# The Open Birth Interval:
A Resource for Health Programs and Development Policy

John Ross, Kristin Bietsch, and Emily Sonneveldt
### Track20 Project, Avenir Health

Introduction

The simple question, "How long has it been since your last birth?" differentiates female respondents to household surveys by the age of their youngest child. This "open interval" shows a characteristic pattern running along such stages as postpartum needs, exposure to unplanned pregnancies, contraceptive use, unmet need, and infecundity. Different intervals are also associated with life stages; for example, an older youngest child may translate for the woman into decreasing obligations related to pregnancy and child care, with profound implications for her personal circumstances and freedom of action. The open interval distribution is related to women's employment and closely connected to the fertility rate, based upon the 232 DHS surveys in 74 countries used here. Policy leaders and program managers should examine the open interval data in national surveys to determine the levels and trends in the numbers of women at various stages after birth. This analysis can inform economic policies and help gauge the changing personnel, funding, and management requirements for health programs.

Results

Open Interval Distribution for Nigeria and Indonesia
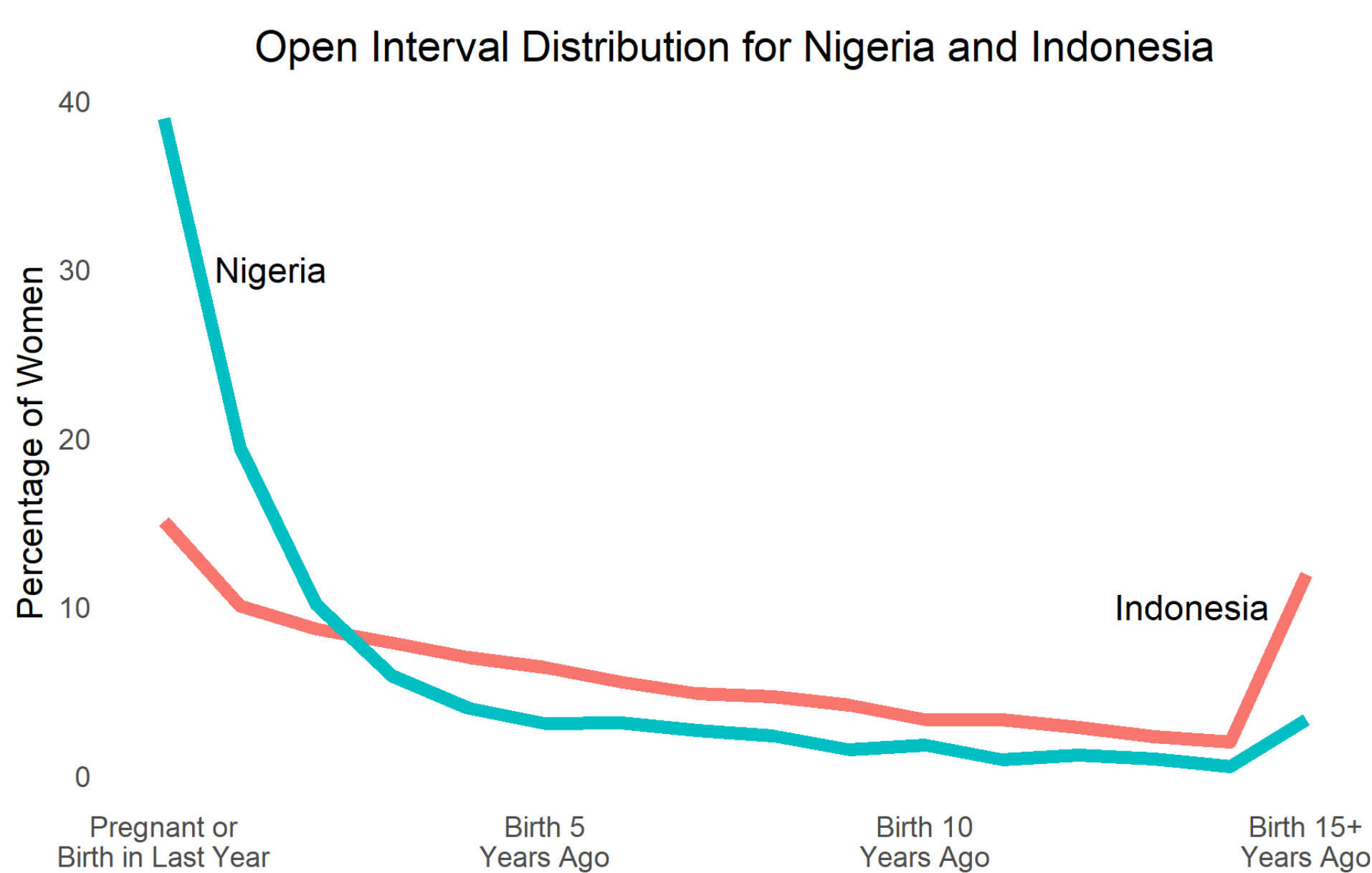
Nigeria and Indonesia show the contrasts between a high-fertility country with women clustered close to a recent birth, and a mid- to low fertility country with a broader spread. There are more Nigerian women closer to a recent birth than in Indonesia; this difference can also be seen in the resource demands for pregnancy, delivery, and early child care in the two countries.

