GUTTMACHER INSTITUTE

EL COLEGIO DE MÉXICO

Unintended Pregnancy And Induced Abortion In Mexico

CAUSES AND CONSEQUENCES

Suggested citation: Juárez F et al., *Unintended Pregnancy and Induced Abortion in Mexico: Causes and Consequences,* New York: Guttmacher Institute, 2013.

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English translation of *Embarazo no planeado y aborto inducido en México: causas y consecuencias,* ISBN: 978-1-934387-12-2.

Cover design: © Emerson, Wajdowicz Studios/NYC/www.designEWS.com
Cover photo: © Jean D'Avignon

Acknowledgments

This report was written by Fatima Juarez, El Colegio de México; Susheela Singh and Isaac Maddow-Zimet, both at the Guttmacher Institute; and Deirdre Wulf, independent consultant. Lisa Remez, independent consultant, edited the report. Kathleen Randall, Guttmacher Institute, supervised layout and production. The report was translated by Xavier González-Alonso.

The authors express their gratitude to the following current and former Guttmacher staff members for assisting at various stages of the report: Akinrinola Bankole, Patricia Donovan, Axel Mundigo, Elena Prada and Gustavo Suárez. They also wish to especially thank the following individuals who helped finalize the report: José Luis Palma, Investigación en Salud y Demografía (INSAD); Rafaella Schiavon, Ipas–Mexico; Regina Tamés, Grupo de Información en Reproducción Elegida (GIRE); and Claudia Díaz Olavarrieta, Population Council–Mexico.

In addition, the authors are grateful for the insightful comments of the following external reviewers: Prudencia Susana Cerón Mireles, Centro Nacional de Equidad de Género y Salud Reproductiva; Fernanda Díaz de León Ballesteros, GIRE; Vicente Díaz Sánchez, International Planned Parenthood Federation, Western Hemisphere Region; Sandra García, Population Council–Mexico; Silvia E. Giorguli Saucedo, El Colegio de México, Agnès Guillaume, Institut de Recherche pour le Développement, France; José Miguel Guzmán, United Nations Population Fund (UNFPA)–Central Office, New York; Edgar Kestler, Centro de Investigación Epidemiológica en Salud Reproductiva y Sexual, Guatemala; Andrzej Kulczycki, School of Public Health, University of Alabama, Birmingham; Diana Lara, Ibis Reproductive Health; Catherine Menkes, Centro Regional de Investigaciones Multidisciplinarias, Universidad Nacional Autónoma de México; Diego Palacios and Alfonso Sandoval, both at UNFPA–Mexico; José Luis Palma, INSAD; and Cristina Villarreal, Fundación Oriéntame, Colombia.

The authors are also grateful to Sandra García, Population Council–Mexico and Claudia Díaz Olavarrieta, Instituto Nacional de Salud Pública (affiliations at the time) for serving as co-researchers in the Health Professionals Survey (HPS) of 2007, which supplied essential data for the estimates presented here. In addition, the authors thank the 132 participating health professionals, medical and nonmedical, for their valuable knowledge of and opinions about induced abortion in the country. The authors are equally grateful to the 16 gynecologists with experience in postabortion care who shared their expertise on the impact of misoprostol on assigning CIE-10 diagnosis codes. Staff from the Dirección General de Información en Salud helped greatly, especially Luis Manuel Torres, who provided guidance on the quality and coding of hospital statistics, and Juan José González Vilchis, who supplied advice on managing the interactive feature of the Web site and answered questions about data quality. Finally, the authors would like to express their gratitude to El Colegio de México for their support of this project.

This report was made possible by the contributions of several donors, among them the Population Council–Mexico. The Guttmacher Institute also gratefully acknowledges the general support it receives from individuals and foundations—including major grants from The William and Flora Hewlett Foundation, The David and Lucile Packard Foundation and the Ford Foundation—which undergirds all of its work.

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Executive Summary

Examining the hidden and stigmatized practice of induced abortion is very hard to do. Throughout the Mexican Republic's 31 states, induced abortion is highly restricted. (The exception is the capital, the Federal District, which decriminalized first-trimester abortions in 2007.) This report presents estimates of induced abortion for 2009, by the country's 32 *entidades federativas* (or federative entities) and by the woman's age. The report also examines what causes women to resort to abortion in the first place—unintended pregnancy.

Progress has been made on many fronts

- As of 2009, a high proportion of Mexican women in union (formal and consensual) practice contraception—67% use a modern method and another 5% rely on a less effective, traditional method.

- Widespread use of contraceptives has been an essential factor underlying the country's rapid decline in fertility: Average family size, which has been falling steadily over the past two decades, is now nearly at replacement level of two children per woman.

- A breakthrough occurred in 2007 when the Federal District allowed legal interruptions of pregnancy (known by the Spanish acronym, ILE) in the first trimester. Thus, because of strict safety protocols instituted by the Ministry of Health of the Federal District, women who used the Federal District's abortion services had almost no risk of complications in the year roughly corresponding to our estimates.

Unintended pregnancy remains widespread

- Behind almost every induced abortion is an unintended pregnancy. As of 2009, more than half—55%—of all pregnancies in Mexico are estimated to have been unintended.

- Categorizing the country's 32 federative entities into six regions by level of development shows that Mexico fits established patterns where levels of unintended pregnancy are highest in the most developed and urbanized areas: An estimated 70% of pregnancies are unintended in the most-developed region (Federal District; Region 1), compared with 45% in the least-developed region (Chiapas, Guerrero and Oaxaca; Region 6).

- Each year, 71 unintended pregnancies occur per 1,000 women of reproductive age, a rate that is virtually the same as that estimated for all of Latin America and the Caribbean (72 per 1,000 women).

Many unintended pregnancies end in induced abortion

- Legally restricting abortion does not prevent it from happening. More than half (54%) of all unintended pregnancies in Mexico are estimated to end in an induced abortion, despite it being legally restricted in 31 of the 32 federative entities.
- This translates to more than one million (1,026,000) induced abortions taking place each year, for a rate of 38 per 1,000 women aged 15–44. The abortion rate increases uniformly as the level of development rises, from 26 procedures per 1,000 women in Region 6 (the least-developed region) to 54 per 1,000 in Region 1 (the most-developed region).
- As of 2009, Mexico's rate of abortion had increased by more than half since 1990, when it was 25 per 1,000. This increase over time in the *rate* (which is not affected by population growth) suggests that women are having a harder time now avoiding unintended pregnancy and are also more motivated to avoid having unplanned births.
- Abortion estimates by age (the first time such estimates have been made for Mexico) show an expected pattern whereby the rate peaks among women in their early 20s (at 55 per 1,000 20–24-year-olds), and then gradually declines with age. Unfortunately, adolescents aged 15–19 share the second-highest rate with women aged 25–29 (44 abortions per 1,000 women).
- By federative entity, the Federal District, as the most developed part of the country, unsurprisingly has one of the highest abortion rates (54 per 1,000). The Northern state of Nuevo León, on the other hand, has the lowest (17 per 1,000), possibly reflecting both a very low unmet need for contraception and travel across the U.S. border for safe, legal procedures.

Clandestine abortions endanger women's health and use up scarce health resources

- An induced abortion performed outside the law is often unsafe. Government hospital data clearly show the toll on women's health and facilities: In 2009, some 159,000 women nationally were treated for complications of an induced abortion in public-sector hospitals alone.

- More than one-third of all women having an induced abortion (36%) are estimated to develop complications that need medical treatment. The proportion of abortions accompanied by complications is highest—at 45%—among those obtained by poor rural women.
- Unfortunately, one-quarter of all Mexican women experiencing abortion complications do not obtain the treatment they need, making them especially likely to suffer debilitating health consequences.

The risk of complications is tied to how an abortion is performed and by whom

- An estimated one in every three abortions is induced through the drug misoprostol. That some 39% of these procedures are thought to lead to complications requiring treatment likely reflects providers' and women's inadequate knowledge and use of misoprostol.
- For abortions not involving misoprostol, the safest ones are the surgical procedures performed by doctors (accounting for 23% of all abortions); the least safe are those that are self-induced with a method other than misoprostol (16% of all abortions, but 24% of those among poor rural women).

Action is needed to improve women's health and lives

The recent rise in the rate of abortion points to the need for concerted efforts to help Mexican women better prevent the unintended pregnancies that lead to abortions. Below are some suggestions to help alleviate unsafe abortion's burden on women and the medical system. We also propose some recommendations for improving the provision of legal procedures and for reducing unintended pregnancy.

Strengthen contraceptive services. Women need better information about correct and consistent use of contraception. To prevent unintended pregnancies and abortions, the 12% of women in union with an unmet need for contraception plus the 5% using traditional methods should start using a highly effective method that fits their personal preferences and situation. Tailored interventions are needed to help the group at highest risk for unwanted pregnancy—young women aged 15–24, in union and never married (both those with past sexual experience and currently sexually active). A high proportion

of these women are not using a contraceptive method despite not wanting to become pregnant soon, which signals the need for more information about effective contraception and better services. An improved understanding of temporary methods and better access to them would help these young women prevent unintended pregnancy and thus enable them to more precisely plan and time their births.

Improve postabortion services. The coverage of postabortion services needs to be extended and their quality improved. Providers need more accurate information about caring for women who have used misoprostol; they also need training in treating complications with manual vacuum aspiration, a technique far less invasive and less resource-dependent than the widely used dilation and curettage. Contraceptive services, including counseling, need to be made a standard feature to prevent repeat abortion.

Improve provision of legal abortions. Public education campaigns are essential to spread awareness of each federative entity's conditions for legal abortion. Mechanisms to assure that women can actually get the legal abortions that they qualify for are also vital, along with the political will to put them into place. All 32 entity-level ministries of health, which are directly responsible for providing and funding care, should take the opportunity to use these newly available data to guide improvements in contraceptive and postabortion care in their respective jurisdictions.

Chapter 1: The uncomfortable reality of induced abortion

Throughout the world, women cope with pregnancies that come too soon or are not wanted at all. In each country, the specific cultural, legal, economic and health-services context influences women's ability to avoid unintended pregnancy and mediates their response if they experience one. Mexico is no exception. Despite induced abortion being highly legally restricted in all 31 states (but not in the Federal District), hundreds of thousands of Mexican women resolve unintended pregnancies through abortions each year.

Because the Federal District is the sole area where pregnancy terminations are legal under broad criteria, almost all terminations occurring elsewhere in the country are practiced clandestinely, and many are carried out in unhygienic settings using unsafe methods. Unsafe abortion can have serious consequences for a woman's health and a strong adverse impact on her household and community. Abortions that are performed with dangerous methods or by unskilled practitioners often lead to health complications, whose treatment uses up scarce hospital resources.[1]

Over the past 15 years, the growing use of a relatively inexpensive and accessible pill that causes abortion, misoprostol, has substantially changed the practice of induced abortion in Mexico. Misoprostol was originally developed to prevent gastric ulcers, but its off-label use for ending pregnancy is widely known to be effective.[2–4] However, the pill's efficacy at inducing abortion depends on it being used correctly—that is, that it be taken at the appropriate time in pregnancy, at the correct dosage and with accurate instructions. Unfortunately, such correct practices cannot be assured in Mexico, where misoprostol is usually taken clandestinely.

Although we know the broad outlines of the practice of induced abortion in Mexico, obtaining specific information about its frequency and the conditions under which it occurs is challenging. Most Mexican women who have a clandestine abortion are reluctant to admit to having had one—or tell anyone if they develop dangerous health consequences. The subject of abortion is such a polarizing issue in the country that many public officials are unwilling to face the issue, and deny or ignore the harmful impact that unsafe abortion is having on women, their families and the health system.

Yet to enact policies aimed at lessening the harm caused by unsafe abortion, politicians and health officials need to know the extent and causes of the problem. Because abortion is such a deliberately hidden activity, researchers who want to assess its extent must rely on indirect estimation techniques. This report presents the results of new research on abortion practices in Mexico. It also quantifies the consequences of unsafe abortion in terms of women's health and cases treated in the country's public health systems. The report updates the first national estimates of abortion incidence in the country, which date from 1990. Notably, it provides the first estimates by the woman's age for Mexico as a whole and for each of six regions, defined by level of development, and for each of the 32 federative entities (*entidades federativas* in Spanish, which refer collectively to the Federal District and the 31 states). Finally, it examines what is behind the vast majority of abortions—unintended pregnancy—and looks closely at why women become pregnant without wanting to be.

Mexico has made important gains in reproductive health

In most parts of the world, women and couples achieved substantial progress over the past few decades in their ability to reach their childbearing goals. Mexico's impressive gains in this area were made possible by the introduction of the General Population Law in 1974.[5] The law established that the government must offer family planning services, including the provision of contraceptives, at no cost at public health institutions and also created the National Family Planning Program to guide implementation of the law. In addition, the constitution was amended to give all Mexicans the right to "decide in a free, responsible and informed manner on the number and spacing of their children."[6]

From the mid 1970s through the 1980s, when the above changes led to large increases in contraceptive use,[7,8] the government also expanded and improved many aspects of the public health system.[9,10] Access to family planning services improved in rural and less-developed parts of the country, which reduced longstanding inequalities in the provision and use of these services.[11] In 1995, Mexico began devolving health care spending to local governments,[12] a reform that has been successful on many levels. (However, decentralization of family planning and contraceptive services has not had the desired positive effect, because budgeting decisions are now made by individual entity governments, which can insufficiently fund family planning services or, indeed, choose to not fund them at all.[9,10])

The tangible result is improvement in a range of reproductive health outcomes: Roughly seven out of 10 married*[A] Mexican women of childbearing age currently use a contraceptive method—a level close to that found in more developed and more industrialized countries.[13] This more than doubling in contraceptive use since 1976[11,14]

[A] *In this report, the term "married" means both formal and consensual unions.

has enabled many women to fulfill their growing desires for ever-smaller families. Average family size declined from about six children in 1973–1975[15] to just over two by 2006–2008.[16] Declines in fertility mean fewer women are exposed to the health risks associated with childbirth. Also, reductions in maternal deaths over the past two decades have been substantial: The maternal mortality ratio fell from 89 maternal deaths per 100,000 live births in 1990[17] to 62 per 100,000 in 2009.[18,19]

Despite these impressive achievements, large disparities by population subgroups remain. The contraceptive services, counseling and supplies needed to regulate the timing and number of births are not always available in the country's poorer, more rural regions.[9] Moreover, even in nonpoor areas, the decentralization of health care services mentioned earlier means that funding for family planning services is decided by local governments, and thus may not be adequate to the needs of the population.[8,9]

Small families are now the norm

The trend toward wanting and having smaller families started in the mid-1960s among more educated and urban women and soon extended throughout all levels of society.[20,21] In Mexico, as throughout the world, improvements in women's education,[22] coupled with a growing female labor-force participation, created a change in attitudes and aspirations for a life not confined to motherhood and childrearing.[23–25] Indeed, working women are likely motivated to have smaller families to be able to invest more time in their children's education.

As of 2009, the country had almost reached replacement-level fertility,[16] meaning that the population will soon stop growing each year. Access to free contraception

through a strong and committed national family planning program undoubtedly helped speed Mexico's transition to smaller families. However, recent evidence suggests that improved access alone is not enough to enable all women who do not want any more children or who do not want a child soon to achieve their goal.[8] The following report examines in-depth the reasons why this may be so and the extent to which women with an unintended pregnancy resort to induced abortion.

Mexico is a country of wide socioeconomic disparities

In any setting, reproductive behavior is strongly influenced by economic and social factors. With a population of almost 112 million people,[26] much of the country has benefitted from economic and social development, but large areas have not. To assess the influence of context factors on Mexican women's ability to plan their families, our analysis groups the country into six regions that differ widely by the proportion living in social and economic marginalization.[27]

Mexico does not group the 32 federative entities into larger official divisions. Our categorization scheme distributes them into six regions according to a marginalization index that was developed by the Consejo Nacional de Población (CONAPO; see data box).[28] For expediency, we refer to these groups as "regions," even though the federative entities that comprise them are not contiguous. The marginalization index incorporates 10 components that reflect the extent to which households in the 32 entities have been excluded from the benefits of modernization. (The index includes variables such as the quality and type of household amenities, level of education and income.) The regions are numbered in descending order of marginalization, whereby Region 6 (the three states of

Chiapas, Guerrero and Oaxaca) is the most marginalized, and Region 1 (Federal District), the least marginalized.

