

Technical note: Adolescent Estimates for 2017 London Summit

July 2017

This note provides an overview to the calculations done to prepare numbers for the London Summit related to adolescent contraceptive use and fertility in select countries.

Calculating the current number of adolescent users

For each country, the total number of modern users in 2016 was used as a starting place. These total user numbers are in line with estimates made for the 2016 FP2020 Progress Report¹. Next, using each country's DHS data set (see table 1), the distribution of modern method users by age was calculated (in 5-year age groups). Finally, the % of all modern users who are aged 15-19 was multiplied by the total number of users in 2016 to estimate the number of adolescent users in 2016.

Calculating the number of married and sexually active unmarried adolescents

Using the full dataset for each country, the proportion of all adolescent girls (15-19) who are married or in-union was calculated for each country. In addition, the proportion of adolescent girls who are unmarried and who had sex within the last year was also calculated. For countries without unmarried women in their datasets, a regional average was used based on all available survey data for the 69 FP2020 countries (see table 1).

Calculating mCPR among married and sexually active unmarried adolescents

The proportion of adolescent girls who are married and sexually active unmarried (from above) was then multiplied by number of adolescent girls in 2016, as projected by the UNPD WPP2015 Revision. This figure served as the denominator. The total number of adolescent users was then divided by this figure to get an mCPR among married and sexually active unmarried adolescents.

Calculating unmet need among married and sexually active unmarried adolescents

Using the full dataset of each country, unmet need was calculated for two groups of adolescents- married adolescents and unmarried sexually active adolescents. These were then combined to estimate the total unmet need among the group of married and sexually active unmarried adolescents.

Calculating 2020 adolescent users if 60% of current unmet need was met

For the purposes of this analysis, a 2020 projection was created assuming that modern contraceptive use would increase to meet 60% of current unmet need among adolescents. Therefore, the 2020 mCPR was set to the current mCPR + 60% of current unmet need. This figure was then multiplied by the estimated number of adolescent girls in 2020 to estimate the total number of adolescent users in 2020, under the scenario of meeting 60% of current unmet need.

This figure was then compared to the 2016 user estimates to calculate the additional adolescent users under the scenario of meeting 60% of current unmet need.

¹ FP2020 Momentum at the Midpoint 2015-2016, available from: <http://progress.familyplanning2020.org/>

Calculating the impact on the Adolescent Birth Rate (ABR) of increasing adolescent contraceptive use

First, the current Index of Contraception (Cc) was calculated for each country using Bongaarts Proximate Determinants framework² as follows:

$$C_c = 1 - (1.08 \times u \times e)$$

Where:

u = the contraceptive prevalence rate among married and sexually active unmarried adolescents

e = average use effectiveness, assume to be 0.7 in 2016 and 0.8 in 2020 for all countries

Then, using the 2016 ABR³, and Cc for 2016, using u and e as described above, a second index accounting for all other fertility inhibiting factors was calculated as follows:

$$C_{\text{other}} = \text{ABR} / (C_c \times 2.5)$$

Where 2.5 represents the age-specific fecundity for 15-19-year-old girls.⁴

Then, a 2020 ABR was calculated based on a revised Cc where u was increased to be mCPR in 2016 + 60% of unmet need in 2016, and e was increased to 0.8 to represent an increase in the effectiveness of methods used, as follows:

$$\text{ABR}_{2020} = C_{c2020} \times C_{\text{other}} \times 2.5$$

² Bongaarts, J. (1978). A Framework for Analyzing the Proximate Determinants of Fertility. *Population and Development Review*, 4(1), 105-132. doi:10.2307/1972149

³ Calculated as the average of the ABR for the period 2010-2015 and 2015-2020, based on UNPD WPP2017 Revision.

⁴ As described in Alemayehu T et al (2010). Determinants of adolescent fertility in Ethiopia. *Ethiop. J. Health Dev.* 2010;24(1):30-38

Table 1. Data sources used for marital status, sexual activity, contraceptive use and unmet need

Country	Source for married adolescents	Source for unmarried adolescents
Bangladesh	DHS 2014	Regional Average
Burkina Faso	DHS 2010	DHS 2010
Côte d'Ivoire	DHS 2011-12	DHS 2011-12
Ethiopia	DHS 2011	DHS
India*	DHS 2005-06	DHS 2005-06
Kenya	DHS 2014	DHS 2014
Malawi	DHS 2015-16	DHS 2015-16
Mozambique	DHS 2011	DHS 2011
Niger	DHS 2012	DHS 2012
Nigeria	DHS 2013	DHS 2013
Pakistan	DHS 2012-13	Regional Average
Sierra Leone	DHS 2013	DHS 2013
Tanzania	DHS 2015-16	DHS 2015-16
Uganda	DHS 2011	DHS 2011

**For India, % of adolescents who are married was adjusted based on the decline in the % of women married by age 18 seen between NFHS-3 and NHSF-4.*

Table 2. Results for selected countries

Country	Current has X married and sexually active unmarried adolescent girls (15-19)	of which X% of them have an unmet need for contraception.	If country was to increase its focus on adolescents, enabling X additional girls to use modern contraception by 2020	Then we would see a X% reduction in the ABR	From X	to X
Bangladesh	3,556,674	18%	373,715	26%	86	64
Burkina Faso	422,035	28%	91,500	21%	110	87
Côte d'Ivoire	743,287	47%	236,066	36%	134	86
Ethiopia	1,325,329	31%	296,377	30%	68	48
India	9,258,717	26%	1,491,548	17%	27	22
Kenya	470,860	31%	131,446	38%	84	52
Malawi	358,799	34%	94,669	31%	142	98
Mozambique	991,006	37%	288,038	32%	144	98
Niger	667,782	14%	72,694	9%	197	180
Nigeria	3,825,313	19%	584,531	14%	112	96
Pakistan	1,366,011	16%	132,990	11%	39	35
Sierra Leone	221,621	34%	58,223	34%	120	78
Tanzania	1,306,369	33%	345,653	25%	119	89
Uganda	826,257	35%	221,378	26%	117	87