The general pattern for all 74 countries is that one fourth of married women are either pregnant or have an infant below age one. That share drops quickly, to one in seven with a child in its second year, falling regularly to very low percentages. Only 8% of women are in the final interval with their youngest child aged 15 or older.

Changes Across Intervals, 74 Countries, Latest DHS Surveys
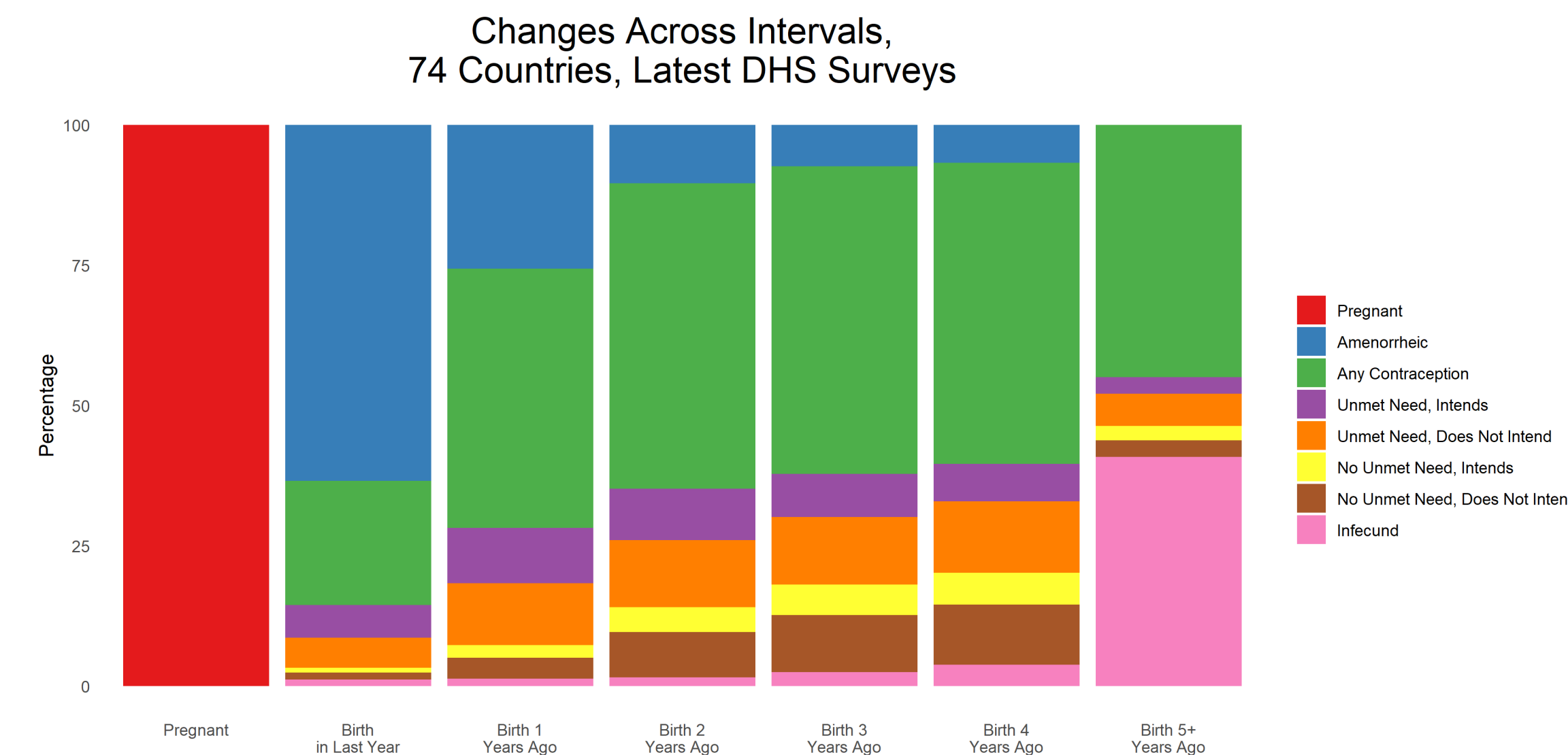
The above figure separates women in each interval into mutually exclusive categories, which sum to 100%. After pregnancy, women reporting amenorrhea make up a significant portion in the first year, but that declines rapidly. Then, contraceptive use increases, and it remains a large share in all intervals. Also indicated are women with an unmet need and those without unmet need (both of these groups are further divided by whether they intend to use contraception in the future or not).

