The report of the International Conference on Population and Development issued the following directive:

“Recognize that appropriate methods for couples and individuals vary according to their age, parity, family size-preference and other factors, and ensure that women and men have information and access to the widest possible range of safe and effective family planning methods in order to enable them to exercise free and informed choice.”

The reality in most countries, however, is far different. Most countries offer only a limited choice of contraceptive methods, and couples cannot easily choose the method that best suits their reproductive needs. In fact, international program effort scores for 1994 showed that large proportions of people in most developing countries did not have ready access to a variety of contraceptive methods. Couples had essentially no access to the IUD in 30 countries, no access to female sterilization in 37 and no access to vasectomy in 61. Many African countries had low access scores on almost every method. Five years later, in the 1999 ratings for 88 countries, only 65% of countries offered the pill to at least half their population, 54% the IUD, 42% female sterilization, 26% male sterilization and 73% the condom.

Substantial evidence indicates that a restricted choice of contraceptive methods has constrained the opportunity of individual couples to obtain a method that suits their needs, resulting in lower levels of contraceptive prevalence. One study noted that in Taiwan, each new method seemed to add another layer of use to existing prevalence; similar increases were evident in South Korea, Thailand and Hong Kong. A second study found that broadening the choice of contraceptive methods increased overall contraceptive prevalence in Matlab, Bangladesh, where household provision of injectables in early 1977 helped raise contraceptive prevalence from 7% to 20%, the introduction of tubectomy services in 1978 helped increase prevalence by an additional 10 percentage points, and household insertion of IUDs in 1981 elevated prevalence yet further. Jain has estimated that the widespread addition of one method to

Context: For all persons to enjoy a choice among contraceptive options, a range of methods must be readily available. Yet measures of access show serious deficits that depress use of each method. Countries differ both in the number of methods offered and the extent to which each is made available. Information is needed on how these factors have changed over time and how they have affected contraceptive use overall and use of individual methods.

Methods: Patterns of contraceptive use are derived from data from national surveys, and levels of access to four methods (female sterilization, the IUD, the pill and the condom) are measured by estimates from cycles of a program effort study of the proportion of couples for whom each method is available, as of 1982, 1989, 1994 and 1999. The analysis focuses on the relationship between access to contraceptives and patterns of use.

Results: In all four cycles of the program effort study, the mean prevalence of the four methods rises with mean access. For example, mean prevalence in 1994 and 1999 was close to 12% in countries with very low access, compared with 44% in those with high access. Prevalence is highest in countries where access to all methods is uniformly high. In 1994, for example, mean prevalence was 12% in countries where mean availability was high and diversity in the availability of individual methods was low, compared with 9% in countries where mean availability was high and access to individual methods varied considerably. Between 1982 and 1994, the number of countries with uniformly high access rose from nine to 23, while the number with uniformly low access declined from 23 to nine. At the lowest level of mean availability, the condom and the pill contribute most to availability (40% and 36%, respectively), but at the highest level, the contributions of the four methods equalize at 22–27% each. The situation for prevalence is similar: The pill’s share at the lowest level of availability is 67%, compared with 31% at the highest level, where it is surpassed by female sterilization (36%).

Conclusions: Full choice among a variety of contraceptive offerings is yet to be attained in many countries. Its absence restricts personal access to each method as well as the use of all methods in the population. To the extent that the ability to choose satisfactory contraceptive protection depends on ready access to multiple methods, a clear mandate exists for greater programmatic attention to the provision of a full range of methods.
the options available in a country would be associated with an increase of 12 percentage points in contraceptive prevalence.7 Behind these figures lie increased numbers of satisfied couples, as well as fewer unplanned pregnancies, induced abortions and unwanted births.

This article is devoted to the issue of choice, which in part depends on the widespread availability of a variety of contraceptive methods. We examine the overall level of use and the diversity of use of contraceptive methods in relation to their measured availability. Although it is beyond the scope of this article to deal with important issues of client treatment, policymakers and planners should consider them along with the issues of method availability addressed here.

