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Demographic evidence from family planning service statistics Think piece prepared for the Expert Group Meeting on the Demographic Evidence Base for post-2015

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Service statistics, defined here as data routinely recorded in connection with family planning (FP) programme service delivery, were largely the sole source of data for tracking FP programme performance prior to 1970 or so. Although varying from country-to-country and programme-to-programme, the “core” of FP service statistics systems generally consists of numbers of:

- FP service visits (sometimes classified by method);
- New FP acceptors (by method);
- Continuing users (resupply visits);
- Current users (new + continuing – dropouts).

Reports on numbers of contraceptive commodities distributed to clients are also common, although such data are often compiled and reported through logistics management information systems (LMIS) versus through FP service statistics systems or health management information systems (HMIS). Historically, family planning service statistics have been collected through paper-based service registers. These registers track client visits (not individual clients) and often services provided, and are usually aggregated by hand at the facility level (for example, total numbers for each category), then reported up for further aggregation.

Among the strengths of FP service statistics are:

- They are collected in conjunction with service delivery, and thus entail no additional data collection costs,
- They are compiled at the level of individual patients (although computerized medical record systems are needed to fully take advantage of this strength),
- They provide high geographic detail, and
- They are available as often as on a monthly basis depending upon reporting requirements and data extraction capabilities.

However, these are more than offset by a number of weaknesses, including:

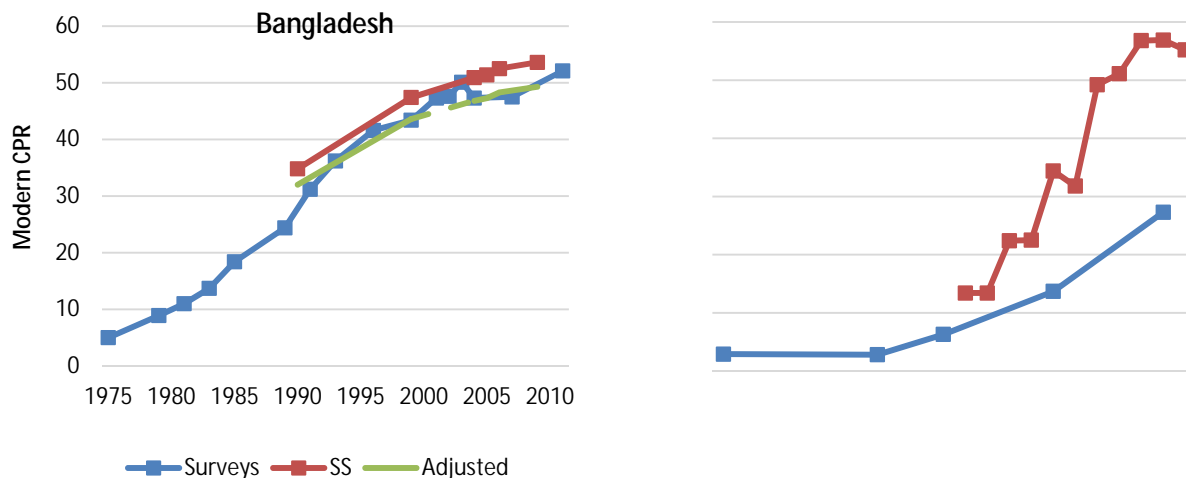
- They are prone to error (under-reporting, duplicate reporting, deliberate “padding” to reach targets),
- Some key concepts/indicators are difficult (or impossible) to measure well from service statistics (e.g., number of current users—difficult to track discontinuers or method changers at other service delivery points (SDPs), and
- They often entail vague concepts (e.g., “new acceptors”).

Box 1. Track20 Rapid Assessments reveal challenges at country level

As part of Avenir Health's Track20 project, funded by the Bill and Melinda Gates Foundation, a series of rapid assessments have been carried out in countries to provide a baseline overview of the current reporting infrastructure and data flow for family planning data. Some illustrative results are shown below.

calculated from successive DHS surveys and, ultimately, how well it predicts subsequent survey estimates.

Figures 1 and 2. Illustrative example comparing mCPR from surveys to estimates from service statistics



The basic principle is also relevant in more sophisticated applications. For example, the Family Planning Estimation Tool (FPET), developed under the Track20 Project, adapts the United Nations Population Division’s model for projecting contraceptive prevalence to allow for service statistics to inform country estimates of contraceptive prevalence in years in which survey data are unavailable.¹ The Family Planning Estimation Tool is a Bayesian, hierarchical statistical model that fits curves to historical data on key FP indicators. The model fits a logistic growth curve to determine the long-term trend and adds a times series model with autocorrelation to capture the deviations around the long-term trend. The long term trend is characterized by an asymptote (where the trend levels off), a parameter for pace (the rate of increase) and a timing parameter that are dependent on both national survey data and regional patterns.

The FPET model is fit to survey data on contraceptive use for all methods and then a second trend splits total contraceptive use into modern and traditional methods. The model also fits trends in unmet need and total demand for family planning. The model not only determines the most likely trend through the data, but also estimates the uncertainty range around the trend so that each estimate contains a median estimate as well as a 95 per cent confidence range or limit. The figures below illustrate how service statistics can both enable evidence-based projections into the near-term future and improve the statistical fit of the model to the observed data. Note that the inclusion of service statistics (right graph) narrows the confidence intervals for mCPR estimates after the last DHS survey.

Another consideration when looking at family planning service statistics is capturing data from the private sector. In many countries, the private sector plays a significant role in the provision of FP services and commodities; in some cases this data is reports into the Government system, however, the coverage of this reporting is often low and variable. Several types of analyses can contribute to this more in-depth understanding and the appropriate adjustment of public sector data. For example, a recent analysis² of

¹ Alkema, L. and others. “National, regional, and global rates and trends in contraceptive prevalence and unmet need for family planning between 1990 and 2015: A systematic and comprehensive analysis”, *The Lancet* vol. 11, No. 381 (9878) May 2013: 1642-52 doi: 10.1016/S0140-9736(12)62204-1.

² Analysis being conducted by Track20, analysis is still underway but will be made publically available once report is complete.

While many limitations still exist in terms of using family planning service statistics for both on-the-ground programme monitoring and to inform national modelled estimates, progress is being made.