Total unmet need is small in the first year, but it is substantial in each following year until the final interval. Total intention to use is less than total unmet need, but it is steady after the first year at a near constant level before shrinking in the final interval. Notably, the largest of the four subgroups is women classified with unmet need who say they do not intend to use a method in the future, which underscores the importance of watching trends for intention to use regardless of unmet need. Infecundity is not significant until the final interval.

Bangladesh: Distribution of Women by the Open Interval
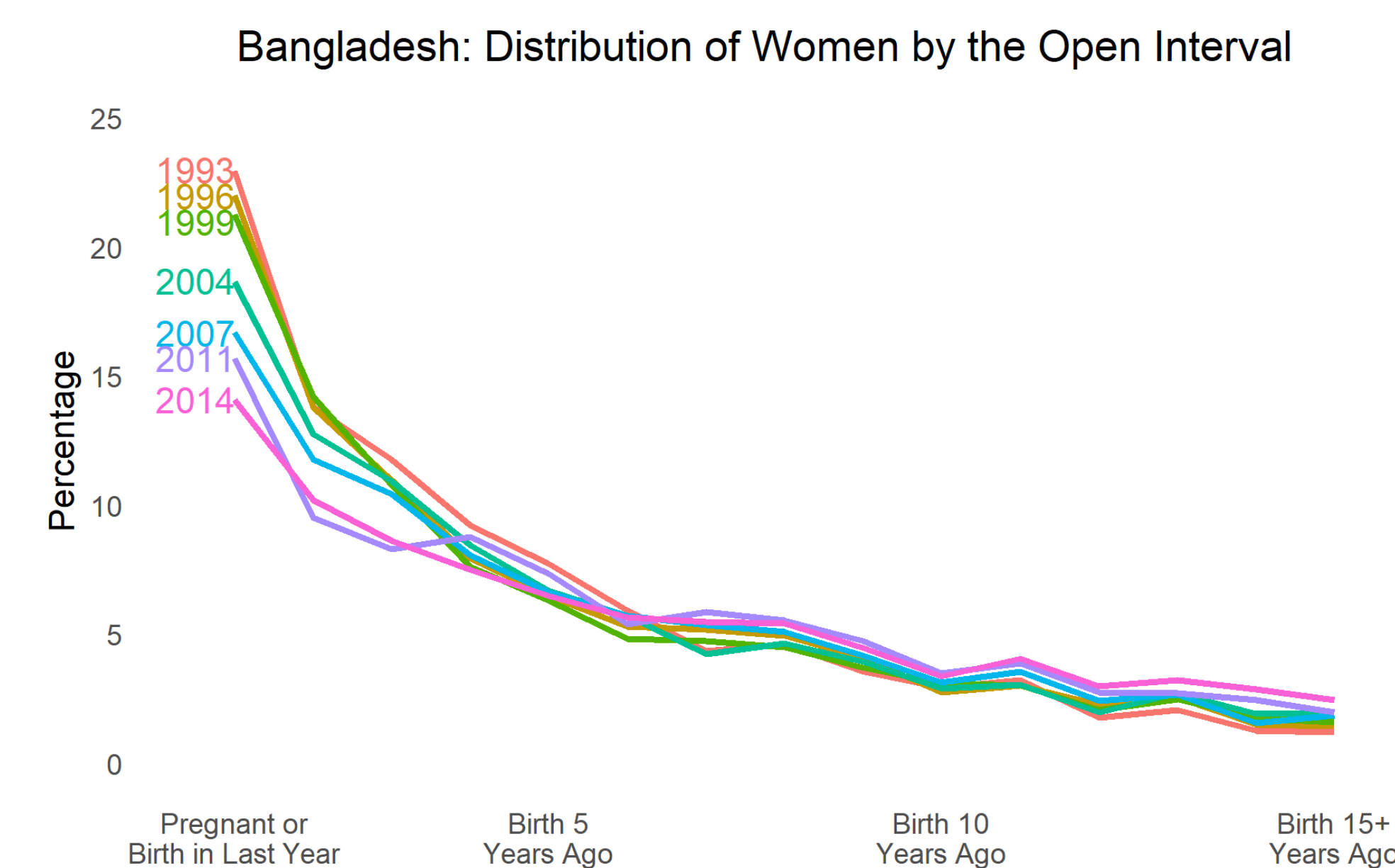
The percentage of women in Bangladesh either pregnant or within a year of delivery has fallen from about 25% in 1993 to about 13% in 2014. This reduction by half carries implications for a health ministry's planning to cover supplies, clinic loads, personnel decisions, and budgetary allocations.

