probable range of estimates.

2. Underused hospital and raw survey data

Identifying and using already existing data is very cost-effective. Data that are relatively easy to access but are

currently underused for abortion estimation purposes include Ministry of Health data—published or posted on Web sites—of national hospital abortion admissions and birth data. These can be found in countries with good hospital statistics, mainly in Latin America and Asia (Dirección Nacional de Políticas de la Salud Panamá 2005; Caja Costarricense de Seguro Social 2003; Ministerio de Salud y Deportes [Bolivia] 2006; Ministry of Health [Brazil] 2006; Rostagnol 2007; Faneite 1997; Health Information Directorate [Bahrain] 2003; Project Inco-MED-TAHINA 2005). The ratio of admitted abortion patients (adjusted to exclude spontaneous abortions) to hospital-based births can provide the basis for applying the widely used technique of estimating unsafe abortion through data on hospital admissions for treatment of abortion complications (Singh and Wulf 1994).

Relying on existing data from public sources would presumably generate less complete information than would actively collecting and scrutinizing hospital admission records; however, it will be a close approximation. Research resources could then be directed toward obtaining a country-specific multiplier to generate a reliable national-level estimate (see point 3 below). In addition, researchers can identify other public sources of data that are only available locally (McNaughton et al. 2002). For some less-researched countries, published or Web-posted data are accessible only to researchers familiar with the local situation and language.

The use of existing national or subnational survey data would free up resources to focus on calculating multipliers to adjust for underreporting (see point 4 below). Alternatively, one could combine existing national survey data with external correction factors to adjust for underreporting (Islam and Damena 2004; Oliveras 2003). The different approaches yield estimates of varying precision; however, authors should not be too fearful of publishing a well-discussed range of possible estimates, as long as the estimates clearly point at the overall magnitude of unsafe abortion.

National researchers will have the best chance of identifying other local data sources that external researchers may be unaware of; they should therefore scrutinize every option to find and effectively use all available survey or hospital data.

Research to Generate Adjustment Factors to Apply to Estimates from Hospital, Survey or Area-of Residence (Urban or Rural) Data

3. Adjustments for unsafe abortions not captured in hospital data

The most well-known way to estimate unsafe abortion in a country is to start with national estimates of hospitalized abortion cases (see point 2) (Singh and Wulf 1994). However, hospital data show just the tip of the iceberg, and only a minority of women who have had an unsafe abortion will need, decide to seek and obtain hospital care. Through a survey of knowledgeable health professionals, a multiplier is established to account for women who had an induced abortion but did not obtain hospital care. Currently, multipliers from 2 to 7 are applied to the rate of hospitalized abortion cases in different countries (Singh and Wulf 1994; Huntington 1997; Singh et al. 1997; Singh et al. 2005; Singh et al. 2006; Ferrando 2002; Sathar et al. 2007; Juarez et al. 2005). The "safer" the abortion, the higher the multiplier. Studies using this methodology regularly report both the input data and a multiplier (adjustment factor) to yield reliable national estimates. Expanding the "pool" of existing studies that have estimated adjustment factors to apply to national hospital abortion data would help produce more low-cost estimates of the incidence of unsafe abortion in individual countries, especially resource-poor ones.

To further the use of hospital data, which are relatively easy to come by from local, regional and national facilities, innovative research approaches are needed to determine the hospitalization rate among women who have unsafe abortions. Surveys that capture the methods women use to induce abortion, the morbidity caused by unsafe abortion and women's care-seeking behavior can also be used to help generate multipliers and validate the results of the Health Professionals Surveys mentioned above (Centers for Disease Control and Prevention [CDC] and ORC Macro 2003). Another possibility is a "reverse sisterhood method" whereby women hospitalized for complications of unsafe abortion are interviewed to estimate the number of "sisters" or "close friends" who had an unsafe abortion and did not develop complications requiring hospital care. However, we should always keep in mind that corrections to hospital data are as important as the data themselves, in some ways more so, as the final estimates are particularly dependent on the multiplier that is applied to the data.