DATA AND METHODOLOGY
Availability of Contraceptive Methods

This article uses the ratings of method availability obtained in studies of national family planning programs conducted in 1982, 1989, 1994 and 1999.8 In each cycle, 30 features of program effort were measured, including some that focused specifically on the availability of contraceptive methods to the general population. Four modern methods that are provided through large-scale programs—the condom, the pill, the IUD and female sterilization—are included here. Others, such as the implant, the injectable and male sterilization, are omitted either because separate estimates are unavailable in the effort ratings or because, like the implant and male sterilization, the methods exhibit very low levels of use and availability.*

Contraceptive Use

Data on contraceptive use are taken from national surveys, including the World Fertility Surveys (WFS), Contraceptive Prevalence Surveys (CPS) and Demographic and Health Surveys (DHS). The key indicator is the percentage of couples using each method at the time of the survey, based on responses by married or cohabiting women of reproductive age (usually those aged 15–49). Having data from multiple surveys over time for a given country allows us to estimate contraceptive use, by method, at approximately the same dates as the effort scores, by interpolating between survey dates or, in some cases, by extrapolating from historical trends. The prevalence information relates to use for family planning purposes, thus, condom use for protection against sexually transmitted diseases is very likely underestimated.

Availability Measures

Sixty-four countries had information on program effort scores for all three years (1982, 1989 and 1994), and also had survey estimates for contraceptive prevalence. (These 64 countries are home to 91% of all women aged 15–49 who live in the 110 developing countries with populations of more than one million each. Only 47 countries had both program effort estimates and recent survey estimates for 1999, for certain analyses, we combine the 1994 and 1999 scores and use the total of 64 units of observation.

Method availability is measured through the program effort scores as the percentage of the population having ready and easy access to each contraceptive method.7 The percentage for each method comes from respondents’ estimates for the urban and rural sectors, which we combined with population weights to obtain the national figure.

Method availability is distinct from method use. The condom, for example, may be easily available but little used; in fact, its level of use for family planning has usually been quite low. The proportion of women relying on sterilization, on the other hand, can rise to a substantial figure over time, although its availability at any one time may be modest. Respondents to the program effort questionnaire were cautioned not to confuse availability with actual use, but to estimate the percentage of the population having access without reference to the percentage that might be using it.

Analytic Approach

In the following sections, we examine the association between method access and prevalence by first summarizing improvements in availability and prevalence over time, by region, by using all methods to relate mean prevalence to mean availability, by relating availability and prevalence for each method alone; by relating prevalence simultaneously to both the level and the diversity of method availability; and by documenting the relative contribution of each method to both availability and prevalence over time, subject to the overall availability level.

RESULTS
Access and Prevalence Improvements

Over the period 1982–1999, the average availability score for the group of four methods included here rose from 1.5 to 2.6, the equivalent of access for 30–52% of the population. The availability of each individual method also rose substantially, from 25% to 35% for female sterilization, from 34% to 61% for the pill, from 26% to 50% for the IUD and from 34% to 63% for the condom.

Regional differences are considerable, with availability greatest in East Asia and least in Sub-Saharan Africa—especially the francophone countries. The other regions are clustered in a middle range. East Asia attained a high level of availability early in the study period and experienced little change thereafter; on the other hand, Sub-Saharan Africa shows recent improvements, although at fairly low levels. Condom availability seems to have increased more sharply in Africa and Asia than in Latin America, while the availability of female sterilization appears to have risen most in Latin America.

Like availability, the prevalence of contraceptive use has risen markedly over the decades. The latest United Nations
A recent review, using surveys that cover 85% of the developing world’s population, shows that “almost all of the less developed countries with trend data experienced an increase in the level of contraceptive use.” Over an average period of 9.5 years, use increased by at least one percentage point per year, or 10 points per decade, in more than two-thirds of the countries and by two points or more annually in 11% of the countries. By region, the UN’s medium estimate is highest for East Asia (83% of couples using a method), followed by Latin America and the Caribbean (66%), other Asian regions (44%), northern Africa (42%) and Sub-Saharan Africa (14%).

### Mean Availability and Mean Prevalence

In all four cycles of the program effort study (1982–1999), mean prevalence and mean availability are closely and positively related (Figure 1). The relationship persists as countries improve in both variables over the four years—that is, as they shift upward and to the right. This finding is consistent with the hypothesis that better choice, via easier access to methods, leads to use by more couples, which may imply greater satisfaction and fewer unwanted pregnancies.