The country's disparities are apparent in the gulf across regions in the proportions of the working population living in poverty, which range from 33% in Region 1 to 72% in Region 6. Measures of educational attainment and access to quality health care are equally telling: As of 2009, just 42% of women in Region 1 but 69% in Region 6 had fewer than 10 years of schooling; and the proportions of women with poor access to quality health care were 26% in Region 1 and 59% in Region 6. (See data sources box for a full explanation of this access to quality health care measure.) Further, Regions 5 and 6 have the highest proportions of women of childbearing age who live in rural areas (38–44%, compared with 20% for the country as a whole). In general, the states and regions that are better off socioeconomically tend to be in the north and center of the country, and those that are worse off are largely concentrated in the east and south-east (Figure 1.1)

Guide to this report

The key audiences for the following report include government agencies, nongovernmental organizations, religious groups, the medical and legal professions, rights advocates and the public at large. Its wider goal is to give policymakers and program planners the tools to develop more responsive health services, social programs and strategies to reduce unintended pregnancy and lessen the burden created by unsafe abortion.

The next chapter, Chapter 2, discusses the conditions in which Mexican women end unintended pregnancies. It also describes the Federal District's safe and legal

abortions (known by the Spanish acronym, ILE, which stands for *interrupciones legales del embarazo,* or legal interruptions of pregnancy). Chapter 3 provides details on the health consequences of unsafe abortion in Mexico. Chapter 4 reports on the trend in the national abortion rate between 1990 and 2009 and provides new estimates of rates by federative entity, development region and age-group for 2009. It also examines overall and regional levels of unintended pregnancy—the major driver of induced abortion. These new estimates come from several sources and surveys (see data sources box).

To shed further light on why unintended pregnancy may be so common in Mexico, Chapter 5 examines the factors that raise women's likelihood of becoming pregnant when they do not want to be and identifies the subgroups of women that are at higher risk. Chapter 6 highlights the implications of the study's major findings and suggests policy and program approaches to reduce unintended pregnancy and lessen the economic and social cost of the unsafe abortions that often follow.

Box 1: Data sources

This report draws on several data sources to estimate the incidence of abortion and the consequences of unsafe procedures in Mexico. It also estimates the incidence of unintended pregnancy and examines its context. To avoid the data-quality issues that would result from gathering information on a highly stigmatized subject directly from women, we used an indirect estimation methodology, the Abortion Incidence Complications Method (AICM), whose application in Mexico first relied on the following two sources.

• **Health Professionals Survey (HPS).** This survey, fielded in 2007, collected information from 132 key informants with extensive knowledge of the conditions of clandestine abortion in Mexico. Interviews were conducted using a structured questionnaire that covered a range of topics. Respondents were asked to estimate what proportion of all abortions are induced with misoprostol, obtained from any provider. They were then asked to estimate the proportions of the remaining abortions that would be offered by four provider types (doctors; nurses or trained midwives; pharmacy workers; and traditional healers or birth attendants) and be induced by the woman herself. Further questions requested estimates of the proportion of women who would experience complications requiring medical care for the same six categories and the likelihood that these women would obtain treatment in hospitals, also for the same six categories.

The HPS interviews took place in the Federal District (development Region 1) and in five states in each of the other five development regions (Baja California in Region 2, Guanajuato in Region 3, Yucatán in Region 4, Veracruz in Region 5 and Chiapas in Region 6). Just under two-thirds of the HPS participants were general

physicians or gynecologists, and the rest were experts in public or reproductive health representing a range of nonmedical professions (e.g., social work, research, policy making, health advocacy and public administration).

• **National System of Health Information of the Ministry of Health.** Data for 2009 on the number of women treated for abortion complications in Mexican government hospitals were obtained from three sources of data: hospital discharge data on inpatients (in all of the nation's public health subsystems),*[B1] hospital data on outpatient care[2] (also available for all health subsystems) and hospital data on emergency room services (available only for the largest subsystem, the Secretaría de Salud [SSA], or Ministry of Health).[3] These three data sources are mutually exclusive. The total count of women treated for abortion complications in government facilities in 2009 required some adjustment.[4] For the most part, these data were available by federative entity and by age of the woman at the time she was treated; in those cases when certain data were unavailable, estimates were made based on the existing data.

• **Other primary data sources.** Successive national demographic surveys, Encuestas Nacionales de la Dinámica Demográfica (ENADID) for 1997, 2006 and 2009, provide information on women's demographic and reproductive health characteristics such as their age, marital status, contraceptive use, sexual activity and health services affiliation, among others. The 1997 ENADID was fielded by the Instituto Nacional de Estadística, Geografia e Informática (INEGI); the 2006 survey, by the Instituto Nacional de Salud Pública, and the Consejo Nacional de Población (CONAPO); and the 2009

[B] *These main components of the Mexican heath system are Secretaría de Salud (SSA, which also includes the ministries of health for all 32 federative entities), Instituto Mexicano del Seguro Social (IMSS), Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado (ISSSTE), Petróleos Mexicanos (PEMEX), Secretaría de la Defensa Nacional (SEDENA), Secretaría de Marina (SEMAR) and IMSS Oportunidades.

survey, by INEGI and CONAPO. The surveys used random probability samples that were designed to be representative both nationally and at the level of federative entity. The surveys interviewed 88,022 women aged 15–54 in 1997, 41,133 in 2006 and 100,515 in 2009. Our estimates refer to women of reproductive, defined here as aged 15–49.

The estimates of unmet for contraception come from the 1997 and 2009 ENADIDs. We used the same calculation procedure for this measure as CONAPO used in 1997 and before (i.e., since the beginning of the 1990s). Recently, CONAPO changed the way it calculates unmet need.[5] However, we continue to use the earlier method for the data collected in 2009,[6] both to maintain comparability over time and because the earlier definition of unmet need is more in line with that used in the widely known Demographic and Health Survey (DHS) program. Thus, our calculations of unmet need for 2009 differ from those published by CONAPO. For total fertility rates, we used the CONAPO estimates and projections that were available at the time of analysis. Because those rates have recently been updated, the values we present differ slightly from those published by CONAPO.

The data needed to calculate abortion rates—i.e., the population of women of reproductive age and the number of live births in 2009—are based on the most recent estimates that were available from CONAPO at the time of analysis.[7,8] Estimates of pregnancy outcomes (births or abortions) relied on the above CONAPO sources and estimates of induced abortion from the AICM.

The two dimensions of our index of access to quality health care—women's level of education and their specific health care service—come from the 2009 ENADID. We use receipt of at least 10 years of schooling as a proxy for women's self-agency and

ability to negotiate the health care system. Mexico's current health care structure offers care that ranges widely in quality. Thus, our definition of access to *quality* health care divides the population into two non-overlapping groups. The first comprises women who can use quality services—those who have private insurance (self-pay or employer-provided) and those who are enrolled in the national public social security subsystems (i.e., IMSS, ISSSTE, PEMEX, SEDENA and SEDEMAR). The second group encompasses all other women, the majority of whom receive care through state-level health departments or through the subsystem that covers the poor and uninsured (Secretaría de Salud [Ministry of Health], IMSS-Oportunidades and Seguro Popular).

According to our index, women who have at least 10 years of schooling and who have coverage for quality health services are classified as having *good* access to quality care; those with fewer than 10 years and who lack coverage for quality health services or have no coverage have *poor* access to quality care; and women who are positive on one dichotomous dimension (but not both) are considered to have *medium* access to quality care.

We created six regions—not contiguous geographic areas but called regions out of convenience—by grouping federative entities according to their level of development. These levels come from CONAPO's 2005 index of marginalization, which was the most recent index available at the time of the analysis. The regions are numbered in ascending order of marginalization, and go from the most developed Region 1 (Federal District) to the least developed Region 6 (Chiapas, Guerrero and Oaxaca).[9] The index incorporates the following measures of socioeconomic status to group the 32 federative entities: percentage of the population aged 15 or older that is illiterate; percentage of the

population aged 15 or older that has not completed primary school; percentages of inhabitants living in households without plumbing or an in-door toilet, without electricity, without drinkable water, with some level of crowdedness and with an earthen floor; percentage of the population living in localities with fewer than 5,000 inhabitants; and percentage of the working population paid less than two times the minimum salary.

Figure 1.1

Source Reference 28.

Chapter 2: The Practice of Abortion in Mexico

Because abortion is highly legally restricted throughout much of the country (Appendix Table 1), most women who interrupt a pregnancy outside of the Federal District do so clandestinely, where the safety of the procedure cannot be assured. Among the greatest obstacles to determining the true level of abortion is the stigma attached to the procedure and its illegality. This means that women who are questioned directly about having had an abortion are highly likely to underreport one, so reliable data on its incidence are very hard to come by.[29] Thus, the very little we know about abortion in Mexico comes from small-scale ethnographic or qualitative studies.[30,31]

The overall picture of clandestine abortion practice in Mexico likely started to change with the introduction of a pill called misoprostol about a decade ago. Reliance on this synthetic prostaglandin analog, whose brand name is Cytotec, to bring on a miscarriage steadily increased since then.[32–34] Misoprostol is one of the two leading substances now generally used in medication abortions (the second being mifepristone, which was recently registered in the country by the regulatory agency, Comisión Federal para Protección Contra Riesgos Sanitarios, known as COFREPRIS).[35]

Misoprostol alone, which is relatively inexpensive in Mexican pharmacies,[34,36] can be effective in terminating early pregnancy when used correctly. Its abortifacient properties first became well known in Brazil in the mid-1980s,[37,38] and then spread to other parts of Latin America, particularly Colombia[39] and Mexico.[27,40] As a result, the older, often highly risky methods used to end pregnancies probably have largely given way to strategies that may still be clandestine, but are less dangerous than before.

The survey used to estimate abortion incidence, the Health Professionals Survey (HPS), provides information that partially fills the gap in knowledge about the current practice of abortion. (For a full description of the HPS, see data box; for a discussion of the estimation technique, see methodology box). Below we describe the conditions of abortion gleaned by that survey. The information below refers to *all* induced abortions, which include those that are clandestine and unsafe, and also those that are clandestine and likely to be medically safe. (Even though every federative entity has some legal grounds under which a woman would qualify for a legal abortion, the reality is that a negligible number of such legal procedures are actually performed in the 31 states.) The special case of the Federal District is discussed later.

Misoprostol use is common, especially in urban areas

Overall, 29% of abortions in Mexico are believed to involve misoprostol, obtained from any provider (Figure 2.1).[33] Women likely obtain the pills from a variety of sources, but primarily from pharmacy workers, doctors and family members or friends. Further, health professionals estimate that the other 71% of abortions that do not involve misoprostol are induced through a range of methods and are provided by traditional healers or birth attendants (14%), pharmacy workers (11%), nurses and trained midwives (7%) and doctors (23%). Abortions induced by women themselves using methods other than misoprostol make up the remaining 16%.[33] These estimates illustrate a striking new pattern with the introduction of misoprostol: A solid majority of the clandestine abortions in Mexico today—the 59% that are misoprostol-induced abortions plus the nonmisoprostol procedures performed by doctors and nurses—are believed to be safer

than the abortions that were induced through the more invasive and dangerous methods that predominated in the past.

Even with the increasing availability of misoprostol, however, many Mexican women, especially in rural areas, likely are unaware of its existence or of how to obtain it, or cannot afford it. Moreover, despite its effectiveness when correctly prescribed and used, many providers, including pharmacy workers, do not know the appropriate instructions to give women, especially the all-important correct dose,[33,36,41] and how to respond to the prime symptom of its mechanism of action—heavy bleeding.[42]

Because the types of abortion methods and providers women use are closely linked to their socioeconomic status, the HPS respondents were asked to provide estimates for four groups of very different women—nonpoor urban women, nonpoor rural women, poor urban women and poor rural women. The abortions of urban women are much more likely than those of rural women to involve the use of misoprostol (31–37% vs. 9–17%; Figure 2.1). Moreover, the proportions of abortions that are likely surgical procedures performed by doctors follow the expected pattern of rising uniformly along the poverty-residence spectrum: They go from just 6% of the abortions among poor rural women to 44% of those obtained by nonpoor urban women. The patterns for nonmisoprostol abortions other than doctor-provided ones are less clear-cut. It is important to mention, however, that the riskiest abortions—nonmisoprostol abortions that are self-induced or performed by traditional providers—make up nearly two-thirds of all abortions obtained by poor rural women.

In the Federal District, legal induced abortions are safe

Legal, first-trimester abortions carried out in the Federal District present a striking contrast, as these are safe procedures performed in medical facilities according to the medical guidelines issued by the Ministry of Health of the Federal District.[43] In April of 2007, the Federal District's legislature effectively decriminalized all induced abortions, or *interrupciones legales del embarazo (ILEs),* in the first 12 weeks of pregnancy (see law box).*[C44] The following month, the Federal District's legislative body issued its general guidelines for the program, which stipulate that ILEs be performed by a medical doctor with the woman's informed consent in a designated facility, and that an ultrasound verify the prescribed gestational limit.[45,46] These general guidelines also establish the prerequisites of objective counseling about the procedure beforehand and about contraceptive options afterward, to assure that women have the means to avoid future unintended pregnancies.

In the Federal District's public-sector facilities, ILEs are available free of charge to residents and for a small fee to women from the 31 Mexican states. In private-sector facilities in the Federal District, women must pay out of pocket.[46] There is no reporting requirement for private facilities, so the numbers of legal procedures carried out in the private health sector are largely unknown. However, given the common truth that affluent women are always able to afford safe abortions, it would hardly be surprising that a

[C] *Existing Federal District law that regulated procedures at later gestations remained unchanged. Terminations at up to 20 weeks are legal in the Federal District in the following situations: when a pregnancy results from rape, when continuing a pregnancy threatens the life or health of the woman, when the fetus or embryo has serious abnormalities incompatible with life and when a pregnancy results from nonconsensual artificial insemination. In addition, women whose inadvertent actions result in accidental miscarriages of pregnancies of up to 20 weeks are exempt from prosecution in the Federal District.

sizable proportion of the Federal District's legal procedures take place in private facilities.

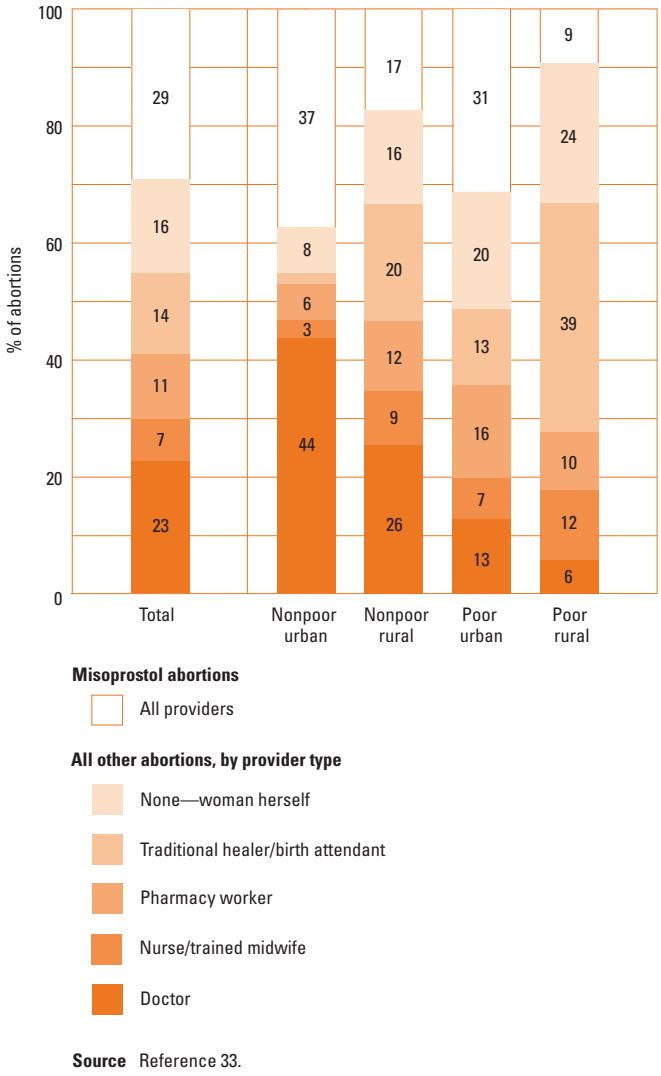
In 2008, the law's first full year of implementation, 13,404 women obtained a legal abortion in the Federal District's public facilities; this number rose to 16,945 in 2010 and 20,319 in 2011.[47,Table 7.4] For the year of our estimates, 2009, 16,475 ILEs were reported by public-sector facilities.[48,Table 7.5] Nearly 67% of these procedures were misoprostol abortions, 32% were done using manual vacuum aspiration (MVA) and just 1% through the more invasive method of dilation and curettage (D&C).[48, Table 7.5] In accordance with ILE guidelines about postprocedure contraceptive counseling, the majority who receive it leave with a highly effective method. Indeed, ILE program data show[46,49]—and independent studies confirm[50,51]—that women most commonly choose the highly effective IUD.