There are pitfalls in using the number of hospitalized abortion cases, however, since these numbers have to be carefully assessed. For example, both public and private hospitals need be included in national-level estimates. If that is not possible, we need to take into account individual hospitals' share of all abortions and/or distribution of births to correctly extrapolate to the national population (see point 6 below) (Kenya Central Bureau of Statistics 2004). Collecting national data on hospitalized abortion cases is not a task easily undertaken and is only the first step in estimating abortion incidence (Jeppsson et al. 1999).

4. Correction factors for underreporting in surveys

Even "good" data may need to be corrected (Walker et al. 2007), since abortions in general—and unsafe abortions in particular—are well known to be underreported in population-based surveys due to the sensitivity of the issue. Many women simply do not report having had an induced abortion or prefer to report induced abortions as "miscarriages." Further study on why women do not report their abortions should focus on personal circumstances, prevailing attitudes toward abortion and the extent to which restrictive laws are applied.

Surveys rarely achieve a complete count of all abortions or appropriately adjust for underreporting, so an adjustment factor is always needed. The available "pool" of adjustment factors needs to be expanded so they can be used in similar settings where surveys have not been conducted. There is an urgent need for research into underreporting *per se,* so population-based surveys can uncover the *true* incidence of unsafe abortion (Islam et al. 2004; Oliveras 2003). The extent of underreporting depends largely on the survey method or approach used. Studies to identify how survey approaches influence underreporting in different settings may provide insights into the circumstances and causes of underreporting.

The results of these studies would be useful for correcting existing and future survey data with an unknown level of underreporting. For example, a study conducted in Accra, Ghana, compared women's self-reports of abortion in a household survey with abortion data gathered as part of medical histories (Oliveras 2003). Self-reports of abortions, miscarriages and any pregnancy loss were always consistently higher in the medical histories than in the household surveys (by factors of 4.0, 2.6 and 3.0, respectively). These results suggest that women are highly sensitive toward reporting all forms of pregnancy loss in surveys. Interestingly enough, some induced abortions were only reported in the survey but not in the medical history; however, medical histories alone captured 95% of induced abortions.

Further investigation of the causes and extent of underreporting may consist of reinterviewing women, applying randomized response techniques to validate survey results, and using combinations of structured survey questionnaires and in-depth interviewing methods.

5. Extrapolation from subnational data (for example, from rural or urban areas)

When no national data are available, weighting data from rural and urban areas by the urban/rural population distribution provides a useful approach to measuring national-level estimates. However, when data are available from just *one* area of residence, we need to know the urban-to-rural ratio to estimate national-level incidence, albeit with less precision.

Because unsafe abortion rates are generally lower in rural than urban areas (Agyei et al. 1992; Katsivo 1993; Ismael and Damena 1996; Geelhoed et al. 2002; Asociación Demográfica Salvadoreña 2004; Ezimova et al. 2001), a known ratio of abortion incidence (for example, rural vs. urban) can allow for a countrywide estimate even when only a subnational incidence study is available (Ahiadeke 2001). When the rural/urban abortion incidence ratio for a given country is not known, researchers can use the ratio from similar settings or countries; however, more assumptions yield less precise estimates.

Knowing the magnitude of unsafe abortion in urban and rural areas of a country is crucial for planning the provision of postabortion care services and interventions. Some potentially complicating factors to consider in gauging the ratio of rural-to-urban unsafe abortions include the following:

- Women living in rural areas will seek care in urban hospitals: Will this inflate the ratio of hospitalized abortion patients to deliveries in urban areas, or are rural women as likely to go to urban hospitals for abortion care as for delivery care?
- Using the same methodology to generate estimates for both rural and urban settings may be particularly useful for calculating a national estimate. Sentinel studies, appropriately dispersed over the country (not only in the capital city), could be a cost-effective approach.
- Assessing the extent to which a subnational study is representative of the country as a whole is essential to generalizing or adjusting its results.

Abortion studies in countries where the procedure is highly restricted are often ad hoc and many factors must be considered in determining whether and how to generalize from the data. This is particularly true for countries of the Middle East.

Need for Appropriate Population and Age Data

6. Matched abortion and population data to calculate rates or ratios

We cannot emphasize enough that the abortion numbers and their corresponding rates and ratios must not only be correct, but be described unambiguously and put into meaningful context. To avoid misunderstandings, facilitate verification and assure comparability, abortion numbers should preferably be reported along with their appropriate population numbers *and* the corresponding rates and ratios. Valuable research may become ineffective if this is not done.