The 64 countries in the study are shown in Figure 2, which classifies them jointly by average availability and prevalence. The overall prevalence in the 64 countries was 32%, rising from 6% in the very low prevalence countries to 59% in the high-prevalence nations. (These figures are for only the four modern methods included in the study, so they are lower than totals for all methods, including traditional methods.) Mean prevalence increased with access; it was only 12% in countries with very low access, compared with 44% in countries with high access.

The data for 47 countries pertain to 1999 and those for 17 countries pertain to 1994; because patterns in 1994 and 1999 were similar, we used all 64 units of observation. We divided the 64 countries into four availability groupings of equal size, as well as four prevalence groupings of equal size; the two sets of groups were then cross-classified. This procedure places 16 countries in each row and in each column; if there were no association between availability and prevalence, the countries would be evenly distributed across the cells.

In fact, most countries cluster along the diagonal in the table, from very low values to high values on both characteristics. Fifty-three of the 64 countries either lie in cells directly on the diagonal or in adjoining ones; only 11 are in cells that are further away. Not unexpectedly, most countries in the upper-left cell (i.e., those with very low prevalence and very low availability) are in Sub-Saharan Africa, whereas most of the countries in the lower-right cells (those with high prevalence and high availability) are in Latin America and Asia. When the original values for average availability and prevalence are used, the correlation is 0.41. For each country, the average prevalence for the four modern methods in the study appears in the cells. As one would expect, it is lower than published figures for all methods (including traditional methods).

One question is whether the respondents who rated the availability of each method might have been influenced by their impressions of prevalence levels; if so, the assumption of independent measurements might be compromised and the correlation between availability and prevalence.
The correlations in question necessarily reflect reality to some extent, because use cannot exist without access. The use level sets a minimum level for what access must be; moreover, access to a contraceptive method always exceeds its use, because many couples who could use the method prefer, and use, other methods. The true degree of association between access and use is as likely to be obscured or heightened by any nonindependence between the measures. The data for different countries are reported by different respondents, who would vary in the access rating they might be affected. However, explicit instructions are given in the program effort questionnaire that access measures are not the same as actual use and that the two are not to be confused. The respondent is asked to estimate the percentage of the population with access to each method, without regard to the level of use. Each method is listed individually, with separate entries for the rural and urban sectors.

One check on the accuracy of the availability information is afforded by DHS survey information on the percentage of women who know of a source for a given method. That measure is a more objective indicator, and knowledge of a source for a particular method should correspond generally to the actual availability of the method. Some DHS country reports do not include source information, but it is available from data tapes for 20 country surveys conducted between 1990 and 1993.11 Correlations for 1994 between availability and knowledge of a source for the four modern contraceptive methods are highly significant, at 0.39 for female sterilization and the pill and 0.47 for the IUD but only 0.10 for the condom. Each correlation is higher when the 1989 availability data are used (0.43, 0.46, 0.65 and 0.17). These patterns, in both years, give partial support to the usefulness of the availability ratings. Results from one study cycle to the next have shown a consistency in the associations, even as the levels of program effort have risen.12

The correlations in question necessarily reflect reality to some extent, because use cannot exist without access. The use level sets a minimum level for what access must be; moreover, access to a contraceptive method always exceeds its use, because many couples who could use the method prefer, and use, other methods. The true degree of association between access and use is as likely to be obscured or heightened by any nonindependence between the measures. The data for different countries are reported by different respondents, who would vary in the access rating they
Assumption throughout is one of an independent estimate of access, quite apart from the level of use, and any weakening of this assumption is thought to be small in comparison with the overriding dependence of use on access.

**Availability and Prevalence of Methods**

Except for the condom, the use of each method is highest where the availability of that method is high. For example, in the countries with greatest use of the pill (36–44%), the level of availability is 76–80%. Likewise, the highest prevalence of female sterilization (35–41%) is found in countries where 71–80% of the population have access to the method.

The patterns shown in Figure 3 reflect a crowding of some countries at the maximum value, which as noted is 80–100% of the population. Figure 3 is restricted to 1999; in earlier years, the patterns were similar, but countries were clustered at lower values of both availability and prevalence.*

Except for the results for the condom, this method-specific examination of availability and prevalence supports the results shown in Figure 1 for the means of availability and prevalence of the four methods together.