ILE program records provide some sense of the profile of women who resolved an unintended pregnancy through induced abortion in the first few years after legalization. It is worth noting that these refer to only those women who managed to overcome the stigma and early obstacles such as insufficient staff and conscientious objection[52] that likely deterred many others. According to program data roughly corresponding to the year of our estimates, 2009, ILE patients were predominantly in their 20s (60%) and Catholic (82%).[49] Just over half had never married (53%). Moreover, roughly equal proportions had less than a lower-secondary education, or had an incomplete or complete upper-secondary education (38% and 41%, respectively); better educated women who had attended school for at least 13 years (one or more years of

college) accounted for just 20% of legal abortion patients in government facilities that year.

It should be remembered that women seeking a legal abortion in the Federal District benefit from having a procedure that must meet strict medical guidelines that adhere to international norms.[43] Accordingly, just 0.5 of these procedures were associated with mild complications in 2009.[49] Unfortunately, women living outside the Federal District—but also women within it, for varied reasons—who resort to a clandestine induced abortion face far higher likelihoods of suffering debilitating complications, as the following chapter shows.

Figure 2.1 Misoprostol abortions are common in Mexico, especially in urban areas.



Source Reference 33.

Box 2: Abortion Laws in Mexico

The legal status of abortion is closely linked to its safety. Unfortunately, in countries with highly restrictive laws, women commonly turn to clandestine abortion. Since the safety of such unregulated procedures cannot be assured, women risk their health and social standing by resorting to a highly stigmatized and often unsafe practice. In Mexico, each federative entity is responsible for regulating abortion. Whereas first-trimester abortions are legal on any grounds in the Federal District, all 31 states legally restrict the procedure, with some variation in state-specific exceptions, as shown below.

Within the 31 states.

Currently, all 31 Mexican states permit abortion in pregnancies resulting from rape, and all but six allow the procedure if needed to save the woman's life (Appendix Table 1).[1] Some 13 states permit abortion in cases of grave fetal anomalies incompatible with life, and 12 allow it when continuation of the pregnancy poses a grave threat to the woman's health. Ten states permit abortion if the pregnancy resulted from artificial insemination that occurred without the woman's consent. Yucatán is unique in legally permitting abortion on economic grounds if a woman already has at least three children, criteria that were established in 1931.*[D]

[D] *However, in 2009, Yucatán's constitution was changed to protect life from conception. As the legal code has not changed, however, the impact of this constitutional amendment is unclear. (See GIRE, State legislation: Yucatán, <http://www.gire.org.mx/index.php?option=com_content&view=article&id=244%3Ayucatan&catid=49&Itemid=1154&lang=es>, accessed Mar. 23, 2013.)

Despite abortion being permitted on some grounds in all 31 states, very few women seek a legal abortion when they meet existing criteria. This situation likely derives from both the prevailing stigma against abortion and the absence of sufficient state-level administrative mechanisms that would enable women who qualify for a legal abortion to obtain one.

Federal District. Seven years before the 2007 reform, the Federal District first acted to give women access to the abortions that were legal according to the its penal code. In 2000, for example, the Federal District amended its penal code to extend grounds for legal interruptions of pregnancies to include those in which the health of the pregnant woman was jeopardized, those that resulted from artificial insemination without the woman's consent and those in which the fetus had severe abnormalities incompatible with life.[2] (Before 2000, the Federal District allowed abortions only in cases of rape and when carrying the pregnancy to term threatened the life of the pregnant woman.[3])

This 2000 reform, known as the Robles Law, improved the implementation of legal criteria by unambiguously assigning, for the first time, a single channel for officially approving legal abortions, here the Attorney General's Office of the Federal District.[3] The Robles law also specified that medical professionals inform women about the legal criteria. Further, in 2002, the Federal District's Ministry of Health released a memo to medical providers that established the overall organization of legal services, and also produced a manual for clinicians for performing safe procedures.[3] That same year, the District Attorney of the Federal District released guidelines for quickly processing requests for legal abortions of pregnancies resulting from rape, to avoid any delays that can threaten the health of the pregnant women.

Then, in April of 2007, the Federal District's legislature passed a landmark reform that permits abortion on any grounds during the first 12 weeks of pregnancy.[3] This law had a huge impact throughout the country. The Supreme Court of Mexico upheld the law's constitutionality in 2008 on the grounds that the Federal District had passed an appropriate health measure to protect women's rights to life and health.[4] Since then, the Ministry of Health of the Federal District has continued to make these legal services available in public hospitals as well as clinics, and an unknown number of private facilities also offer safe, legal procedures in the Federal District.[5]

In response to the 2007 decriminalization, however, 16 states*[E] took action, presumably to prevent similar legal change. Between 2008 and 2011, these states added constitutional clauses protecting the life of the fetus from conception.[6] These states did not, however, amend their penal codes. Thus, the coexistence of penal codes allowing abortion in some circumstances with a constitution defining life at conception has created a lot of legal confusion and uncertainty. Moreover, at least eight states*[F] have started similar legal initiatives to add constitutional clauses protecting the life of the fetus from conception which have not yet been finalized.[7]

[E] *Baja California, Chiapas, Colima, Durango, Guanajuato, Jalisco, Morelos, Nayarit, Oaxaca, Puebla, Querétaro, Quintana Roo, San Luis Potosí, Sonora, Tamaulipas and Yucatán.
[F] *Aguascalientes, Baja California Sur, Hidalgo, México, Sinaloa, Tabasco, Tlaxcala and Zacatecas.

Chapter 3: Consequences of Unsafe Abortion

Legal restrictions on abortion do not prevent it from happening but force the practice underground, where safety cannot be assured.[53] Worldwide, the most common complication is an incomplete abortion, the main symptom of which is excessive bleeding—a serious threat to a woman's health if not treated right away. Less common are the more severe complications, including infections, which are sometimes accompanied by septic shock and uterine perforation,[54] and thus remain potentially deadly outcomes of unsafe abortion. The same situation unfortunately applies in Mexico, since some 36% of abortions are estimated to lead to complications requiring medical care (Figure 3.1).[33] (In this report, the term abortion *complication**[G] refers to all adverse health problems needing professional attention that are caused by an induced abortion, from the least severe [incomplete abortion and heavy bleeding] to the most severe [sepsis and uterine perforation].)

This estimated proportion of abortions leading to complications rises uniformly along the poverty-residence spectrum, going from 26% for the abortions of nonpoor urban women to 45% for those obtained by poor rural women. Thus, the safety of a clandestine abortion is strongly related to a woman's ability to pay for one and to how easily she can gain access to trained providers. In Mexico, as is true the world over, women with economic means are always able to minimize their health risks by paying

[G] *Despite the term "complication" having a highly specific meaning in some medical diagnoses, we use the word to refer to all negative health consequences of an induced abortion. In Mexico, the majority of complications fall under the category of "incomplete abortion." Although these complications normally pose a relatively low risk, if left untreated, they can seriously theaten a woman's health and life. Undoubtedly, the severity of abortion complications has declined over time, since women no longer resort as often to highly invasive methods, such as inserting sharp objects into the uterus, which can cause uterine perforation and sepsis. In fact, these specific complications rarely occur today, and the average hospital stay for treatment of induced abortion complications has shortened from 1990 to 2006 (reference 32).

higher prices to obtain safer clandestine abortions. Providers probably charge what they assume the market can bear and what women in desperate circumstances are willing to pay. Two common patterns emerged from key informants' estimates of costs: the more skilled the provider, the higher the cost; and nonpoor women pay more to the same provider-type than do poor women.[33]

The cost estimates show how prohibitively expensive a safe clandestine abortion can be. For example, the typical cost of a legal, first-trimester abortion in a clinic in the United States (about $470 in 2008[55]) falls within the estimated range that a *poor* urban woman would pay for a clandestine abortion in 2007 provided by a doctor in a private clinic or office in Mexico (4,400–7,200 Mexican pesos, or US$404–660*[H]).[33] Since the minimum monthly wage in Mexico in 2007 was roughly 1,500 pesos[56] (US$132), paying for a safe surgical abortion would clearly cause severe financial hardship for poor women.

For non-physician providers, the HPS respondents' estimates of costs for *all* types of abortions, misoprostol abortions included, are lowest for poor rural women and highest for nonpoor urban women. Thus, depending on where women live, they spend 500 to 700 pesos (US$46–64) in a pharmacy; they pay traditional healers from 600 to 1,500 pesos (US$55–138) and nurses or trained midwives, from 600 to 2,000 pesos (US$55–184).[33] Even though we lack estimates from HPS respondents on what women likely paid for a misoprostol abortion, we know that a 28-pill bottle sold for roughly 1,500 pesos (US$140).[41] Therefore, the eight 200 mcg tablets generally considered sufficient to

[H] *Based on the Banco de México 2007 exchange rate of 10.90 Mexican pesos to the U.S. dollar. (Source: Banco de México, *Informe Anual 2008,* Mexico City: Banco de México, Table A 1, <http://www.banxico.org.mx/publicaciones-y-discursos/publicaciones/informes-periodicos/anual/%7BE2479C99-47CB-19B8-92A7-D011876E8FCA%7D.pdf>, accessed Mar. 16, 2013.)

induce an abortion[57] and which are sometimes sold individually,[41] would cost roughly 430 pesos (US$40).

Yet even when induced by misoprostol, a method known to be relatively safe and effective when used correctly,[58,59] many of these abortions result in complications. According to the HPS, an estimated 39% of misoprostol-induced abortions lead to complications requiring medical care (Figure 3.2). For nonmisoprostol abortions, 17% of procedures performed by doctors are estimated to result in complications, as are 30–32% of those provided by nurses or by pharmacy workers, and 43% of those performed by traditional healers or birth attendants. (Pharmacies in Mexico are believed to be the source of a wide array of abortifacient products in addition to misoprostol.[33]) Abortions induced by women themselves using a method other than misoprostol are likely the riskiest, as 58% are estimated to lead to complications requiring treatment.

The estimate that 39% of misoprostol-induced abortions apparently result in complications is unexpected, and somewhat higher than the comparable proportion estimated for Colombia in 2008—32%.[60] However, many Mexican women are likely not using the drug correctly, and even when they are, the very mechanism of action of misoprostol—heavy bleeding—is undoubtedly bringing women into hospitals. Indeed, evidence from Mexico indicates that some pharmacy workers instruct women buying misoprostol to see a doctor after taking it[36] or go to an emergency room or clinic when bleeding starts.[41] In addition, studies in Mexico show that many pharmacy workers who sell misoprostol do not know the correct dose to tell women.[34,36,41] Our survey of key informants confirmed that pharmacy workers (the most likely provider of misoprostol,

followed by doctors) usually fail to indicate the correct dose.[33] Furthermore, even if studies have not yet verified it, it is highly doubtful that pharmacy workers are aware of the importance of using misoprostol during the first nine weeks of gestation.[57]

Poor women are the least likely to receive treatment

When women develop complications from an unsafe abortion, they need to get treatment without delay. Unfortunately, not all Mexican women needing care obtain it. For example, they may live too far from a hospital or have no way of getting there, be too weak to make it to a hospital, lack the money to pay for care, prefer to not make their abortion attempt known or simply not know that they need care.

According to the HPS respondents, an estimated one-quarter of Mexican women who need care following an unsafe abortion do not obtain it, which leaves them vulnerable to long-term consequences. The proportions with complications needing treatment who forgo it span from one-tenth among nonpoor urban women with complications to almost one-half (45%) among poor rural women (Figure 3.3).[33] In probable reflection of the country's universal health care system, there is little difference in the likelihood of getting any care between poor urban and nonpoor rural women.

Among women who do receive care, HPS respondents estimated that three-fifths are treated in public hospitals and the remaining two-fifths in private hospitals (not shown). The vast majority of poor women who get hospital care receive it in a public-sector facility—nearly nine in 10 in both urban and rural areas,[33] which highlights the importance of government health systems in the provision of this essential component of reproductive health care.

Treatment of complications is a drain on the health system

The proportions presented above translate to some 159,000 Mexican women receiving care for complications from an unsafe abortion in public-sector hospitals alone in 2009 (Appendix Table 2);[27] this number means an annual public-sector hospitalization rate of nearly six (5.9) out of every 1,000 Mexican women aged 15–44. That year, 69% of all postabortion patients were treated as inpatients (i.e., they spent at least one night), 14% as outpatients and 17% were seen in an emergency room.[27] The slight increase from the rate of 5.4 treated induced abortion cases per 1,000 women in 1990 should not be considered to denote a real rise in treatment or decline in safety. Instead, the far greater percentage increase over time in the rate of induced abortions (52%) than in the rate of hospitalization for complications (9%) reflects many more abortions—which have become safer over time—taking place, along with improved access to care.

As of 2009, public-sector hospitalization rates for complications by region ranged from 4.8–5.1 cases per 1,000 women in the two least developed regions (5 and 6) to 6.7 per 1,000 in the most developed region (Region 1; Appendix Table 2). Regional differences in rates likely reflect not only differences in the level and safety of abortion, but also in access to and preferences for care. At the state level, Baja California Sur (Region 2) has the highest public-sector hospitalization rate (10.2 cases per 1,000 women) and Yucatán (Region 4) has the lowest (2.9 per 1,000; Appendix Table 3).

We can also consider the relationship estimated by the surveyed experts between the number of women treated in public hospitals for abortion complications and the total number of abortions occurring in the country. This relationship suggests that 16% of

Mexican women who had an induced abortion in 2009 were treated for complications in hospitals. The estimated proportion of all abortions that were treated for complications is lowest in Region 1 (the Federal District, at 12%) and highest in Regions 5 and 6 (at 18% and 20%, respectively). This clearly demonstrates that the number of abortion complications treated relative to all abortions is lowest in the Federal District. Moreover, the number of *treated* abortion complications in Region 1 likely approximates the total number of abortion complications occurring in the Federal District, given that women living in the capital have the broadest access to care in the country. Unfortunately, this is not the case in the less-developed regions of the country, where for every hospitalized case, many more cases of abortion complications go untreated.

Also in Region 1, the 2007 legalization of first-trimester abortion and the subsequent organized delivery of high-quality public services marked a major achievement for women's health. Our estimates cover a period very close to the timing of that legislation, and the transition to legality is a process that takes time. Thus, during that transition, high numbers of unsafe abortions can coexist with high numbers of legal procedures, a situation that has already been pointed out by other research.[61] So it is unsurprising that Region 1's 2009 hospitalization rate for abortion complications shows many women continuing to prefer to hide their abortion at that time, resorting to clandestine, and thus unregulated and often unsafe, procedures.