Changes During the First Year After Birth, 74 Countries, Latest DHS Surveys
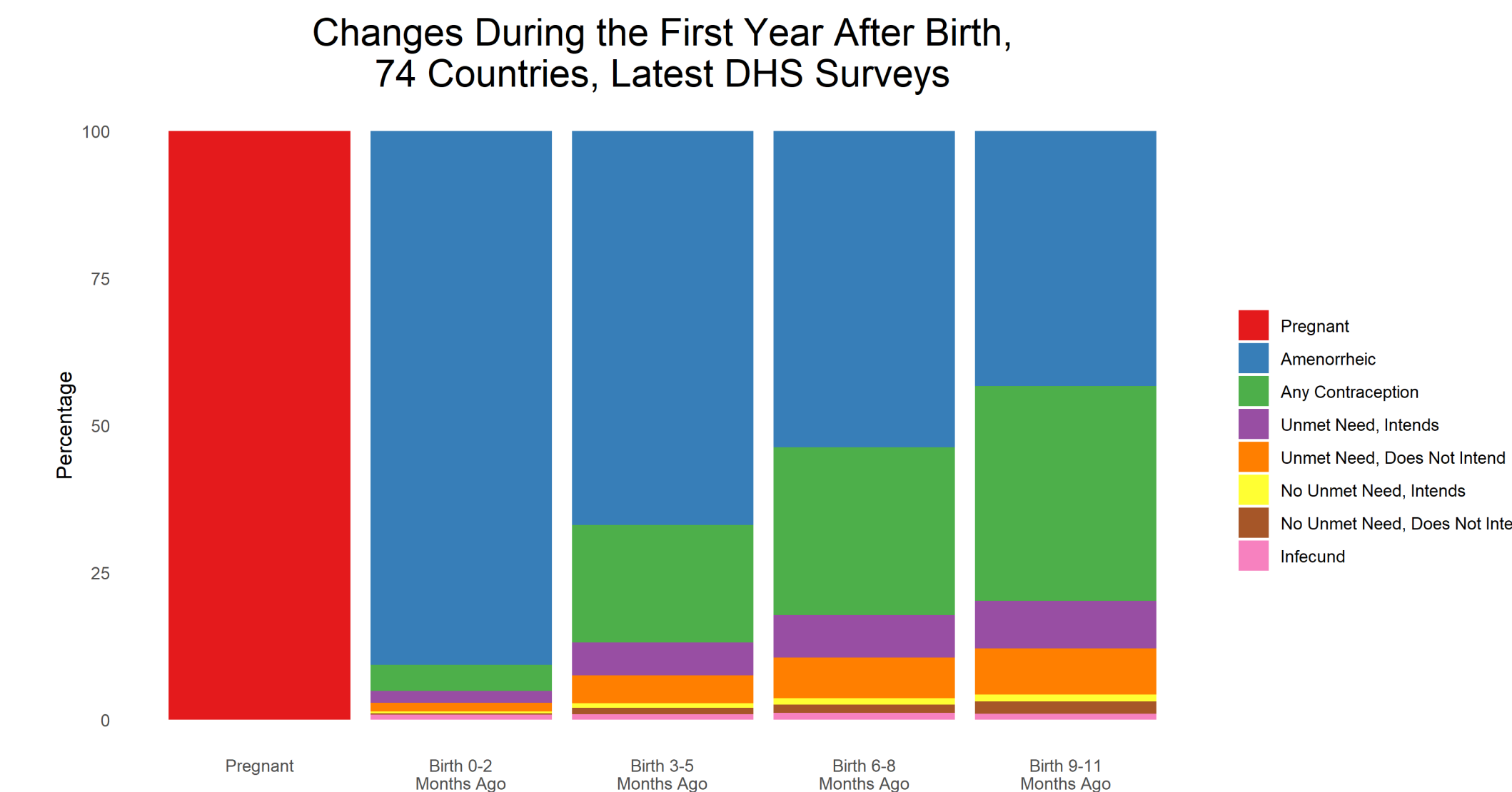
Narrowing down on changes within the first year shows rapid transitions in the mix of statuses. The above figure separates out pregnant women in the first bar, and shows the dominance of amenorrhea in the first quarter after birth. Its share shrinks through the following quarters, being largely replaced by contraceptive use. The two unmet need segments grow, leaving very small shares for women with no need and no intention to use, and for infecundity.