**Prevalence Related to Availability**

When the mean level of availability is in the middle range, the diversity (variation) among methods can be either great or small. That is, the same mean can result from all four methods being equally available or from variation among them—e.g., with two at high levels and two at low levels. In the first case, some of the population has basic access to all four methods; in the second case, the population has more access to two methods, but less to two others. Also, depending on how the various methods are geographically distributed, access to individual methods may vary across subgroups, as when urban residents live near facilities that offer the IUD and sterilization and rural residents are served by programs that distribute the pill and the condom.

Here we explore how prevalence relates to the interplay of the level and diversity of availability, with diversity measured by the standard deviation across the four methods. We begin by comparing countries that have a low mean for the availability of all four contraceptive methods with countries that have a high mean. The preferred situation is relatively high mean availability and a low standard deviation, meaning that all methods are easily and uniformly accessible. The reverse case is the unfortunate combination of a low mean and a low standard deviation, indicating that all methods are uniformly unavailable. Contraceptive prevalence is expected to be quite high in the first instance and quite low in the second. (Note that a very high or a very low mean can occur only with a very low standard deviation, because diversity among methods precludes extreme averages.)

For couples to enjoy a good choice, they need ready access to a variety of methods; in that case, each method will...
find its own subgroup of users in the population. That situation should in turn lead to substantial prevalence values for each method, and therefore a high total, because most couples would be able to choose a method that fits their stage of life and their reproductive health status and reflects their experience with other methods.

To test this concept, we constructed a two-by-two table in which mean contraceptive availability in a country is classified as either low or high, and the standard deviation is also classified as low or high (Table 1). We used data for 1982, 1989 and 1994 because the greater number of countries (64) provides more stability than the number for 1999 (47). For each year, the 64 countries are divided evenly above and below the median for availability; the procedure is repeated using the median for the standard deviation, so that the numbers of observations for analysis are balanced. This places 32 countries in each row, by year, and 32 countries in each column, by year. We expect that prevalence will be highest where mean availability is high and the standard deviation is low (upper-right quadrant) and that prevalence will be lowest where both the mean and the standard deviation are low (lower-right quadrant). In fact, prevalence values correspond to these expectations in all three years. In addition, as expected, the prevalence values rise over time.

The table also reveals trends over time in levels of and diversity in availability. In the top half of Table 1, the distribution of countries shifts: In 1982, 23 of the 32 countries with high mean availability had a high standard deviation, but by 1989, 22 had a low standard deviation. This trend implies that availability became more uniform across methods as access to the less readily obtained methods rose to match the already high level of access to the others. Also, the favorable upper-right quadrant gained members between 1982 and 1989, while the unfavorable lower-right quadrant lost members, reflecting a movement toward uniformly high access, a pattern that held in 1994.

Table 1 isolates the various combinations of high and low values, but the limited sample size makes it necessary to use broad categories. Multiple regression analyses indicate that total availability is a more important determinant of prevalence than the standard deviation; however, high total availability automatically incorporates a low standard deviation because values for all methods must be uniformly high.*

*In addition, the role of the standard deviation is masked by the assumption of linearity in the regressions. The standard deviation is low at both high and low values of the mean, and the interaction is an important element. The standard deviation is large only at intermediate values of the mean. Scattergrams confirm a marked U-shaped (upside down) relation between the mean and the standard deviation for each of the four contraceptive methods.
In summary, Table 1 captures the essence of the situation, that the special combination of high availability and low standard deviation best predicts high prevalence of use. Likewise, personal choice is maximized in an environment that gives uniformly high access to several contraceptive methods.

**Contribution of Individual Methods**

- **Availability.** To analyze the relative contribution of the various methods to the availability score, we divided the 1994 data set with 64 countries into four access groupings: Level 1 (those where mean availability is less than 20%), Level 2 (where it is 20–39%), Level 3 (where it is 40–59%) and Level 4 (where it is 60% or greater). The contribution of each method is simply its share of the total—what is each method’s access taken as a percentage of the total access for all methods (Figure 4, page 37).