This persistent avoidance of openly seeking a legal abortion is likely tied to the strong stigma attached to abortion in Mexico,[62] which can differentially affect subgroups of women. Another highly stigmatized behavior—premarital sexual activity—may have been motivating single women, especially the very young, to hide their need to resolve an

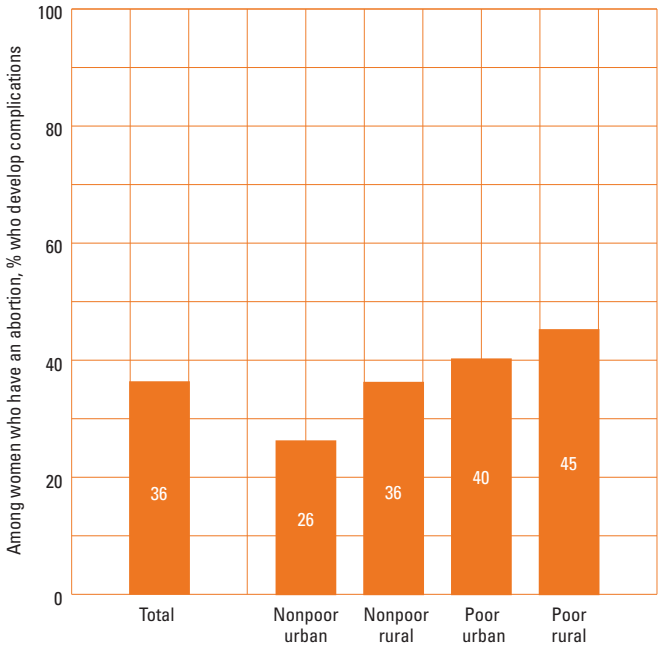
unintended pregnancy through a legal and safe abortion. Still other impediments to using the ILE program in its first two years may have included women's lack of knowledge about the change in the law and where legal services are available; an insufficient number of trained providers, especially outside the ILE program (which may have created long wait times); and the fact that some women would be in their second trimester of pregnancy and thus would not be eligible for a legal procedure.[52]

Whatever the reasons for why women would resort to an unsafe abortion in the Federal District in 2009, the high public-sector costs of treating complications from illegal procedures in the 31 states diverted already scarce health resources from preventing the unintended pregnancies that lead to abortions in the first place.[63] According to a cost-assessment conducted in 2005, the average cost of treating an incomplete abortion (with no complications) ranged from US$96–103 in a secondary-care hospital to US$100–192 in a tertiary-care hospital.[64] Treatment of less-common but serious complications, such as infection, sepsis and uterine perforation, adds significantly to the overall cost. For example, treating a patient for mild to moderate infection in a public hospital in 2005 cost an average of US$600, and treating a case of septic shock (which can result if complications go untreated) averaged US$2,140. By comparison, the annual cost in roughly the same time frame (2008) of providing a year of protection from unintended pregnancy for the typical user of a modern contraceptive method was US$8.91 in Latin America,[65] about 9% of the cost to treat an incomplete abortion and less than 0.5% of the cost of treating a septic abortion in Mexico.[66]

Of course, these are the costs for treatment borne by the government, not the expenses shouldered by the woman. In addition to her out-of-pocket costs to pay for an

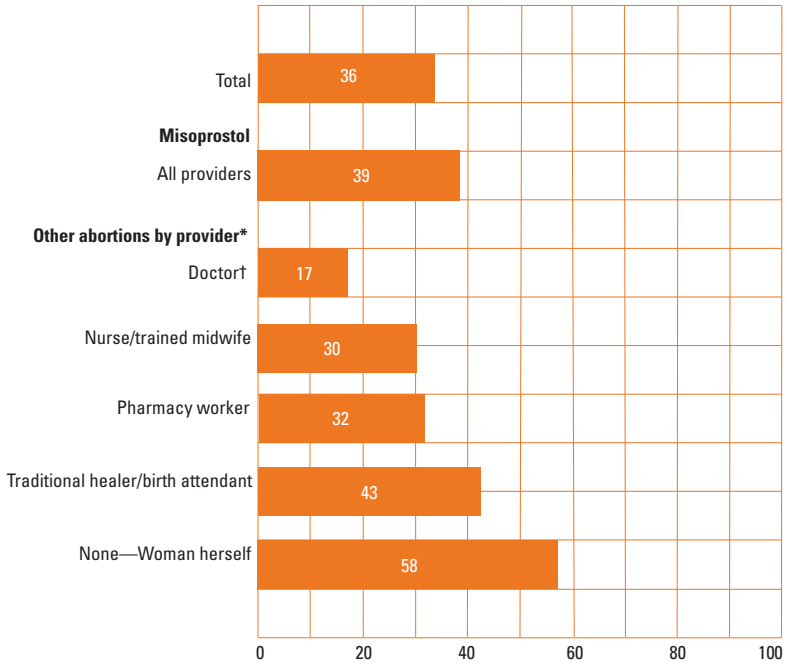
abortion method or provider, the ancillary costs at a minimum include travel, child care, days lost from work and prior payment for informal-sector treatment that proved unsuccessful.

Figure 3.1 The estimated risk of developing complications from unsafe abortion is highest among poor rural women.



Source Reference 33.

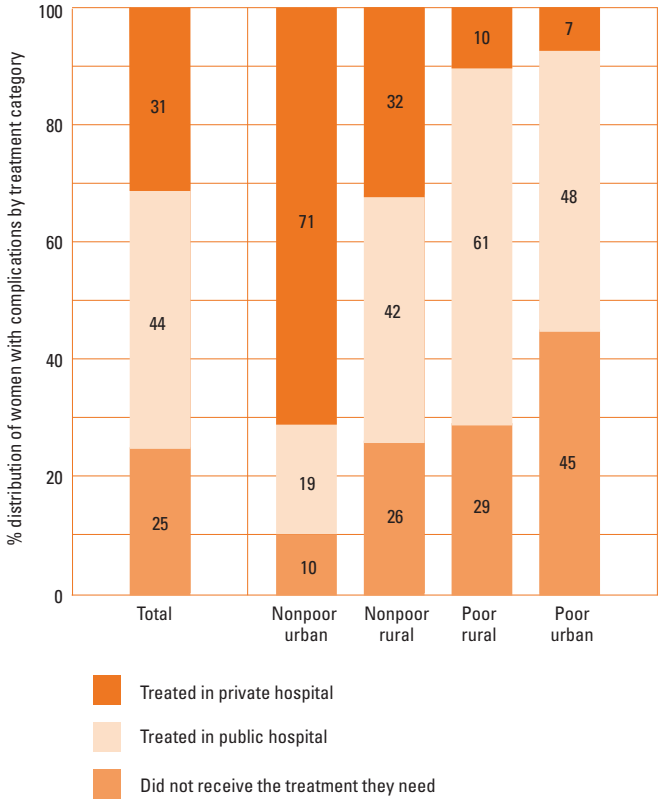
Figure 3.2 Women who obtain nonmisoprostol abortions from traditional providers or who self-induce using methods other than misoprostol have the highest risk for complications.



*Induced by a method other than misoprostol. †Data reflect the combination of two response categories, "general practitioner" and "gynecologist."

Source Reference 33.

Figure 3.3 Almost half of poor rural women who develop abortion complications go without the medical care they need.



Source Reference 33.

Chapter 4: Unintended Pregnancy and Induced Abortion

Behind almost every induced abortion is an unintended pregnancy. Even in countries where induced abortion is completely restricted, many women who become pregnant without planning to be decide that breaking the law is preferable to giving birth to a child they are unable to raise. Unfortunately, many hundreds of thousands of Mexican women make this decision every year.

More than half of all pregnancies are unintended

Overall, an estimated 55% of all pregnancies occurring in Mexico each year are unintended.[67,68] In absolute numbers, this means some 1.9 million unintended pregnancies. Contributing to these are the 19% that end in an unplanned birth, the 30% that result in an induced abortion and the 6% that correspond to a miscarriage of an unintended conception (Figure 4.1; see methodology box for information on how these were calculated). The remaining 45% of pregnancies are intended and are comprised of some 37% ending in planned births and an additional 8% resulting in miscarriages.

Levels of unintended pregnancy vary widely by development region and, as has been shown earlier with similar indicators, are higher in the country's more developed regions where desires to have smaller families are likely strongest. For example, an estimated 70% of pregnancies are unintended in Region 1, compared with 45% in Region 6 (Appendix Table 2).[67,68] These regional patterns are repeated in the unintended pregnancy rates (numbers of unintended pregnancies per 1,000 women): That is, the rate is highest, at 90 unintended pregnancies per 1,000 women aged 15–44, in the most developed region (Region 1).[67,68] It hovers around the national average of 71 per 1,000

women in the regions with a mid-range level of socioeconomic development, Regions 2, 3 and 4 (67–76 per 1,000).[67] Finally, the rate falls within a narrow range of 56–59 per 1,000 in the least developed regions (5 and 6). The limited available comparable data show that Mexico's unintended pregnancy rate is about equal to that for all of Latin America and the Caribbean, 72 per 1,000 women.[1] Mexico's unintended pregnancy rate is far lower, however, than the sole Latin American country for which we have comparable data—Colombia, at 89 per 1,000 in 2008.[60]

What do Mexican women do when they experience an unintended pregnancy? Each year, an estimated 54% of women who become pregnant without intending to be resolve their dilemma by resorting to an induced abortion (Appendix Table 2).[69] We know that women in the Federal District, who are the most motivated to avoid unplanned childbearing, are far more likely than those in Region 6 to interrupt an unintended pregnancy: Sixty-one percent of their unintended pregnancies end in an induced abortion, compared with 46% of unintended pregnancies of women in the three rural states comprising Region 6 (Chiapas, Guerrero and Oaxaca).

The above proportions of unintended pregnancies ending in abortion translate to more than one million induced abortions taking place in Mexico in 2009. This estimate of the number of abortions (Appendix Table 4) is nearly double that estimated for 1990—1,026,000[27] vs. 533,000.[70] The abortion *rate* is an important measure that incorporates population size and thus controls for change in the number of women over time. The rate estimated for Mexico in 2009 was 38 abortions per 1,000 women aged 15–44 (Appendix Table 2),[27] which represents a 52% increase since 1990, when there were an estimated 25

procedures per 1,000 women of reproductive age (Figure 4.2).[27,32] Unfortunately, this trend reflects an increased difficulty in preventing unintended pregnancy.

Mexico's abortion rate is somewhat higher than that estimated for all of Latin America (32 per 1,000 women in 2008).[71] Given the difficulty in measuring a hidden activity, reliable data on the incidence of clandestine abortion at the individual-country level are scarce. The sole, recent country-level data that were derived from the same methodology come from Colombia, which had a rate virtually identical to Mexico's in 2008 (39 per 1,000).[60] Rates in these countries that legally restrict abortion are far higher than the rates in those that allow it. In 2008, for example, the abortion rate was 17 procedures per 1,000 in Europe (excluding Eastern Europe) and 19 per 1,000 in Northern America (Canada and the United States).[71]

More developed regions have higher abortion rates

Worldwide, more highly urbanized regions of a country tend to have higher abortion rates.[1,72–74] Women and couples in these metropolitan areas usually want smaller families and are more highly motivated to avoid unplanned births than are women living in rural, less-developed regions. Mexico shows this expected pattern, since the more developed the region, the higher the estimated abortion rate. The rate in the country's most economically developed region is twice that of its two least developed regions. That is, rates range from 54 abortions per 1,000 women in Region 1 to 26–27 per 1,000 in Regions 5 and 6 (Appendix Table 2).[27] In Regions 2, 3 and 4, the abortion rate is close to the national average of 38 per 1,000.

The first estimates of state-level rates tell a more complicated story. In the 13 states whose level of development places them in the second most highly developed region (Region 2), abortion rates range broadly, from lows of 17–22 procedures per 1,000 women in Nuevo León and Chihuahua, to highs of 50–54 per 1,000 in Baja California Sur, Colima and Mexico State (Appendix Table 5). In the eight remaining states, rates fall into a narrower range of 29 to 46 procedures per 1,000 women.

It should be remembered that our methodology is unable to capture procedures that occur outside of Mexico. Thus, it makes sense that rates vary widely in the region just mentioned, since Region 2 contains several states that border on the United States. Travel to obtain a safe, legal abortion in the United States tends to deflate the estimates of sending Mexican states. For example, the very low abortion rates in the border states of Chihuahua and Nuevo León likely partly result from women leaving these states to seek a legal procedure in the United States.[75] Whereas, other factors are doubtless involved and more research is needed to understand the underlying reasons, it is relevant that these two states have the lowest and second-lowest levels of unmet need, and rank as fourth and fifth highest in terms of contraceptive use.[67]

Region 3 has comparatively little variation by state. Six of its seven states have rates within a range of 33 abortions per 1,000 women (Sinaloa) to 44 per 1,000 (Durango). Only one state is an outlier, Zacatecas, with a rate of 51 per 1,000. Region 4's rates, on the other hand, vary widely across its six states: Four have rates ranging from 29 to 40 per 1,000, but this region also contains the state with the highest abortion rate in the country (Tabasco—59 per 1,000) and the state with the second-lowest rate (Yucatán—20 per 1,000). Currently, we have no data that would explain either of these two extreme

values. In-depth research is needed to fully understand the reasons why both the country's highest and (nearly) lowest abortion rates would be in a single relatively less-developed region.

Finally, the country's five least developed states in Regions 5 and 6 all have below-average abortion rates, which fluctuate narrowly from 24 per 1,000 in Veracruz to 34 per 1,000 in Hidalgo, both in Region 5.

Abortion rates peak among women in their early 20s

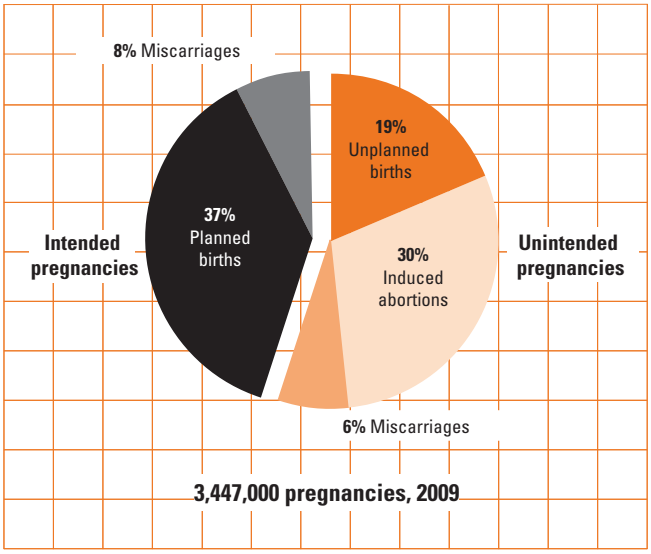
For the first time, we can also examine how Mexican women's recourse to clandestine abortion differs by their age. The pattern for Mexico as a whole shows a sharply ascending and then descending slope (Figure 4.3). The rate peaks when women are in their early 20s (55 abortions per 1,000 20–24-year-olds) and then drops steadily with age, reaching a low of 15 abortions per 1,000 40–44-year-olds (Appendix Table 5).[27]

This same inverted J-shaped pattern by age persists within all six regions, since the same age-dependent factors behind the curve apply throughout the nation. The points along that curve are also consistent with the overall level of abortion in each development region, with rates in every age-group being highest in Region 1 and lowest in every age-group in Regions 5 and 6.[27] For example, the rate among 20–24-year-olds is 86 abortions per 1,000 women in Region 1, compared with 34 to 40 per 1,000 in Regions 5 and 6 (Figure 4.3 and Appendix Table 5). The moderately developed states in Regions 2, 3 and 4 have rates in between, at 49 to 60 abortions per 1,000 20–24-year-olds. Similarly, the abortion rate among adolescents, most of whom are likely to be single and never married,

follows the same pattern: Rates are highest in Region 1 (63 abortions per 1,000 women aged 15–19) and lowest in Regions 5 and 6 (23–31 per 1,000). Adolescent abortion rates in the moderately developed states that make up Regions 2, 3 and 4 occupy the middle range between those extremes (38–52 per 1,000 adolescents).

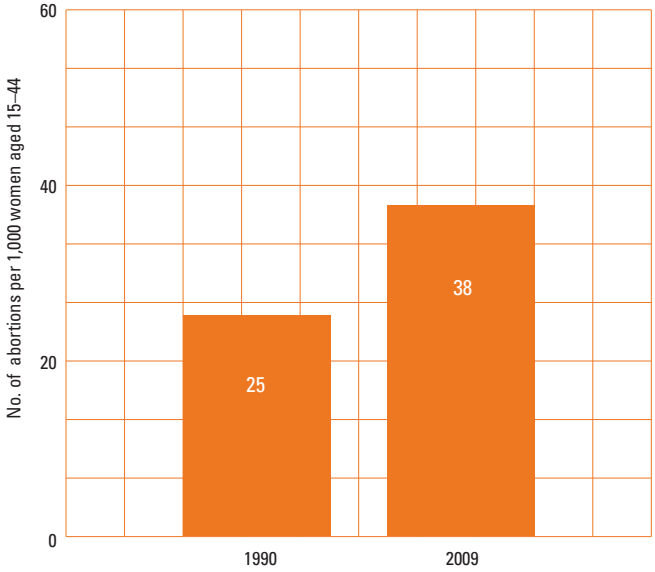
What Mexican women of all ages have in common, however, is the shared experience of unintended and unwanted pregnancy that is behind abortions in the first place. In the next chapter, we look more closely at the causes and context of unintended pregnancy in the country.

