**The Impact and Cost of Increasing Access to Sexual and Reproductive Health Care in Low- and Middle-Income Countries (LMICs)**

**Executive Summary**

Improved outcomes and equality for health, education, and gender are conditional upon the full realization of sexual and reproductive health and rights. Despite global improvements in reproductive health care service access and outcomes over the past few decades, low- and middle-income countries (LMICs) still struggle with high unmet care needs, resulting in poor health and social outcomes for girls and women, including high maternal mortality rates. Data from the Adding it Up (2019) project was used to compare important demographic and reproductive health characteristics of LMICs and generate estimates of the cost and value of reproductive health care services.[[1]](#endnote-1) Data visualizations made available on [Tableau Public](https://public.tableau.com/app/profile/caroline.adams2525/viz/ppol563-finalviz-adams/Story1?publish=yes) outline key takeaways from this analysis.

The produced data story demonstrated that if all girls and women ages 15 through 49 could access needed sexual and reproductive health care, most LMICs would significantly reduce maternal mortality rates (MMRs). The most considerable reductions in MMR could be yielded in Southern and Eastern Africa, the Caribbean, and Central America, with median MMR reductions between 30 and 37 percent. Achieving the scenario where all care needs are met would require a less than $10 per capita investment in sexual and reproductive health care service access.

**Background**

Sexual and reproductive health services are critical to ensuring healthy and safe pregnancies, deliveries, babies, and other sexual and reproductive health outcomes. Access to these health care services promotes positive health outcomes and allows individuals to exercise their sexual and reproductive rights. These services are an essential aspect of the health needs of women, girls, and other individuals, which is often lacking due to systemic gender inequity and efforts to undermine the reproductive autonomy of girls and women.

The lack of access to sexual and reproductive health services disproportionately impacts women who live in poverty.[[2]](#endnote-2) Estimates from 2019 demonstrated that 218,000 women ages 15 through 49 in LMICs had an unmet need for modern contraception (i.e., they did not want to become pregnant but did not have access to a modern contraceptive method).[[3]](#endnote-3) Almost half of pregnancies were unintended in LMICs (111 million annually), and tens of millions of pregnant people did not receive sufficient or any pregnancy-related and newborn health care services.[[4]](#endnote-4) Current estimates indicate that there are 299,000 pregnancy-related deaths and 2.5 million newborn deaths annually, which are mostly preventable.[[5]](#endnote-5) For example, in 2019, it was estimated that sixteen million women and 13 million newborns did not receive the care they needed for major complications in pregnancy and childbirth.[[6]](#endnote-6) If all pregnancy, newborn care, contraceptive, and STI service needs were met, it is estimated that the unintended pregnancy rate could be reduced by 68 percent and that the maternal death rate could be reduced by 62 percent in LMICs.[[7]](#endnote-7)

**Analysis Overview & Significant Platforms**

A six-part data story was generated to provide insight into the cost and impact of providing access to all needed sexual and reproductive services to girls and women in low- and middle-income countries. Tableau, a visual analytics platform, was used to produce the published data story. A series of “sheets” were created containing individual visualizations that were grouped together in one “story.” Text descriptions were added to the story product. The compiled story was saved to Tableau Public online and can be accessed [here](https://public.tableau.com/app/profile/caroline.adams2525/viz/ppol563-finalviz-adams/Story1?publish=yes). All data transformations of the original dataset (described below) were completed in Tableau.

**Data Source**

The Adding It Up program synthesizes data from nationally representative surveys such as Demographic and Health Surveys, UNICEF Multiple Indicator Cluster Surveys, U.S. Centers for Disease Control and Prevention Reproductive Health Surveys, and Performance Monitoring Action Surveys for low- and middle-income countries.[[8]](#endnote-8) The project generates estimates from the survey data of the need for reproductive health care services and the costs associated with providing those services in 132 low- and middle-income countries (LMICs). A country’s income status was determined using 2018 gross national income per capita. Low income corresponds to a per capita income of $1,035 or less, lower middle income to $1,026-$3,995, and upper middle income to $3,996 through $12,375.

For this project, data focused on contraceptive services, pregnancy and infant care, STI treatment, and maternal mortality rates from the All of Us project was analyzed. Specifically, the following variables were used: 1) costs in U.S. dollars to deliver the current state of care to individuals in a given country, 2) estimated costs (in USD) to deliver care in a way that would be accessible and available to all women and girls ages 15 through 49 who need reproductive health care services (from this point on referred to as the “all-care-needs-met scenario”), 3) the current maternal mortality rate per 100,000 live births for each country, and 4) the estimated maternal mortality rate if all women were able to receive the level of care that they needed (under the all-care-needs-met scenario).