A study that reports only a national abortion *hospitalization* rate or ratio should explain the choice of the measure, which is done only exceptionally (Singh 2006).

Abortion hospitalization data should preferably be extrapolated to yield estimates of the national unsafe abortion incidence. Unless appropriate population numbers or extrapolated unsafe abortion numbers are also provided, the general reader can easily misinterpret low hospitalization rates to mean that few unsafe abortions take place (Gebreselassie et al. 2004; Jewkes et al. 2005; Warakamin et al. 2004; Dias et al. 2000).

Abortion hospitalization data are best presented as ratios (of hospital-based abortions to hospital-based births) or rates (abortion admissions per 1,000 women of reproductive age, usually aged 15–44 in the hospital catchment area). Using the correct denominator is crucial. For example, if countrywide hospital abortion data cover public hospitals only, then the denominator for the ratio of hospitalized abortions to births should be the number of births occurring in public hospitals only, not all births in the country (public and private hospitals as well as home births). Alternatively, the data could be weighted by the distribution of births by public vs. private hospitals, which may be available from a country's Demographic and Health Survey, and further extrapolated to a national incidence. Of course, to maintain credibility, researchers who present national estimates of the number of unsafe abortions should fully explain how those estimates were calculated (Brookman-Amissah and Moyo 2004).

7. Age of the woman at the time of the abortion

Surveys often collect one piece of information that frequently remains unreported but is important for abortion research—the age of the woman at the time of her abortion. While knowing the woman's age is irrelevant to estimating recent abortion incidence, it is important for monitoring trends over time in the ages of women who seek unsafe abortion and in their reasons for doing so. Knowing the woman's age at the time of her abortion also provides valuable insight into how consequences may vary by age: For example, unsafe abortions among adolescents typically carry a much higher health risk than those among physically more mature women.

Women's average number of reproductive years—derived from the distribution of the women's *current* ages—and the average number of abortions can be used to convert lifetime abortion data into an annual average rate of abortion (Vignikin and Adjiwanou 2004), although rates calculated this way tend to underestimate current rates when abortion incidence is increasing. Once the measure is cumulated over all ages, it provides an estimate of the total abortion rate, which indicates the average number of abortions a woman is likely to have by the end of her reproductive lifetime, assuming that current age-specific abortion rates continue.

Scarcity of Data and Outdated Data

8. Lack of up-to-date data and estimates

Population-based surveys obtain different measures—for example, abortion prevalence or women's lifetime abortion experience, and may cover the past year only or the past three or five years. Clearly, to estimate current abortion incidence, researchers are encouraged to use the most recent data possible (within the past 1–5 years), data permitting.

Data for estimation purposes should be as recent as possible and definitely not date from before a major change in the overall reproductive health climate (i.e., in the abortion law or access to services). Furthermore, there is a need for ongoing, constantly updated research: For example, for the 2003 WHO estimates, incidence was estimated by projecting data from the last 10 years for the vast majority of women and abortions (see Table 1 at end of chapter); nevertheless, for approximately 10%, data were older. This illustrates the need for ongoing research. For example for many former Soviet republics, reports of women increasingly relying on abortion outside the formal system to save money or receive higher quality care has not stimulated any recent data collection, probably resulting in underestimation of incidence. Ongoing data collection efforts are important to generate trends in abortion over time and obtain parameters to project estimates. In general, better data are available now than were in the past, and more countries are covered. However, new data collection efforts must begin soon or future national and global estimates may be compromised.

9. Lack of data in some countries

For several countries, the magnitude of unsafe abortion is simply unknown or only limited subnational data are available; new research that yields good incidence data for these countries is needed to fill an important information gap, provide a baseline for monitoring and create the evidence base for advocacy. When such information is missing, estimation at the global level will necessarily depend on data from other countries with similar indicators or depend on a regional average (Table 1).

Good input data were available for the vast majority of women and births (see Table 1). However, many estimates depended on subnational data: For 34 countries, mostly smaller nations and those concentrated in Oceania, the Caribbean and the Middle East (Western Asia), no data could be identified. Filling this information gap poses a major research challenge.

Our global estimates are necessarily approximate and for countries that lack data, unsafe abortion is likely underestimated, which may explain some of the low rates and ratios in certain subregions (e.g., Western Asia).