Figure 4.1 Each year, an estimated 55% of all pregnancies are unintended.



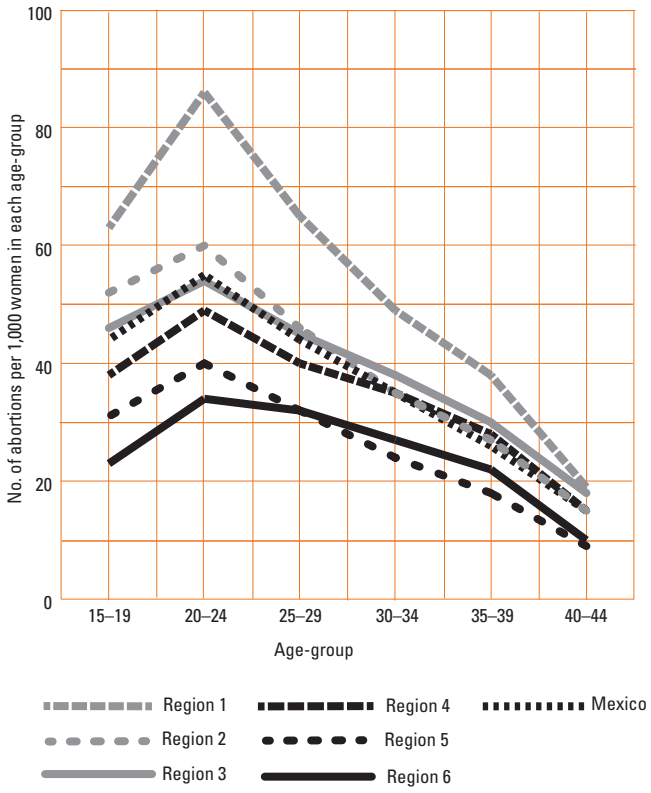
Sources References 67 and 68.

Figure 4.2 Mexico's estimated abortion rate rose by more than half between 1990 and 2009.



Source Reference 27.

Figure 4.3 The estimated age-specific abortion rate peaks among women in their early 20s in all development regions.



Source Reference 27.

Box 3: Methodology for Estimating Incidence of Induced Abortion

To estimate abortion incidence in Mexico in 2009, we applied an established indirect methodology that has been used in some 20 countries, the Abortion Incidence Complications Method (AICM).[1] The application of the AICM in Mexico combined hospital data on the treatment of postabortion complications with responses from a survey of professionals who supplied the proportion of all induced abortions that these treated cases represented. The method was also used to generate the incidence of abortion in Mexico in 1990 and 2006.[2,3] For the most recent estimates for 2009, we used the same survey of professionals that generated the 2006 data but applied it to 2009 hospital data. Because data on complications treated in public-sector hospitals in all 32 federative entities show the woman's age, we were able to extend the earlier application of the methodology to generate the first estimates by five-year age-group. This box summarizes the methodology; a more detailed discussion is available elsewhere.[4]

Estimating the number of women treated for induced abortion complications

The official Ministry of Health sources of data on women treated for complications of abortions in the country's health subsystems are described in the data sources box. We used International Classification of Diseases (ICD)-10 diagnostic codes O03 to O08 to identify women treated for all pregnancy losses, spontaneous and induced. We needed to first account for the many likely induced abortion cases that are misreported as spontaneous. Such misreporting is inevitable, given women's and hospital personnel's reluctance to bring about criminal prosecution,

and the often identical symptoms that make it impossible to distinguish complications from induced abortions from those of spontaneous abortions.[5]

Next, to remove spontaneous abortions, we assumed that only late miscarriages at 13–21 weeks were likely to need care. Although some women suffering a late miscarriage will seek medical advice, they are likely to go to doctors' offices rather than public hospitals, and their numbers are also likely to be small. (Spontaneous losses at 22 weeks or later are excluded because they are not classified as miscarriages but as fetal deaths.) We based our estimates on the best available synthesis of data from clinical studies in which the proportion of pregnancies expected to end in late miscarriages equals roughly 3.41% of all reported live births.[6] Second, because not all women needing hospital-based treatment for a late miscarriage succeed in obtaining it, we assumed that the proportion of pregnant women treated for a late miscarriage in a public-sector hospital is the same as the proportion giving birth in a public-sector hospital (67%).[4]

Subtracting the estimated cases of late *spontaneous* abortions from all postabortion cases treated in public-sector hospitals yielded the number of treated *induced* abortion cases only. However, these data needed another adjustment, because the growing use of misoprostol in the country likely resulted in many induced postabortion cases being incorrectly classified under the O02 category "other abnormal products of conception." We relied on the expert opinions of 16 gynecologists who had extensive experience treating abortion complications to estimate what proportion of cases coded as O02.0 and O02.1 instead were cases of induced abortion complications.

Thus, of the total 203,000 women treated in public-sector hospitals in 2009 for complications from pregnancy losses, an estimated 44,000 were treated for late miscarriages and 159,000 were treated for complications of an induced abortion.

Estimating the total number of induced abortions in Mexico

But women who succeed in receiving treatment in a public hospital are only a fraction of the total number of women who have a clandestine abortion. The complete number includes those who receive a safe clandestine abortion that does not lead to complications; those whose complications are treated in private hospitals; and those who fail to obtain care from a hospital, including women who die before reaching a hospital. To estimate these "uncounted" induced abortions, an inflation factor, or multiplier, is calculated to multiply the treated cases by to yield the overall total.

This estimate was based on responses to several HPS items that were asked separately for women in each of four subgroups: nonpoor urban women, nonpoor rural women, poor urban women and poor rural women. The items asked respondents whether women used misoprostol and if not, which provider they would go to for an abortion or if they induced it themselves. All six categories are mutually exclusive. For each of these six possible response categories, respondents were asked to estimate the probability of complications and the probability that women with complications would receive care in a hospital.

For the 31 states, we assumed that conditions of abortion provision, such as the safety of procedures and of access to services, were unlikely to have changed

substantially between the year of the HPS (2007) and the year that the complications data reflect (2009). Even in the special case of the Federal District, where first-trimester procedures were legalized in April of 2007,[7] the multiplier used in the earlier study is acceptable for estimating the total number of abortions, because many legal procedures in 2009 would have been safe clandestine procedures in 2007. More important, substantive change in a highly stigmatized activity such as abortion could not yet be expected just two years after legalization.

Change in legal status is just one step toward changing entrenched behaviors.[8] The eradication of deeply rooted stigma and judgmental attitudes is a slow and difficult process. As a result, the net effect of legal reform on the multiplier is likely to have been small over this two-year period, supporting our assumption that the ratio of all abortions to treated complications likely changed little between 2007 and 2009.

The multiplier is the inverse of the HPS estimate of the proportion that women treated in public hospitals represent of all women who had an induced abortion. The 2007 HPS was originally designed to generate multipliers for four major development areas rather than for the six development regions used in this report. These four areas were the most-developed Federal District with the safest clandestine services; the North,*[I] which is closest to the Federal District in level of development; the moderately developed Central;*[J] and the least developed South/East.*[K] We generated the 2009 estimates for the country's federative entities by assigning them the multiplier for the areas that they are part of, and then grouping the 31 states into their respective five development regions.

[I] *Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila, Colima, Jalisco, México, Nuevo León, Sonora and Tamaulipas.

[J] *Campeche, Durango, Guanajuato, Michoacán, Morelos, Nayarit, Puebla, Querétaro, Quintana Roo, San Luis Potosí, Sinaloa, Tabasco, Tlaxcala, Yucatán and Zacatecas.

[K] *Chiapas, Guerrero, Hidalgo, Oaxaca and Veracruz.

(Region 1 already directly corresponded to the Federal District.) Since hospital data included the age of the woman at the time of her treatment, we were able to estimate age-specific abortion rates for five-year age groups for each federative entity and its corresponding development region.

For the current analysis, we made a modification to the methodology that yielded the national 2006 estimates. First, whereas the earlier estimates used a single multiplier for the states that make up the North area,[9] the current study assigned two multipliers to that area—one for the six U.S. border states and a higher one, that was the same as the multiplier for the Central area, for the remaining five states.[4] This modification appears to have produced more accurate abortion rates, since the national rate barely changed between 2006 and 2009 when we compared the modified results.

We made a second methodological modification to improve estimates of abortion incidence for the Federal District and Mexico State. To take into account that some Mexico State residents obtain postabortion care in Federal District hospitals, the 2006 study included a proportion of Mexico State residents (those living in the greater metropolitan area who were likely to get care in the Federal District) in the base population for calculating the Federal District's abortion treatment rate.[2] However, the 2009 analysis at the level of federative entity showed that this approach would produce biased estimates of abortion rates for both the Federal District and Mexico State. Thus, because we could not accurately separate out the Mexico State residents who were traveling to the Federal District for postabortion care, we merged all input measures from Mexico State and the Federal District (numbers of treated abortion complications and its

denominator, the number of women of reproductive age) and applied the same multiplier. This approach is an improvement on the 2006 estimates, and when those earlier estimates are recalculated using our new approach, the result for the Federal District's 2006 rate (54.6 abortions per 1,000 women) is almost identical to that for 2009 (54.4 per 1,000), indicating no change.

Estimating unintended pregnancy

To estimate the incidence of unintended pregnancy, we first calculated the number of unplanned births by applying the proportion of current pregnancies that were unplanned (unwanted at the time of conception) from the 2009 ENADID, to the total number of live births that same year. Combining unplanned births with induced abortions yielded an estimate of the number of unintended pregnancies for 2009. We then calculated the rate of unintended pregnancies per 1,000 women of reproductive age and the proportion of pregnancies that were unintended.

To get the total number of pregnancies, we needed to account for pregnancies ending in miscarriages. Based on clinical studies,[6] we calculated the number of miscarriages of unintended pregnancies to be 10% of abortions and the number of miscarriages of intended pregnancies to be 20% of live births.

Limitations

Although the AICM has been widely used over the past 20 years, like any indirect estimation technique, the method has limitations, which have been discussed in detail elsewhere.[1,2,4] Some data that are key to the estimates—the conditions of

clandestine abortion in the country and the proportions of women needing postabortion care and of those receiving it—are based on the health professionals' perceptions, not on empirical fact. Moreover, the available clinical data needed to estimate the incidence of late miscarriages date from the beginning of the 1980s. Although these findings have recently been backed up by national-level data on the incidence of miscarriage in the United States,[10] the limited availability of data on miscarriages in all settings signals an important research gap.

In this application of the ACIM in Mexico—whose objective was to obtain estimates by state and age—additional assumptions and adjustments were needed. Data on the number of women treated in hospitals for abortion complications were available only by the federative entity of the hospital providing care, not by the patient's residence. Thus, estimates for the specific entity may be affected in situations where large numbers of women travel for postabortion care. However, this type of movement is typically not large enough to significantly impact estimates. The largest movement across state borders is that between the Federal District and Mexico State, and this was taken into account by the methodological modification discussed above. Data on the age of inpatients (i.e., those hospitalized overnight) were available for all health subsystems. This subset of patients represents the largest group of women who receive hospital-based care. For outpatients, for whom data on age are unavailable, we assumed the same age-distribution as that of inpatients.

Any data on women receiving postabortion care in emergency rooms were available for just one of the country's health subsystems, the Ministry of Health

(SSA), which provides care to the majority of Mexican women. Women who use SSA hospitals are poorer and less educated than other women, and such disadvantaged women tend to use emergency rooms more often than others. Thus, to estimate emergency room patients in all other subsystems, we applied a conservative assumption—that the ratio between emergency room patients and inpatients in those subsystems would equal one half the ratio between emergency room patients and inpatients in the SSA.

In addition, we also had to apply multipliers that were estimated from the 2007 HPS to hospitalization data for 2009, but expect that any change from 2007 to 2009 in variables affecting the multipliers would be minimal. The fact that the HPS-estimated multipliers were for four major areas limited our ability to detect important differences between federative entities; a larger HPS sample size drawn from more areas across the country would have improved our methodology.

For the Federal District, it would have been better to incorporate survey questions that could reflect the decriminalization of abortion in April of 2007. However, the EPS was fielded before the legislation went into effect. As mentioned earlier, much time needs to pass before the impact of decriminalizing a highly stigmatized behavior can be felt. Thus, we applied the same multipliers under the assumption that the conditions of a clandestine, hidden practice would change very slowly in the initial phases of the transition toward legality.

Chapter 5: Factors Associated with the Risk of Unintended Pregnancy

One of the first places to look for explanations for why unintended pregnancy occurs is at the practice of what prevents it—the use of contraception. Encouragingly, the proportion of married women using any method of contraception rose from 30% in 1976[76, Table 6.2] to 53% in 1987[76] and to 73% in 2009.[77] A recent change in the types of methods used is also a welcome improvement: Between 1997 and 2009, modern method*[L] use among married women 15–49 rose by eight percentage points, while use of a less-effective, traditional method[M]* fell by nearly four points (Appendix Table 6). As of that later year, the vast majority of married women (86%) say they want no more children or want to postpone a birth by at least two years (Appendix Table 2). This proportion is equally high in each of the six development regions.

However, the steady increase of two percentage points each year in use of any contraceptive method, starting in the mid-1970s through 1992, began to slow down after then (Figure 5.1). For example, between 1992 and 1997, the proportion of married women using any method was rising by just one percentage point each year, and between 1997 and 2009, that proportion went up by only 0.33 percentage points each year.[8] Interestingly, the pace of the increase in contraceptive use has slackened recently, to the point where it can be described as having come to a halt. Family size (as measured by the total fertility rate) started falling around 1970, and has continued at the same rate of decline ever since.[16,78,79] The abortion rate, on the other hand, increased substantially over the past few decades.[27,32] This suggests that women's motivation to limit and time their

[L] *Modern methods include male and female sterilization, pills, injectables, implants, the patch, IUDs, male condoms and other supply methods, such as spermicides and female condoms.

[M] *Traditional methods include periodic abstinence (rhythm), withdrawal and the Lactational Amenorrhea Method (LAM).

births to achieve smaller families has increased at a faster pace than has their use of contraception. The situation may also indicate that inadequate use of modern methods, such as their inconsistent use, has led to high rates of unintended pregnancy, especially among young women, which has, in turn, resulted in increases in the rate of induced abortion (Figure 5.1).

As of 2009, 67% of married women aged 15–49 were effectively protected from unintended pregnancy because they were using a modern method of contraception.[67] This proportion varies considerably by development region and, for the most part, follows the expected pattern of being highest in the most developed Region 1 (75% of married women) and lowest in the least developed Region 6 (56%; Appendix Table 6). The exception is Region 5, whose modern method use basically matches that of the second most developed Region 2 (69.2% and 70.8% of married women, respectively). Why levels of modern use—specifically of sterilization—in the two states that make up Region 5,Veracruz and Hidalgo,[80] should be higher than expected for the region's level of development is worthy of further study to better understand its service provision approaches.

The age-profile of contraceptive users, which is related to their current childbearing plans and thus influences their choice of methods, also comes into play. For example, young married women use temporary methods to postpone a first birth or to space a second one. One of the requirements of temporary methods, such as the pill and the condom, is that they always be used correctly and consistently.[81] Young women younger than 30 are more likely than older women to become pregnant through inconsistent or incorrect use of a temporary contraceptive method.[82] Moreover, married

women aged 35 and older commonly rely on the permanent and highly effective method of sterilization (i.e., 51%, 61% and 62% in each relevant older five-year age-group, respectively);[67] women depending on sterilization hardly ever experience an unintended pregnancy.