  For Level 1 countries, the pill and the condom—both supply methods—contribute most to the mean availability score (36% and 40% of the total, respectively). The IUD and female sterilization together contribute only about 24% to the score. At Level 2, the relative contributions of the pill and the condom parallel those seen at Level 1, while the contribution of the IUD decreases and that of female sterilization increases (from 3% to 14% of the total). At Level 3, the contributions of female sterilization and the IUD both increase. Finally, at Level 4, the four methods reach a fairly even balance, at 22–27% for each. This balance reflects an improved set of choices for couples in countries at Level 4, and it shows the dependence of total availability on the presence of multiple methods.

- **Prevalence.** Figure 4 also shows the contribution of each method to total prevalence at each availability level. It is interesting to compare the two patterns: The contributions of each method to availability and prevalence agree more closely as mean availability increases. The pill contributes

  

*The prevalence of every method can increase in the general population even during a shift in the shares of use. The changing shares reflect only the relative growth rates among the methods.
rises, access to the IUD and female sterilization increases. While concentrating on one or two methods may be simpler administratively at the start and provide couples with early access to at least something, it also restricts full choice in the middle phase of program development.

The large difference between method availability and use in low-prevalence countries indicates that other factors act as brakes on use. This suggests a continuing need to examine nonaccess barriers, encompassing the whole range of implicit and explicit policies. These obstacles include excessive medical barriers, unneeded eligibility criteria, poor public information, and lack of training or biases among program staff regarding certain methods. In some cases, an entrenched program subculture limits clients’ choices to only one or two favored methods, leaving unserved the persons for whom these methods do not work. Clearly, public policy needs to address not only the variety of contraceptive methods that are present in the environment, but also the many barriers that impede their use.

REFERENCES
10. Ibid.

**RESUMEN**

Contexto: Para que todas las personas puedan disfrutar del uso del anticonceptivo de su elección, se debe tener a disposición una amplia gama de métodos. Todavía las medidas de acceso presentan serias limitaciones que limitan el uso de cada método. Los países difieren tanto con respecto al número de métodos que se ofrecen como la disponibilidad de cada uno. Se necesita información acerca de la forma en que estos factores han cambiado a través del tiempo y sobre la manera en que han afectado el uso de anticonceptivos en general y de algunos en particular.

Métodos: Las pautas de uso de anticonceptivos se determinan en base a los datos obtenidos en las encuestas nacionales y los niveles de acceso a cuatro métodos (esterilización femenina, el DIU, la píldora y el condón) son medidas de acuerdo con el porcentaje estimado de parejas para las cuales cada método se encontraba disponible en 1982, 1989, 1994 y 1999. El análisis se centra en la relación que existe entre el acceso a los anticonceptivos y las pautas de uso.

Resultados: En los cuatro ciclos del estudio de esfuerzo del programa, la prevalencia media de los cuatro métodos aumenta de acuerdo con el promedio de acceso. Por ejemplo, la prevalencia media en 1994 y 1999 fue de cerca del 12% en los países donde el acceso era muy bajo, en comparación con el 44% en aquellos que ofrecían un acceso elevado. La prevalencia presentó su más alto nivel en los países donde el acceso a todos los métodos era uniformemente elevado. En 1994, por ejemplo, la prevalencia media fue del 12% en países donde la disponibilidad media era elevada pero la diversidad en la disponibilidad de determinados métodos era baja, en comparación con una prevalencia del 9% en países donde la disponibilidad media era elevada y el acceso a determinados métodos variaba considerablemente. Entre 1982 y 1994, el número de países con un acceso elevado uniforme aumentó de nueve a 23, en tanto que el número con acceso uniformemente bajo disminuyó de 23 a nueve. En los más bajos niveles de disponibilidad media, el condón y la píldora contribuyeron en mayor medida a la disponibilidad (40% y 36%, respectivamente), aunque al más elevado nivel, las contribuciones de los cuatro métodos se igualaron en 22–27% cada uno. La situación con respecto a la prevalencia es similar: el porcentaje que le corresponde a la píldora al más bajo nivel es del 67%, en comparación con el 31% al más alto nivel, donde la píldora y la esterilización femenina (36%).

Conclusiones: En muchos países aún no se ha logrado disponer de una amplia gama de anticonceptivos. Esta carencia restringe el acceso personal a cada método, así como el uso de anticonceptivos en general. Hasta el punto que la posibilidad de optar por una protección anticonceptiva satisfactoria depende del fácil acceso a métodos múltiples, existe un claro mandato de prestar una mayor atención programática a contar con una amplia gama de métodos.