Contraceptive Method Mix by Open Interval
74 Countries, Latest DHS Surveys
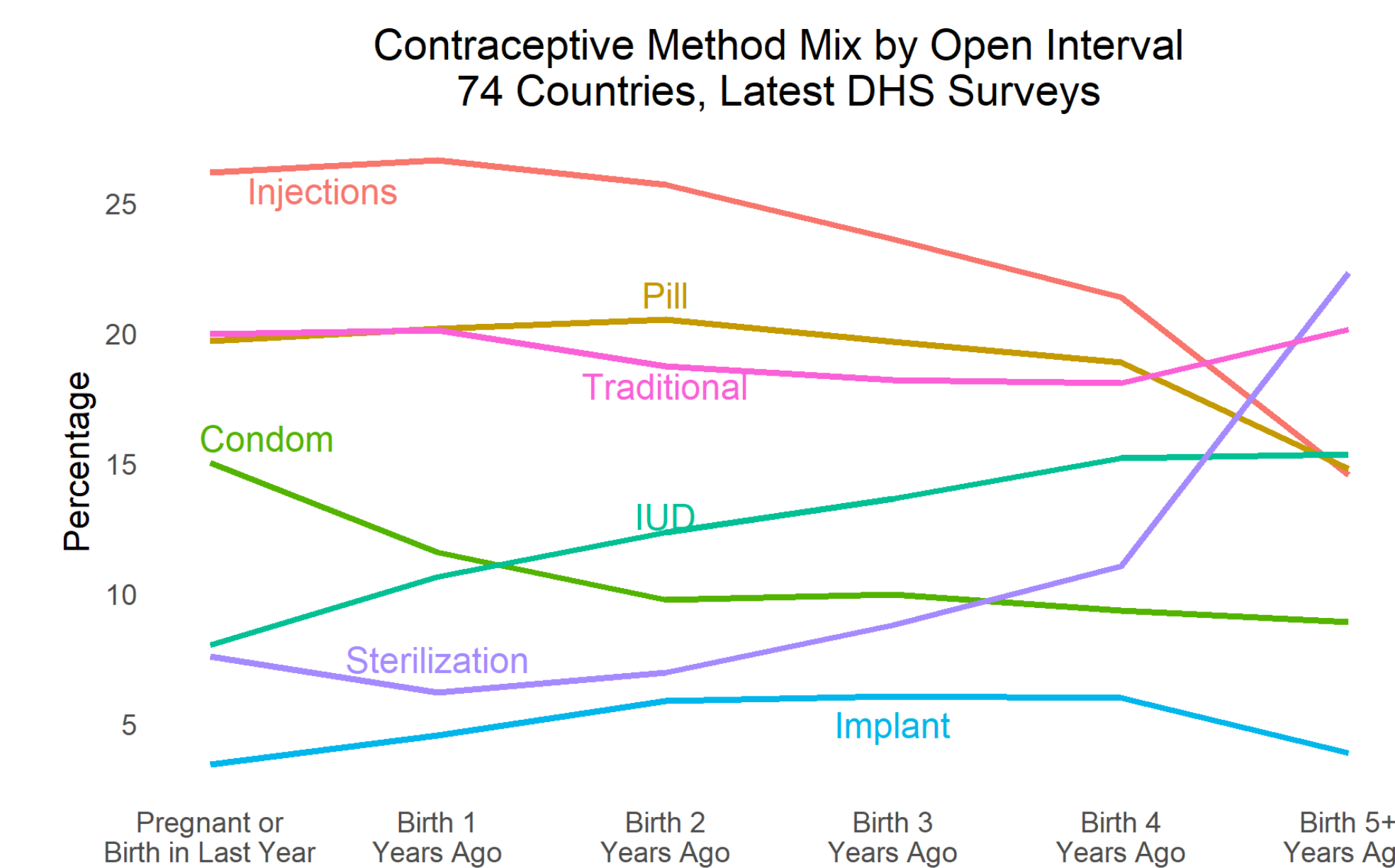
It is useful to examine the contraceptive method mix in more detail. As the above figure shows, injectables, pills, and traditional methods play the strongest roles through most of the intervals, but with a clear decline for the injectable. The condom starts strong but falls off quickly. Meanwhile use of the IUD increases steadily, as does sterilization (both genders), which holds first place by the final interval.