When a woman initiates contraceptive use is related to where in the process of planning and forming her family she happens to be. Currently, pervasive cultural norms encourage couples to solidify a union by starting their family soon after marrying.[25,83] Thus, Mexican women usually start contraceptive use only after their first child is born. That is, fewer than one-third of married women practice contraception before having had any children, and only a little more than half do so once they have had their first child.[67]

Even in countries with high levels of contraceptive use, when an accidental pregnancy happens, women may be highly motivated to avoid giving birth. No contraceptive method—modern or traditional—is perfect, and unintended pregnancy can result from nonuse of contraception, incorrect or inconsistent use, and method failure. Below we examine in detail some other factors that can raise the likelihood of unintended pregnancy. We present the data as numbers of women (in six subgroups) to illustrate the magnitude of Mexican women who are exposed to the risk of unintended pregnancy (Appendix Table 2).

Women at risk for unintended pregnancy

Married women of all ages. A clear sign of being at risk for unintended pregnancy is having an unmet need for contraception—that is, not wanting to become pregnant (in the next two years or at all), but not practicing contraception. The proportion of married

Mexican women who fit that description as of 2009 was 12%[67] (1,996,000 women; Appendix Table 2), a proportion that has remained unchanged since 1997 (Appendix Table 6). Unmet need generally increases with socioeconomic disadvantage; as of 2009, it varied from just 8% of married women aged 15–49 in Region 1 to 21% in Region 6.

However, as was shown in the related measure of contraceptive use, Region 5 breaks the expected pattern by level of development. Indeed, the proportion of married women with unmet need in Region 5 (12%) is not only far lower than that in Region 6 (21%), but is also lower than that in Region 4 (15%) and is basically the same as that in Region 3 (11%).

Even though users of traditional methods do not have unmet need per se, relying on these methods can raise the likelihood of unintended pregnancy. In general, the risk of a method failure is much higher for traditional methods than for modern methods.[81] As of 2009, roughly 5% of all married women of reproductive age (853,000), with almost no difference by age-group, did not want a pregnancy but were nonetheless using methods that are less effective at preventing pregnancy than are modern methods (Appendix Table 6).

Young married women only. One constant across all federative entities and development regions is that levels of unmet need peak among the youngest women. In 2009, 27% of married 15–24-year-olds had an unmet need (710,500 women included in the nearly two million above), a proportion that varies only narrowly across development regions (Appendix Table 6). The bulk of the unmet need among these women—two-thirds—corresponds to need for methods to space births. This finding suggests that

Mexico's National Family Planning Program needs to increase the availability of temporary methods to space methods (as opposed to permanent methods to limit births).

Currently unmarried women of all ages. The situation is far different among single women. Prevailing taboos throughout Mexico against bearing children out of wedlock[84–87] mean that sexually active, single women who are not practicing contraception are at very high risk for unintended pregnancy and subsequent, possible induced abortion.

As of 2009, some 18% of 25–49-year-olds overall were not in a union at the time and were sexually active (i.e., had sex in the past month; not shown).[67] We assume that these women would not want to become pregnant, so the 28% who were using a traditional method or no method at all would be at risk for an unintended pregnancy (295,000 women).

The social disapproval is likely strongest for young unmarried women. At the national level, some 9% of never-married women aged 15–24 reported having had sex in the past 30 days in the 2009 survey. This is no doubt an underestimate of the true extent of their exposure to the risk of pregnancy, given the sporadic nature of sexual activity among young people (i.e., many would have had sex in the past two or three months, but not the past 30 days). Moreover, young single women can generally be expected to underreport such stigmatized behavior.[88,89] Further, Mexico follows the common global pattern in which levels of nonmarital sexual activity are highest in the most urbanized areas and lowest in the most rural ones.[10,90–92]

As of 2009, 18% of never-married 15–24-year-old women were currently sexually active in Region 1, compared with just 4% in Region 6 (Appendix Table 6)

Some 27% of these women did not want a child in the next two years or ever, but were not using a method of contraception (164,000 women). In likely reflection of regional variation in the strength of taboos against premarital sex that would prevent these women from seeking services, the proportion having an unmet need ranges from a low of 15% in Region 1 to a high of 45% in Region 6 (Appendix Table 6).). Unfortunately, an additional 4% of never-married, sexually active 15–24-year-olds were using a traditional method (26,000), which means a higher risk of unintended pregnancy compared with modern method use.

As hinted above in young women's sporadic sexual activity, the unpredictability of young people's relationships means that even those who are sexually experienced but did not have sex in the past month are at high risk for unintended pregnancy. Nationally, about 12% of never-married 15–24-year-old women have ever had sex but not in the past month (Appendix Table 6). (This proportion varies as expected by development region, going from just 7% in what is likely among the country's most culturally conservative region [Region 6], to 18% in the nation's capital [Region 1].) The 84% of these sexually experienced young women who are not using any method or a traditional one are highly likely to want to avoid pregnancy and thus can be considered to be at risk for unintended pregnancy (687,000).

When we add up the absolute numbers of all Mexican women who want to avoid pregnancy but are not adequately protected from becoming pregnant without wanting to be the grand total is sobering—some four million women. In addition, inconsistent or incorrect use among the nearly five million users of modern reversible methods would also lead to some unintended pregnancies. Given the size of the group of women who are

potentially at risk for unintended pregnancy and the number who may become pregnant even though they are using modern methods, the estimate of some 1,900,000 unintended pregnancies annually—and some 1,026,000 abortions—seems plausible.

Poor access to quality health services

Another important factor affecting women's risk of unintended pregnancy is the extent to which they can access quality contraceptive services. Despite nearly all of the population being entitled to use one of the country's health services, the quality of care varies widely by the specific health service that they are entitled to use.*[N] We expect that, other factors being equal, levels of contraceptive use will be higher—and levels of unmet need will be lower—in the development regions where women have good access to quality health care, which would include contraceptive counseling and supplies.

To examine this assumption, we created an index of access to quality health services. (See data box for further details on how we assigned women to levels of poor, medium and good access.) Two dimensions are incorporated into the index: the type of health service a woman is entitled to use, and her years of schooling as a proxy for being educated enough to know about, obtain and effectively use contraception to act on her childbearing goals.

[N] *Much of Mexico's population is enrolled in a government health service that is related to their employment—either a retirement or pension health plan or an active contributory health plan; another portion has coverage that entitles them to use, or to pay out-of-pocket to use, private health facilities. Still another proportion is enrolled in state-level plans that offer some health services. In addition, every citizen is eligible for care through the federal Ministry of Health, including the sizable proportion of the population that is not affiliated with any of the services mentioned above. Unsurprisingly, the quality of care varies greatly according to the specific health service that Mexicans are entitled to use.

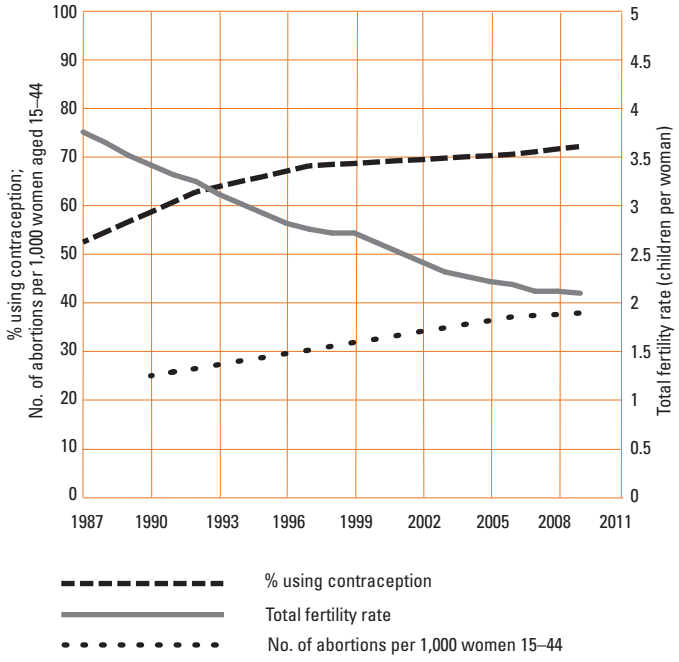
Overall, four in 10 Mexican women of childbearing age fall into the category of having *poor* access to quality care (Appendix Table 7). As expected, the proportion with poor access is much higher in less-developed regions, and spans from 26% in Region 1 to 59% in Region 6. In contrast, the proportion qualifying as having *good* access to quality care is 26% overall and goes from 21% to 15% in development Regions 4, 5 and 6, the ones with the highest percentages of the working population living in poverty (Appendix Table 2). Unsurprisingly, 95% of women with good access to quality health care live in urban areas (Appendix Table 7).

Access to quality health care is closely related to levels of unmet need for contraception. For example, in 2009, among married women with poor access to quality health care, 16% had an unmet need for contraception, compared with just 7% of those with good access (Appendix Table 7). The pattern is equally evident for single, sexually active 15–24-year-old women—43% of those with poor access have an unmet need for contraception, compared with 19% of those with good access.

However, that one-fifth of sexually active single young women with *good* access still have unmet need suggests barriers to contraceptive use beyond and in addition to what our index measures. These obstacles likely include the previously mentioned strong stigma against sexual activity outside of marriage, the related negative and judgmental treatment at the hands of many health providers,[93] young women's lack of accurate information about contraception, and their lack of autonomy and a related inability to negotiate contraceptive use with sexual partners.[84–86] It is thus unsurprising that the result of being unable to overcome these obstacles is often an induced abortion.

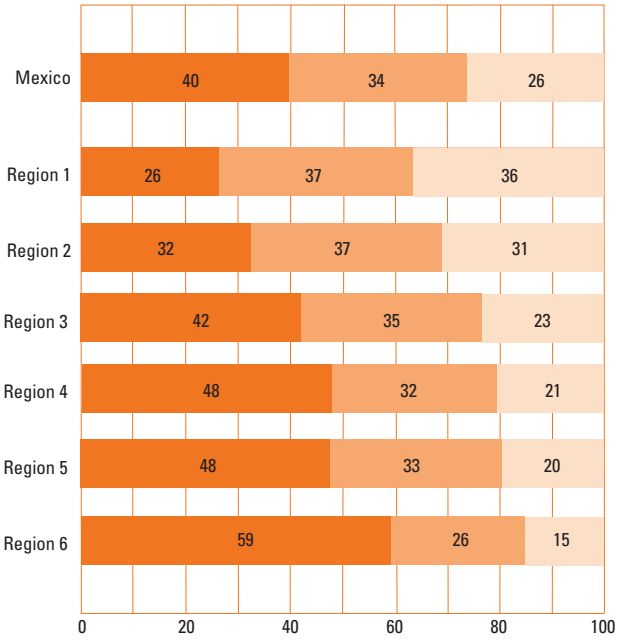
What would influence a woman to resort to a highly stigmatized abortion rather than carry an unwanted pregnancy to term? The interrelationships between the individual woman and the broader setting of her life situation are complex. The decision to interrupt a pregnancy reflects such factors as a woman's age, marital status, religiosity, degree of identification with traditional cultures, educational expectations, work background and sense of autonomy over her future. Clearly, more research is needed to better understand the specific factors that most influence levels of unintended pregnancy and abortion in federative entities that otherwise share a similar level of development but have diverse cultural backgrounds.

Figure 5.1 Even as contraceptive use has plateaued, family size has continued to decline.



Sources Contraceptive prevalence from 1987 to 2006—references 7 and 8; contraceptive prevalence in 2009—reference 67; total fertility rates from 1987 to 2004—reference 79; total fertility rates from 2005 to 2009—reference 16; 1990 abortion rate—reference 32; 2006 abortion rate—reference 32; and 2009 abortion rate—reference 27.

Figure 5.2 More developed regions have better access to quality health services.



Percent distribution of women 15–49 by access to quality health services*

Poor Medium Good

*The quality of care access indicator is an index that incorporates a woman's level of education and the type of health service she is entitled to use. See data box.

Source Reference 67.

Chapter 6: Implications and Recommendations

Mexico is a fast-developing, upper middle-income country whose population should soon stabilize after decades of growth, given that women now have an average of about two children. The country's recent experience with contraceptive use and abortion broadly supports the common pattern in many other countries, in which increases in abortion rates coexist with ever-smaller increases in contraceptive use. International research suggests that in Mexico, as elsewhere, abortion rates will eventually stabilize and then decline as persistent pockets of unmet need are met and the efficacy of widespread contraceptive use improves.[94,95]

Unfortunately, despite Mexico's currently high levels of use, evidence suggests that many women and couples practice contraception ineffectively; that is, they use their method incorrectly or inconsistently,[31,86] which translates to difficulty in preventing unintended pregnancy, and thus in planning the timing and number of births. Moreover, desires to have fewer children have intensified recently,[96] with many women wanting families of no more than two children.[25,97] Thus, it appears that the effective use of modern contraception is not keeping up with desires to more precisely plan the timing of births and the size of families. Indeed, as of 2009, the pace of the increase in effective use—particularly in less-developed areas of the country and among younger women—has not been fast enough to enable women to achieve the two-child norm without widespread use of abortion.[8]

Because induced abortion is punishable by law everywhere in Mexico except the Federal District—and is highly stigmatized everywhere *including* the Federal District[62]—the vast majority of abortions occur in secrecy, where safety cannot be assured. However,

just because no reliable data exist on the practice of clandestine abortion does not mean it does not occur. We relied on an indirect technique to first estimate the number of women treated for complications from induced abortion (159,000) to generate the total number of women who obtained an abortion in 2009 (1,026,000). Mexico appears to follow the expected patterns established in other countries in which abortion rates are uniformly higher in more urbanized areas. The new estimates of abortion incidence by age—in which rates peak among women in their early 20s—is intuitively expected. That is, young women's greater recourse to abortion is unsurprising given their high fecundity (ability to conceive), their high levels of sexual activity while unmarried, their high likelihood of wanting to postpone births, and their resulting reliance on temporary contraceptive methods, which have a higher chance of resulting in an unintended pregnancy than do permanent ones.

Many Mexican women are at risk for unintended pregnancy

Despite relatively high levels of contraceptive use, 12% of married Mexican women of reproductive age—two million women—have an unmet need for family planning[67] because they would like to postpone their next birth or stop having children altogether, yet are not using any method of contraception. Young married women have especially high levels of unmet need and account for about one third of the two million. Given the widespread taboos against out-of-wedlock childbearing in Mexico, an additional 877,000 women aged 15–24 and 295,000 aged 25–49 who are currently unmarried but are not practicing contraception or are using a traditional method, are also at high risk for an unintended pregnancy.

Finally, since some 853,000 married women are using less-effective traditional methods, the grand total of women whose sexual activity, contraceptive and marital status places them at risk for unintended pregnancy reaches more than four million.

The desire for smaller families and more precise timing of births is most pronounced in the more urbanized and economically advanced regions, where the costs of raising a family and educating children are highest. These are the same regions where young women are delaying marriage, which raises young women's likelihood of becoming sexually active while unmarried and the attendant risk for unintended pregnancy, and possible induced abortion.

Moreover, many Mexican women, especially those living in less-developed regions, have poor access to quality health care. These regions have the highest levels of unmet need for contraception in Mexico. The persistence of high unmet need in regions with high proportions of women having poor access implies that many women are unable to exercise their right to determine their family size because they lack adequate access to family planning services and supplies.

Variations in contraceptive use across federative entities do not always follow the expected patterns by their assigned region of development. Many aspects, in addition to contraceptive use, affect the likelihood of unintended pregnancy and abortion, including the hard-to-measure effects of culture, social environment and economic status. More research is needed to more accurately understand what is behind the wide variability in these indicators across and within development regions. In addition, each federative

entity needs to consider how its unique background should drive its family planning policies to help women better avoid becoming pregnant when they do not want to be.

New policy and program approaches are needed

A wide range of efforts—at the national level and at the level of each federative entity—are necessary to reduce unintended pregnancy and thereby reduce recourse to unsafe abortion. Women's health will also benefit from improvements in the quality of and access to postabortion care, and from increased access to safe services as permitted under each federative entity's laws. Below we present some recommendations toward reaching these goals.

Improve access to and quality of contraceptive services.

Services to help women prevent the root cause of abortion—unintended pregnancy—need to be more responsive to women's realities. Although levels of unmet need are highest by far among women who want adequate spacing between a first and second child, need is also high among women who want to postpone a first birth.[67,77] These women need counseling about how to effectively and consistently use reversible methods. On the other hand, for women who want to stop childbearing, services should focus on the use of long-term or permanent methods, which are not always available to women who have poor access to quality health care. Moreover, many women still are unaware that contraception is available free of charge, so public education campaigns to inform them about these essential services are still needed.