**RÉSUMÉ**

Contexte: Pour que chacun puisse bénéficier d’un choix d’options contraceptives, une gamme de méthodes doit être aisément accessible. Les mesures d’accès démontrent cependant de graves lacunes, au détriment de la pratique de chaque méthode. Le nombre de méthodes proposées et la mesure de leur disponibi-
lité différent d’un pays à l’autre. L’évolution de ces facteurs au fil du temps et leurs effets sur la contraception en général et sur la pratique de méthodes individuelles doivent être documentés. **Méthodes:** Les tendances de la pratique contraceptive sont dérivées des données d’enquêtes nationales, et les niveaux d’accès à quatre méthodes (la stérilisation féminine, le stérilet, la pilule et le préservatif) sont mesurés par estimation de la proportion des couples pour lesquels chaque méthode est disponible, à compter de 1982, 1989, 1994 et 1999. L’analyse se concentre sur le rapport entre l’accès aux contraceptifs et les tendances d’usage. **Résultats:** Aux quatre cycles de l’étude d’effort programmatoire, la prévalence moyenne des quatre méthodes augmente en même temps que l’accès moyen. Ainsi, la prévalence, en 1994 et 1999, était proche de 12% dans les pays caractérisés par un accès très limité, par rapport à 44% dans ceux offrant un accès très élevé. La prévalence atteint les plus haut niveaux dans les pays où l’accès à toutes les méthodes est uniformément élevé. En 1994, par exemple, la prévalence moyenne était de 12% dans les pays à disponibilité moyenne élevée et faible diversité de méthodes individuelles, par rapport à 9% dans ceux où la disponibilité moyenne était élevée mais où l’accès aux méthodes individuelles était largement variable. Entre 1982 et 1994, le nombre de pays offrant un accès uniformément élevé est passé de neuf à 23, tandis que le nombre de ceux présentant un accès uniformément faible baissait, de 23 à neuf. Au plus faible niveau de disponibilité moyenne, le préservatif et la pilule contribuent le plus à la disponibilité (40% et 36%, respectivement), mais au niveau supérieur, la contribution des quatre méthodes s’égaleise, entre 22 et 27% chacune. On observe une situation semblable pour la prévalence: la part de la pilule au plus faible niveau de disponibilité est de 67%, par rapport à 31% au plus haut niveau, où la stérilisation féminine la surpasse (36%). **Conclusions:** L’offre d’un choix complet de contraceptifs varié n’est pas encore atteinte dans de nombreux pays. Cette absence limite l’accès personnel à chaque méthode aussi bien que la pratique globale des méthodes au sein de la population. Dans la mesure où la capacité de choisir une protection contraceptive satisfaisante dépend d’un accès aisé à une multiplicité de méthodes, les programmes se doivent clairement d’accorder une plus grande attention à la fourniture d’une gamme complète de méthodes.

**Acknowledgments**

This research was conducted under the POLICY I and POLICY II projects of The Futures Group International, funded by the U.S. Agency for International Development, contract HRN-C-00-00-00006-00. The authors are grateful to William L. Winfrey for statistical advice and thank Ratha Loganathan for assistance with the data analysis.

**Author contact:** j.ross@tfgi.com

---

**CALL FOR PAPERS**

The legal status of abortion varies widely around the world, but health care providers in all countries share a need for information on treatment for complications from spontaneous or induced abortion. In response to this need, the September 2003 issue of International Family Planning Perspectives will include a special section on postabortion care as part of the journal’s “Issues in Perspective” series. We are seeking papers on provision of postabortion care; integration of family planning counseling and services with postabortion care; the technology, training and costs involved in initiating services; quality of care; and access issues. We will consider commentaries as well as qualitative and quantitative research.

To be eligible for the special section, papers should be no more than 3,000 words and must be received by November 1, 2002. Authors should follow the journal’s style, as detailed in the Guidelines for Authors, which can be found in this issue and on our Web site, www.guttmacher.org/guidelines.

Please send submissions to Patricia Donovan, Editor in Chief, International Family Planning Perspectives, The Alan Guttmacher Institute, 120 Wall Street, New York, NY 10005. Questions about the special section should be addressed to Patricia Donovan at pdonovan@guttmacher.org.

**Deadline: November 1, 2002**