Women tend to adjust their choice of methods as they and their youngest child age. Survey information on the open interval can provide, for the individual country, useful information regarding changing method preferences aligned with distance from the last birth.

Programmatic Uses

Changes in the proportions and numbers who are pregnant or close after birth signal needed modifications in services. These pertain especially to maternity care, postpartum services, and early contraceptive offerings. But equally, attention to the numbers in the intermediate and longer intervals can clarify the likely need, or market, for the changing mix of contraception between short term and long-term methods. Absolute numbers within the various interval lengths are important for planning. Close monitoring, with the numbers involved, enable modifications to supply lines, personnel allocations, clinic operations, and budgets by type of expenditure.

Service providers who concentrate on maternity- and child-related services will typically be concerned with women in the early intervals, from pregnancy through the fourth or fifth year. All outreach activities should recognize that a woman's need for, readiness for, and interest in contraceptive use is tied closely to the age of her youngest child.

Conclusions

Easily available over time in national surveys, the open birth interval shows movement through the stages of reproductive behavior; it informs fertility analyses; and it offers guidelines for national action programs.

The age of a woman's youngest child carries important implications for her freedom of action, and it varies greatly across regions; in sub-Saharan Africa at one extreme, and in the European/W. Asia countries at the other.

We recommend that national planners for reproductive health programs examine each new survey for the open birth interval distribution and its correlates, in light of changes since the previous surveys. That will augment other bodies of information currently in use to strengthen both the planning and the implementation of national programs.

Acknowledgments

For further information

Please contact *kbietsch@avenirhealth.org*.