Contraceptive use is already high in Mexico. Services need to focus on improving the quality of current use by counseling couples about the importance of effective and consistent use. Women who are dissatisfied with their method need help switching to a new one that better suits their needs.

Adolescents' and young women's unique needs should be addressed.

Tailored contraceptive services for young women only (especially those who have never married) are warranted because of their very high level of abortion. It is imperative that these services be youth friendly. Moreover, the use of emergency contraception is negligible in the country (accounting for 0.03% of use among married women in 2009[77]), and can undoubtedly help the 687,000 young women aged 15–24 whose sporadic sexual encounters are likely to be unprotected. What is more, given that national guidelines require medical staff to immediately offer rape victims the option of emergency contraception,[98] more needs to be done to publicize its availability so women know that they can seek help at all government levels to avoid rape-related pregnancies and abortions.

The involvement of the educational system is essential to improving the situation of young people. To that end, practical information on building skills to communicate about contraception and negotiate its use should be included in the academic curriculum. Young people in more developed regions are the most likely to become sexually active before marriage; waiting to inform them about the importance of contraception until they are married is often too late. To inform young people who are not in school about their right to contraceptive services, other outreach initiatives are needed, such as campaigns

using the Web; incorporating family planning messages in entertainment activities—such as fairs, sporting events, soap operas and youth concerts; and using traditional advertising media, such as billboards, posters, television and radio.[87,99]

Men must be more actively involved.

We have insufficient information about the role that Mexican men play in decisions on family size, contraception and abortion. The few, very small studies touching on the role of men suggest that many are ignorant about contraceptive choices, consider contraception to be the woman's responsibility, or oppose its use altogether.[31,87] The very low prevalence of male-dominated methods—just 7% of couples use condoms and 2% rely on vasectomy[67]—confirms the persistence of machismo in Mexico today.[85,86]

We know even less about men's involvement in abortion-related discussions. By and large, men are little involved in these decisions.[31] Although women are the ones who ultimately decide whether to interrupt a pregnancy, more needs to be done to persuade men that they have a vital role in preventing unintended pregnancy. Men need to be educated about the risks their partners face in resorting to an unsafe clandestine abortion, especially in areas with very high abortion rates. Moreover, men should learn about the importance of not delaying care for complications of unsafe abortion.

No Mexican woman suffering postabortion complications should lack care.

The estimate that almost half of poor rural women with abortion complications do not receive care is sobering. These women may live too far from a clinic or

hospital, not know that treatment is available or needed, or fear legal reprisals or punitive treatment from providers. Postabortion care is currently primarily offered in hospitals, which disproportionately rely on the outdated and highly resource-dependent method of dilation and curettage. Broad efforts should be made to expand access by scaling-up and institutionalizing this essential care by extending it throughout lower-level clinics or health centers.[100] Replacing dilation and curettage with the less-invasive, recommended methods of MVA and misoprostol[4] will go a long way toward lowering costs and expanding access throughout all levels of health facilities. At the very least, clinics in remote rural areas need clear protocols to promptly refer complicated cases. For this, Mexico can make use of the existing referral infrastructure for emergency obstetric care, which was recently improved in much of the country.[101]

Women need to be educated about the importance of getting care—including treatment required by the incorrect use of misoprostol[34,41]—without delay. All postabortion care, private or public, should include contraceptive counseling and services to prevent repeat abortions. In addition, providers of postabortion care need to be sensitized about treating women with respect and compassion.

Safe services should be available for all women who qualify for a legal abortion.
To better protect their health, women need better access to the abortions that they legally qualify for. Currently, all 31 Mexican states permit abortion in at least one extenuating circumstance—for pregnancies resulting from rape. However, very few women seek an abortion under existing legal criteria when they meet them. This situation calls for states

to develop administrative processes and mechanisms that would enable women who qualify for a legal abortion to obtain one. The steps taken by the Federal District before legalization provide a model example: These encompass first clarifying the authority officially responsible for approving legal abortions; codifying the legal procedures for approval of abortions; and releasing medical guidelines to health professionals, which include informing women about the procedure and obtaining their consent.

It should be noted here that current state-level requirements limit access to safe abortion, and that these obstacles disproportionately affect poorer women. Removing some of the more cumbersome state requirements for legal procedures would increase access and improve women's health.

Information at the federative-entity level should be used to guide policies and programs. The data on abortion and unintended pregnancy presented here are crucial for local governments, which decide the size of their family planning budget and legal criteria for abortion. To better meet the needs of neglected or underfunded subgroups of women, local government and health officials, with the support of civil organizations, should develop policies that are informed by each federative entity's specific situation.

Final reflections

Better reproductive health for all Mexicans and greater equity in access to care depend not only on improvements in government services but also on the political will to carry them out, and on the actions of a wide range of representatives of civil society. These

must include organizations of advocates, providers and the media. The general public needs to remain informed about the negative consequences of unsafe abortion for women and society, particularly its more severe impact on poor and rural women. The benefits that could accrue from these efforts are significant: fewer unintended pregnancies and unsafe abortions, a less burdened health system, healthier women and families, and a more equitable and productive society.

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References for Box 2: Abortion Laws in Mexico

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Appendix Table 1. Indications for legal abortion, 31 states, Mexico, 2013

State	Rape	Danger to the pregnant woman's life	Grave fetal abnomality incompatible with life	Danger to the pregnant woman's health	Other causes
Aguascalientes	X	X			X*
Baja California	X†	X			X*,‡
Baja California Sur	*	X	X	X	X*,‡
Campeche	X†			X	X*
Chiapas	X†	X	X		
Chihuahua	*			X	X*,‡
Coahuila	X†	X	X		X*
Colima	**	X	X	X	X*,‡
Durango	X	X			X*
Guanajuato	X				X*
Guerrero	X**		X		X*,‡
Hidalgo	X†		X	X	X*,‡
Jalisco	X	X		X	X*
México	X§	X	X		X*
Michoacán	X	X		X	X*
Morelos	X	X	X		X*,‡
Nayarit	X	X		X	X*
Nuevo León	X	X		X	
Oaxaca	**	X	X		X*
Puebla	X§	X	X		X*
Querétaro	X				X*
Quintana Roo	X†,§	X	X		X*
San Luis Potosí	X	X			X*,‡
Sinaloa	X	X			X*
Sonora	X	X			X*
Tabasco	X	X			X‡,††
Tamaulipas	X	X		X	X*
Tlaxcala	X**	X		X	X*
Veracruz	X†	X	X		X*,‡
Yucatán	X	X	X		X*,‡,‡‡
Zacatecas	X§	X		X	X*
Total	**31**	**25**	**13**	**12**	**29**

*A woman cannot be penalized if she loses a pregnancy through negligence. †In these states, the time limits for legal pregnancy termination after rape vary from 75 days to three months from the rape or moment of conception. ‡Artificial insemination without the woman's consent. §Processes for abortion in cases of rape exist in the states' codes of criminal procedures (Códigos de Procedimientos Penales). **Norms for the provision of abortions exist (including, but not limited to, Agreements and Guidelines in Medical Law). ††According to a legal interpretation of Tabasco's penal code, a pregnancy loss that occurs without the active, deliberate action of a pregnant woman or a doctor cannot be penalized. ‡‡For economic reasons, when the pregnant woman has at least three children.

Note This table follows the language in state penal codes that distinguish between “danger to the woman’s health” and “danger to the woman's life.” However, in the three states whose penal codes allow abortions when the woman’s health is in danger but not when her life is in danger—Campeche, Chihuahua and Hidalgo, we assume that risk of death has to be subsumed under risk to health.

Source Grupo de Información en Reproducción Elegida (GIRE), State legislation, no date, <https://www.gire.org.mx/index.php?option=com_content%20&view=article&id=%20409&Itemid=1154&lang=en>, accessed May 4, 2013.

APPENDIX TABLE 2. Measures of abortion and pregnancy, and social and demographic characteristics of women of reproductive age, all by six development regions, Mexico, 2009

Measure	Mexico	Development region					
		Most developed					*Least developed*
		1	2	3	4	5	6
No. of women treated in public-sector hospitals for complications of induced abortions	159,005	14,825	73,022	22,775	22,339	11,766	14,278
No. of women 15–44	26,991,725	2,250,126	11,616,226	3,645,957	4,262,309	2,437,626	2,779,481
Public-sector hospitalization rate for treatment of induced abortion complications (cases per 1,000 women 15–44)	5.9	6.7	6.3	6.2	5.2	4.8	5.1
No. of induced abortions	1,025,669	122,455	470,612	145,394	150,645	64,617	71,946
Abortion rate (no. of abortions per 1,000 women 15–44)	38.0	54.4	40.5	39.9	35.3	26.5	25.9
% of pregnancies that are unintended	55.2	69.7	55.8	57.2	52.1	51.4	44.7
Unintended pregnancy rate (no. of unintended pregnancies per 1,000 women 15–44)	70.5	89.7	72.3	75.5	66.7	58.6	56.0
% of unintended pregnancies that end in abortion	53.8	60.6	56.0	52.7	52.9	45.2	46.1
NO. OF WOMEN AT POTENTIAL RISK FOR UNINTENDED PREGNANCY							
Currently married/in union, 15–49							
With unmet need for contraception*	1,966,000	u	u	u	u	u	u
Using traditional method†	853,000	u	u	u	u	u	u
Never-married women, 15–24							
Sexually active‡							
With unmet need for contraception§	164,000	u	u	u	u	u	u
Using traditional method†	26,000	u	u	u	u	u	u
Sexually experienced, but not in last month							
Using traditional method† or not using any method	687,000	u	u	u	u	u	u
Single sexually active‡ women, 25–49							
Using traditional method† or not using any method	295,000	u	u	u	u	u	u
Total	4,021,000	u	u	u	u	u	u
Social and demographic characteristics							
% of working people who live in poverty**	45.3	33.0	33.5	44.4	54.9	59.2	71.5
% of women 15–49 living in urban areas	79.8	99.5	89.6	72.7	73.2	62.2	56.1
% of women 15–49 with ≥10 yrs. of education	43.1	58.0	46.9	38.9	38.1	39.1	30.9
% distribution of women 15–49 by level of access to quality health services††							
% with poor access	39.7	26.4	32.4	42.1	47.7	47.7	59.2
% with medium access	34.2	37.3	36.6	34.8	31.6	32.8	25.8
% with good access	26.1	36.4	31.0	23.1	20.6	19.6	15.0

*A married woman has an unmet need for contraception if she is fecund, does not want a child in the next two years or does not want any (more) children, yet is not using a contraceptive method; or is currently pregnant or amenorrheic and did not plan to or want to become pregnant and was not using a contraceptive method at the time she conceived. We assume that married women are sexually active. †Rhythm or calendar method (periodic abstinence), withdrawal and lactational amenorrhea method (LAM). ‡Had sex in the past month. §A never-married woman has an unmet need for contraception if she is sexually active (had sex in the past month), does not want a child in the next two years or does not want any (more) children, yet is not using a contraceptive method; or if she is currently pregnant and did not plan or want to become pregnant, yet was not using a contraceptive method at the time she conceived. **Earns less than two minimum monthly salaries. ††See data sources box for the definition of this variable and details on how it was constructed.

Notes u = unavailable. Numbers of women at potential risk for unintended pregnancy are rounded to nearest thousand. CONAPO introduced a new method of calculating unmet need as of 2009; for reasons of data comparability, our results instead use the earlier definition.

Sources Number and rate of women treated in public-sector hospitals for complications of induced abortion, and number and rate of induced abortions—reference 27; number of women 15–44—reference 16; % of working people who live in poverty—reference 28; percentages and rates of unintended pregnancies—references 67 and 68; all other data—reference 67.

Appendix Table 3. Estimated public-sector hospitalization rate for treatment of induced abortion complications in five-year age-groups (cases per 1,000 women in each age-group), according to development region and federative entity, Mexico, 2009

Development region and federative entity	Hospitalization rate for induced abortions						
	Age-group						
	15-19	20-24	25-29	30-34	35-39	40-44	All
Mexico	**6.9**	**8.5**	**6.8**	**5.4**	**4.2**	**2.3**	**5.9**
DEVELOPMENT REGION							
Region 1	7.9	10.6	7.9	6.0	4.7	2.3	6.7
Region 2	8.2	9.3	7.0	5.4	4.3	2.3	6.3
Region 3	7.1	8.4	7.0	6.0	4.7	2.9	6.2
Region 4	5.6	7.2	5.9	5.2	4.0	2.3	5.2
Region 5	5.5	7.2	5.9	4.4	3.3	1.6	4.8
Region 6	4.5	6.8	6.4	5.4	4.5	2.1	5.1
REGION 1							
Federal District	7.9	10.6	7.9	6.0	4.7	2.3	6.7
REGION 2							
Aguascalientes	9.3	8.0	6.9	6.3	5.3	3.6	6.8
Baja California	8.1	9.6	6.7	4.5	3.3	2.0	5.9
Baja California Sur	15.0	16.7	11.6	8.0	5.4	2.8	10.2
Chihuahua	6.9	5.4	5.3	3.6	2.7	1.8	4.4
Coahuila	15.6	13.5	9.7	6.8	4.6	2.4	9.1
Colima	7.9	10.8	9.6	6.8	5.4	3.0	7.5
Jalisco	6.7	8.2	6.5	5.8	5.0	3.0	6.1
México	7.9	10.6	7.9	6.0	4.7	2.3	6.7
Nuevo León	6.0	4.7	3.1	2.9	2.7	1.6	3.6
Sonora	10.0	11.8	8.3	6.5	4.8	2.3	7.5
Tamaulipas	8.4	10.1	8.5	6.7	4.7	2.5	7.0
Morelos	8.0	8.2	6.2	5.0	3.6	2.1	5.8
Quintana Roo	7.2	8.3	5.5	3.7	3.1	1.9	5.2
REGION 3							
Durango	6.8	8.5	7.8	7.3	5.0	3.0	6.6
Guanajuato	5.9	7.4	6.2	5.5	4.9	3.1	5.6
Nayarit	9.2	9.2	6.6	5.9	3.4	2.5	6.4
Querétaro	7.2	8.8	7.5	5.6	4.8	3.3	6.4
Sinaloa	9.9	9.4	7.8	6.1	4.0	2.1	6.8
Tlaxcala	5.1	7.9	5.9	4.9	3.7	2.4	5.2
Zacatecas	7.7	9.8	9.1	7.6	6.5	3.5	7.6
REGION 4							
Campeche	6.0	8.6	7.1	4.7	3.8	1.4	5.6
Michoacán	6.2	7.5	6.6	6.0	4.9	2.7	5.9
Puebla	4.9	6.6	5.2	4.7	3.3	2.0	4.7
San Luis Potosí	4.1	5.3	4.9	4.5	3.9	2.4	4.3
Tabasco	10.2	13.4	9.7	8.2	5.4	2.5	8.7
Yucatán	2.7	3.5	3.2	3.2	2.6	1.8	2.9
REGION 5							
Hidalgo	5.6	7.5	5.9	4.7	3.5	1.6	5.0
Veracruz	5.5	7.1	5.9	4.3	3.2	1.6	4.8
REGION 6							
Chiapas	4.7	7.3	5.9	4.7	4.1	2.0	5.1
Guerrero	4.6	5.9	6.4	5.5	4.9	2.0	5.0
Oaxaca	4.3	7.0	7.0	6.3	4.6	2.3	5.4

Source Reference 68.