We could not identify any usable estimate or data for 14 countries that have more than 50,000 live births annually. Furthermore, no data were available for several small countries in Africa (5), Asia (2), Latin America and the Caribbean (5), the Middle East (2), and for five island-states in Oceania.

Ambiguous Terminology

10. Need for clear language and precise terms

To improve unsafe abortion estimation techniques, researchers need to properly identify the exact type of abortion their data cover. For example, unless researchers specify otherwise, "abortion" data are assumed to cover both induced and spontaneous abortions. In that case, a proportion will have to be deducted to account for spontaneous abortions. Of course, a lack of clarity—i.e., whether spontaneous abortions are or are not included—would affect the accuracy of the incidence estimates.

In countries where abortion is severely legally restricted, researchers may be reluctant to use precise language; thus the unmodified term "abortion" likely refers to an induced abortion that is performed illegally. However, use of the term "abortion" alone diminishes the value of induced abortions estimates (Kambarami et al. 2000; Carvalho et al. 1996; Rattanavong et al. 2000). Authors should therefore, whenever possible, avoid referring only to "abortions" and instead specify whether the data refer to "induced abortions," "induced and spontaneous abortions" or find some other way of specifying the type of abortions that are included in their data.

Induced abortions are especially likely to be undercounted when detailed hospital studies count only women who *admit* to having had an *illegal* abortion or who present with obvious trauma to their reproductive organs; these women are often referred to as "certain" induced abortion cases. Wherever possible, such research should also account for women who are less willing to acknowledge having had an induced abortion or whose complications are less severe.

Conclusion

National estimates of the incidence of unsafe abortion are important for many reasons, including planning and implementing reproductive health programs and highlighting the severity of the public health problem caused by unsafe abortion. Estimates provide a tool for advocacy; the evidence base for improving contraceptive use and access to abortion services to the fullest extent allowable by law; and a rationale for changing the law (*de jure*) and its application (*de facto*).

Many public health issues remain unmeasured by country-specific data, and unsafe abortion is no exception. Its incidence has to be estimated using indirect techniques. Global incidence estimates that rely on published national estimates and available subnational data are only as good as their parts. We encourage researchers who study induced abortion to make realistic (that is, appropriately adjusted) national incidence estimates from new or already available data, or embark on specific studies to obtain the complementary information needed to calculate those adjustments. The ultimate goal is to have more national-level estimates of unsafe abortion and thus a more accurate knowledge base on which to design and implement solutions to the problem.

We hope our 10-point discussion will widen the use of existing data sources and further interest in less-known aspects of incidence research. Sources of data on unsafe abortion remain untapped in many countries and the potential for improving the estimation of unsafe abortion is immense. Some issues of key importance include measuring the level of underreporting in surveys, studying the implications of applying multipliers to hospital data, and developing new techniques to extrapolate subnational data to country-level estimates. We encourage reporting appropriate population data (to calculate rates and ratios) and presenting data on women's ages at the time of their abortions, even though data by age are not central to incidence studies.

Currently, there may be more data available on abortion incidence than ever before, and it is important to not lose momentum. Continued research is essential to expand the number of countries with usable data; gather the most up-to-date data; and extend data coverage to the national level. Ultimately, donors, international agencies and national family health organizations need to underwrite comprehensive and coordinated data collection efforts to estimate the incidence of unsafe abortion at the national level.

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TABLE 1. Percentage distribution of births, women and unsafe abortions used to estimate incidence for 2003, by time period of available data and source of data

Data availability (time period and source)	% of all births (N=132,724*)	% of all women aged 15–44 (N=1,454,484*)	% of all unsafe abortions (N=19,700*)
Time period of data			
Countries with no evidence of unsafe abortion	24	38	0
Countries where data are available for:			
2000 or later	39	33	57
1995–1999	23	18	29
<1995	10	8	12
No data available, so estimate from other country or regional average used	4	2	3
Total	100	100	100
Source of data			
Countries with no evidence of unsafe abortion	24	38	0
Countries with available data from:			
National community study, hospital data or national estimate	57	48	79
Subnational community study or hospital data	16	12	18
No data available, so estimate from other country or regional average used	4	2	3
Total	100	100	100

* In 000s.