Appendix Table 4. Estimated number of induced abortions by age-group, according to development region and federative entity, Mexico, 2009

Development region and federative entity	Number of induced abortions						
	Age-group						
	15-19	20-24	25-29	30-34	35-39	40-44	All
Mexico	**230,320**	**269,660**	**203,161**	**154,860**	**113,262**	**54,406**	**1,025,669**
DEVELOPMENT REGION							
Region 1	22,654	32,801	25,750	19,484	14,922	6,844	122,455
Region 2	110,898	124,392	91,575	68,741	50,825	24,181	470,612
Region 3	33,687	36,413	28,056	22,192	16,223	8,823	145,394
Region 4	33,372	39,499	29,585	23,734	16,281	8,174	150,645
Region 5	15,061	17,625	13,049	9,381	6,598	2,903	64,617
Region 6	14,648	18,930	15,146	11,328	8,413	3,481	71,946
REGION 1							
Federal District	22,654	32,801	25,750	19,484	14,922	6,844	122,455
REGION 2							
Aguascalientes	3,706	2,879	2,297	1,977	1,553	919	13,331
Baja California	5,665	6,499	4,517	2,964	1,972	1,024	22,641
Baja California Sur	1,806	1,961	1,391	943	582	260	6,943
Chihuahua	5,253	3,757	3,446	2,316	1,669	1,024	17,465
Coahuila	9,400	7,334	5,065	3,569	2,304	1,043	28,715
Colima	1,499	1,985	1,686	1,119	840	413	7,542
Jalisco	15,545	18,010	13,295	10,972	8,827	4,683	71,332
México	43,100	56,851	41,875	30,862	22,953	9,972	205,613
Nuevo León	5,699	4,310	2,855	2,722	2,386	1,187	19,159
Sonora	5,630	6,014	4,066	3,124	2,217	942	21,993
Tamaulipas	5,908	6,853	5,695	4,400	2,862	1,341	27,059
Morelos	4,414	4,171	2,942	2,265	1,560	833	16,185
Quintana Roo	3,273	3,768	2,445	1,508	1,100	540	12,634
REGION 3							
Durango	3,671	4,064	3,319	2,869	1,867	1,006	16,796
Guanajuato	10,698	12,231	9,338	7,674	6,227	3,477	49,645
Querétaro	4,366	4,979	4,011	2,822	2,173	1,292	19,643
Nayarit	2,991	2,671	1,747	1,481	793	520	10,203
Sinaloa	6,220	5,276	3,998	3,022	1,910	889	21,315
Tlaxcala	1,987	2,913	2,069	1,609	1,080	593	10,251
Zacatecas	3,754	4,279	3,574	2,715	2,173	1,046	17,541
REGION 4							
Campeche	1,671	2,240	1,753	1,072	780	253	7,769
Michoacán	8,972	9,681	7,558	6,207	4,627	2,365	39,410
Puebla	9,962	12,110	8,780	7,111	4,494	2,392	44,849
San Luis Potosí	3,616	4,138	3,379	2,842	2,320	1,266	17,561
Tabasco	7,405	9,143	6,234	4,806	2,840	1,152	31,580
Yucatán	1,746	2,187	1,881	1,696	1,220	746	9,476
REGION 5							
Hidalgo	4,792	5,766	4,125	3,123	2,207	886	20,899
Veracruz	10,269	11,859	8,924	6,258	4,391	2,017	43,718
REGION 6							
Chiapas	6,198	8,449	5,906	4,083	3,080	1,290	29,006
Guerrero	4,112	4,451	4,088	3,096	2,512	926	19,185
Oaxaca	4,338	6,030	5,152	4,149	2,821	1,265	23,755

Source Reference 68.

Appendix Table 5. Estimated abortion rate by five-year age-groups (number of induced abortions per 1,000 women in each age-group), according to development region and federative entity, Mexico, 2009

Development region and federative entity	Abortion rate						
	Age-group						
	15-19	20-24	25-29	30-34	35-39	40-44	All
Mexico	**44.1**	**54.7**	**43.7**	**35.1**	**27.4**	**14.9**	**38.0**
REGION							
Region 1	63.3	85.9	64.7	48.7	38.4	19.1	54.4
Region 2	51.7	60.1	45.6	35.3	27.7	15.0	40.5
Region 3	45.9	53.6	44.9	38.0	29.9	18.4	39.9
Region 4	38.2	48.6	40.0	35.1	26.4	15.0	35.3
Region 5	31.0	39.6	32.1	24.2	17.7	8.5	26.5
Region 6	23.3	34.4	32.1	27.2	22.3	10.4	25.9
REGION 1							
Federal District	63.3	85.9	64.7	48.7	38.4	19.1	54.4
REGION 2							
Aguascalientes	63.8	53.8	46.4	42.3	35.5	23.9	46.0
Baja California	40.2	46.8	32.7	21.9	15.9	9.7	28.9
Baja California Sur	74.2	81.1	56.3	38.7	26.0	13.6	49.9
Chihuahua	34.1	26.4	25.6	17.4	12.8	8.7	21.5
Coahuila	77.3	65.3	46.8	33.1	22.3	11.4	44.6
Colima	54.1	72.5	64.4	45.3	36.2	19.8	50.3
Jalisco	46.1	55.4	43.4	38.6	33.7	20.1	40.8
México	63.3	85.9	64.7	48.7	38.4	19.1	54.4
Nuevo León	29.8	22.7	14.9	14.3	13.2	7.5	17.3
Sonora	49.6	57.1	40.4	31.5	23.3	11.0	36.7
Tamaulipas	41.6	49.3	41.2	32.5	22.4	12.0	34.0
Morelos	55.2	55.4	41.6	33.5	24.2	14.2	38.8
Quintana Roo	49.4	56.0	37.1	24.6	20.5	12.5	35.3
REGION 3							
Durango	46.6	57.5	52.7	48.7	33.1	19.7	44.3
Guanajuato	40.2	49.8	41.4	36.8	32.6	20.8	38.1
Querétaro	49.5	58.9	50.3	37.8	32.0	22.2	43.4
Nayarit	63.5	61.6	44.1	39.8	22.5	16.4	43.6
Sinaloa	49.2	45.5	37.6	29.7	19.4	9.9	33.4
Tlaxcala	34.8	53.1	39.4	32.9	24.7	15.9	34.8
Zacatecas	52.8	65.7	61.4	51.0	43.3	23.1	51.1
REGION 4							
Campeche	41.2	57.9	48.0	31.5	25.5	9.7	37.6
Michoacán	42.8	50.5	44.4	40.4	32.4	18.3	39.5
Puebla	33.8	44.3	35.2	31.4	22.0	13.4	31.4
San Luis Potosí	28.0	35.8	32.9	29.8	25.9	15.7	28.6
Tabasco	70.5	90.3	65.2	54.7	36.1	16.9	58.9
Yucatán	18.7	23.8	21.8	21.5	17.3	12.2	19.7
REGION 5							
Hidalgo	38.8	50.7	39.5	31.5	23.5	10.6	33.8
Veracruz	28.3	35.8	29.5	21.7	15.7	7.9	24.0
REGION 6							
Chiapas	24.2	36.7	29.6	23.7	20.5	10.0	25.5
Guerrero	23.4	29.7	32.3	27.6	24.2	9.8	25.2
Oaxaca	22.0	35.3	35.3	31.4	23.0	11.4	27.0

Source Reference 27.

APPENDIX TABLE 6. Measures of fertility, contraception and sexual activity among women of reproductive age, according to development region, Mexico, 1997, 2006 and 2009

Measure and year	Mexico	Development region					
		Most developed					*Least developed*
		1	2	3	4	5	6
FERTILITY							
Women 15–49							
Total fertility rate (lifetime births per woman)							
1997	2.7	2.0	2.7	2.9	2.9	2.6	3.2
2006	2.2	1.7	2.2	2.2	2.2	2.2	2.5
2009	2.1	1.7	2.1	2.1	2.1	2.1	2.3
CONTRACEPTION AND FERTILITY PREFERENCES							
Currently married women 15–49							
% using traditional method*							
1997	8.9	6.6	8.9	8.1	10.8	8.7	7.3
2006	4.7	4.6	4.3	4.7	6.3	3.9	3.6
2009	5.1	4.8	5.3	5.7	6.2	4.0	3.3
% using modern method†							
1997	59.6	71.3	64.2	63.4	51.3	60.1	44.9
2006	66.2	76.8	71.6	68.6	58.8	66.2	52.4
2009	67.4	74.9	70.8	66.1	62.0	69.2	56.1
% using any method							
1997	68.5	78.0	73.2	71.5	62.2	68.8	52.2
2006	70.9	81.4	75.9	73.3	65.1	70.0	56.0
2009	72.5	79.7	76.1	71.8	68.2	73.2	59.3
% with unmet need for any method of contraception‡							
1997	12.2	6.3	8.6	11.4	16.0	13.5	22.4
2009	12.0	8.1	9.8	11.2	14.6	11.9	21.1
For spacing	5.3	3.1	4.2	5.3	6.6	4.5	9.9
For limiting	6.7	5.0	5.6	5.9	8.0	7.4	11.2
% with unmet need for any method of contraception by age-group, 2009							
15–19	32.6	30.7	31.8	26.2	34.5	32.1	42.4
20–24	24.1	16.1	21.3	19.8	26.3	26.2	38.9
25–29	18.7	12.2	14.6	17.9	24.0	18.4	31.3
30–34	13.5	11.5	11.5	13.3	16.8	9.7	22.1
35–39	7.1	5.5	5.4	7.6	8.9	7.1	13.9
40–44	4.1	3.0	2.8	4.7	5.0	5.3	7.5
45–49	2.2	0.9	1.5	1.7	2.4	3.7	5.2
% wanting another child later (more than 2 years) or wanting no more, 2009	86.3	87.5	86.5	85.6	86.2	86.2	86.3
Unweighted N, 2009	52,097	1,891	20,560	11,622	9,894	2,925	5,205
CONTRACEPTION AND SEXUAL ACTIVITY AMONG YOUNG WOMEN 15–24							
CONTRACEPTION							
Currently married/in union							
% using traditional method*							
1997	9.4	6.0	8.7	8.2	11.8	11.7	7.3
2006	4.6	8.1	4.1	5.7	5.7	2.6	3.6
2009	4.7	3.8	5.3	5.1	5.9	2.9	2.8
% using modern method†							
1997	46.2	59.7	52.3	49.2	40.0	45.9	29.9
2006	48.4	61.5	55.1	45.3	43.6	48.1	37.3
2009	53.2	67.7	55.8	53.7	50.0	55.9	38.6

APPENDIX TABLE 6 (Continued)

Measure and year	Mexico	Development region					
		Most developed					*Least developed*
		1	2	3	4	5	6
% using any method							
1997	55.6	65.7	61.0	57.4	51.8	57.7	37.3
2006	53.0	69.6	59.2	51.0	49.3	50.6	40.9
2009	57.9	71.5	61.1	58.8	56.0	58.8	41.4
% with unmet need for contraception‡							
1997	22.6	18.2	16.3	22.1	25.3	25.9	36.7
2009	26.5	19.1	24.3	21.7	28.7	27.6	39.8
For spacing	17.6	11.4	15.0	16.4	20.5	17.8	27.2
For limiting	8.9	7.7	9.3	5.3	8.2	9.8	12.6
Unweighted N, 2009	8,442	250	3,233	1,956	1,629	457	917
SEXUAL ACTIVITY							
Never-married							
% ever had sex	20.6	35.7	22.1	18.7	16.2	21.8	10.8
% sexually active in last month	8.7	17.5	9.6	6.8	6.6	9.3	3.6
% ever had sex, but not sexually active in last month	11.9	18.2	12.5	11.9	9.6	12.5	7.2
Unweighted N, 2009	22,516	844	8,654	5,155	4,340	1,244	2,279
CONTRACEPTION AND SEXUAL ACTIVITY							
Never-married young women who were sexually active in last month							
% using traditional method*	4.4	2.0	5.5	5.6	2.8	5.5	0.7
% using modern method†	65.9	82.8	64.3	65.6	64.2	52.6	52.6
% using any method	70.3	84.8	69.8	71.1	67.0	58.1	53.3
% with unmet need for contraception§	27.4	14.6	27.8	24.9	30.2	39.4	44.7
For spacing	20.5	10.2	20.2	20.7	24.5	28.4	34.0
For limiting	6.9	4.4	7.6	4.1	5.8	11.0	10.8
Unweighted N, 2009	2,026	148	926	392	343	111	106
Never-married young women with sexual experience, but not in last month							
% using traditional method*	1	1	1	1	1	2	1
% using modern method†	16	17	18	16	13	12	10
% using any method	17	17	19	17	14	14	11
Unweighted N, 2009	2,772	154	1,104	676	470	168	200

*Rhythm or calendar method (periodic abstinence), withdrawal and lactational amenorrhea method (LAM). †The pill, sterilization (male and female), injectables, implants, patch, IUD, male condom, diaphragm, and spermicides and other nonhormonal methods. ‡A married woman has an unmet need for contraception if she is fecund, does not want a child in the next two years or does not want any (more) children, yet is not using a contraceptive method; or is currently pregnant or amenorrheic and did not plan to or want to become pregnant and was not using a contraceptive method at the time she conceived. We assume that married women are sexually active. §A never-married women has an unmet need for contraception if she is sexually active (had sex in the past month), does not want a child in the next two years or does not want any (more) children, yet is not using a contraceptive method; or if she is currently pregnant and did not plan to or want to become pregnant, yet was not using a contraceptive method at the time she conceived.

Notes CONAPO introduced a new method of calculating unmet need as of 2009; however, to permit comparisons over time, our results consistently use the earlier definition. We exclude unmet need data for 2006 because of problems with some components of the measurement.

Sources Total fertility rates—references 16 and 79; all other data—reference 67 and special tabulations of the Encuestas Nacionales de la Dinámica Demográfica (ENADIDs) of 1997 and 2006.

APPENDIX TABLE 7. Measures of residence, contraception, fertility preferences and sexual activity according to a quality of care access indicator, Mexico, 2009

Measure	Level of access to quality health services*		
	Poor	Medium	Good
PLACE OF RESIDENCE			
All women 15–49			
% living in urban areas	64.6	85.7	95.1
Unweighted N	34,603	32,406	25,435
CONTRACEPTION AND FERTILITY PREFERENCES			
Currently married women 15–49			
% using traditional method†	5.3	4.5	5.6
% using modern method‡	61.5	72.0	72.3
% using any method	66.9	76.5	77.9
% with unmet need for any method of contraception§			
15–19	34.0	30.1	29.2
20–14	29.7	19.7	17.0
25–29	24.3	14.2	13.8
30–34	17.1	11.8	9.5
35–39	9.9	6.2	3.8
40–44	5.9	3.2	2.4
45–49	3.5	1.3	1.4
% with unmet need, all married women 15–49	16.2	9.7	7.1
For spacing	7.0	4.4	3.1
For limiting	9.2	5.3	4.0
% wanting another child later (more than 2 years) or wanting no more	87.5	86.3	84.2
Unweighted N	22,061	17,484	12,552
Currently married young women 15–24			
% using traditional method†	5.0	4.2	4.8
% using modern method‡	46.7	59.3	64.2
% using any method	51.7	63.5	69.0
% with unmet need for any method of contraception§	31.2	22.2	18.6
For spacing	20.5	14.4	14.0
For limiting	10.7	7.8	4.7
Unweighted N	4,280	2,861	1,301
CONTRACEPTION AND SEXUAL ACTIVITY			
Never-married women 15–24			
% ever had sex	16.0	20.0	26.3
% sexually active in last month	5.5	8.7	12.3
Unweighted N	6,500	8,883	7,133
Never-married women 15–24, sexually active in last month			
% using traditional method†	4.3	5.1	3.8
% using modern method‡	47.6	64.0	76.6
% using any method	51.9	69.0	80.4
% with unmet need for contraception**	43.0	28.4	18.8
For spacing	25.4	21.8	16.9
For limiting	17.6	6.6	2.0
Unweighted N	381	756	889

*See data sources box for the definition of this variable and details on how it was constructed. †Rhythm or calendar method (periodic abstinence), withdrawal and lactational amenorrhea method (LAM). ‡The pill, sterilization (male and female), injectables, implants, patch, IUD, male condom, diaphragm, and spermicides and other nonhormonal methods. §A married woman has an unmet need for contraception if she is fecund, does not want a child in the next two years or does not want any (more) children, yet is not using a contraceptive method; or is currently pregnant or amenorrheic and did not plan to or want to become pregnant and was not using a contraceptive method at the time she conceived. We assume that married women are sexually active. **A never-married woman has an unmet need for contraception if she is sexually active (had sex in the past month), does not want a child in the next two years or does not want any (more) children, yet is not using a contraceptive method; or if she is currently pregnant and did not plan to or want to become pregnant, yet was not using a contraceptive method at the time she conceived.

Note CONAPO introduced a new method of calculating unmet need as of 2009; for reasons of data comparability, our results instead use the earlier definition. **Source** Reference 67.


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