For the analysis, costs for the two primary scenarios (current care and all-care-needs-met) were used to calculate the dollar amount per capita that a country would need to invest on top of current spending to ensure all women and girls could access the ideal level of sexual and reproductive health care services. Estimated per capita costs for delivering current care were subtracted from the estimated per capita expenditures to provide care under the all-care-needs-met scenario. Similarly, current maternal mortality rates and estimated maternal mortality rates under the all-care-needs-met scenario were used to calculate an estimated reduction in the number of maternal deaths and the estimated percent reduction of maternal mortality rate with different levels of investment in sexual and reproductive health care access. Visualizations were produced to demonstrate variation in current maternal mortality rates, estimated investments needed to meet all care needs, and the resulting reduction in maternal mortality rates if all care needs were met across countries and by global (sub)region.

**Key Insights**

The main takeaway from this analysis is that if women and girls of reproductive age had full access to needed contraception, pregnancy and post-partum care, newborn care, and sexually transmitted infections, most LMICs would see substantial reductions in maternal mortality rates per 100,000 live births. Clearly, the lack of access to these services is driving a portion of each LMIC’s maternal mortality rate. Interestingly, the estimated impact of increasing access to these services varies widely by county and region. The third visualization in the Tableau story displays the percentage decrease in maternal mortality rate that each LMIC country would experience, aggregated into a subregional-level distribution, if sufficient investments were made to ensure all women ages 15 through 49 could access the sexual and reproductive health care that they needed. We can see that the most significant reductions in MMR would be yielded in Southern and Eastern Africa, the Caribbean, and Central America, with median MMR reductions between 30 and 37 percent.

The second key takeaway is that in most LMICs, all potential reductions in MMR through achieving the all-care-needs-met scenario could be yielded through per capita investments of $10 or less. The fourth visualization in the Tableau story displays the dollar amount per capita increase needed to go from the current care scenario to the all-care-needs-met scenario on the y-axis and the estimated reduction in number of maternal deaths that the cost increase would yield for each country. This visualization makes clear how many lives could be saved globally if additional investments were made to improve reproductive health care service access for women.

The sixth visualization displays the dollar amount per capita increase needed to reach the all-care-needs-met scenario versus the resulting estimated percent reduction in MMR for each country. For many countries, a relatively smaller per capita investment produces a relatively larger percentage reduction in MMR. For example, most Latin American and Caribbean countries require less than $10 per capita investment in sexual and reproductive health care service access to reduce MMRs by 30 to 50 percent. This suggests that investments in countries where low-cost (per capita) reproductive health interventions are estimated to yield proportionally high maternal mortality rate reductions may produce a higher return-on-investment. To ensure allocations are equitable, aid organizations and interested nations should prioritize directing investments to countries with the highest maternal mortality rates currently.

The final key takeaway is that African countries experience disproportionately high MMRs, and the estimated costs associated with achieving the all-care-needs-met scenario are much higher than most other peer LMICs. An in-depth investigation of factors underlying the disproportionately high maternal mortality rates should be completed to promote health and economic equity. Targeted investments and interventions should be directed toward experiencing the highest risk of dying due to pregnancy and childbirth.

1. Sully et al. Adding It Up: Investing in Sexual and Reproductive Health 2019 - All Women Dataset. New York: Guttmacher Institute, 2021. [↑](#endnote-ref-1)
2. Ahmed, Z. (2020). Just $10 Per Person a Year Could Provide Sexual and Reproductive Health Services to All—Will the United States Help Make That Happen? https://www.guttmacher.org/article/2020/07/just-10-person-year-could-provide-sexual-and-reproductive-health-services-all-will [↑](#endnote-ref-2)
3. Sully, E., Biddlecom, A., Darroch, J.E., Riley, T., Ashford, L.S., Lince-Deroche, N., Firestein, L., & Murro, R. (2020). Adding it Up: Investing in sexual and reproductive health 2019. https://www.guttmacher.org/report/adding-it-up-investing-in-sexual-reproductive-health-2019 [↑](#endnote-ref-3)
4. Sully, E., Biddlecom, A., Darroch, J.E., Riley, T., Ashford, L.S., Lince-Deroche, N., Firestein, L., & Murro, R. (2020). Adding it Up: Investing in sexual and reproductive health 2019. https://www.guttmacher.org/report/adding-it-up-investing-in-sexual-reproductive-health-2019 [↑](#endnote-ref-4)
5. Ahmed, Z. (2020). Just $10 Per Person a Year Could Provide Sexual and Reproductive Health Services to All—Will the United States Help Make That Happen? https://www.guttmacher.org/article/2020/07/just-10-person-year-could-provide-sexual-and-reproductive-health-services-all-will [↑](#endnote-ref-5)
6. Sully, E., Biddlecom, A., Darroch, J.E., Riley, T., Ashford, L.S., Lince-Deroche, N., Firestein, L., & Murro, R. (2020). Adding it Up: Investing in sexual and reproductive health 2019. https://www.guttmacher.org/report/adding-it-up-investing-in-sexual-reproductive-health-2019 [↑](#endnote-ref-6)
7. Sully, E., Biddlecom, A., Darroch, J.E., Riley, T., Ashford, L.S., Lince-Deroche, N., Firestein, L., & Murro, R. (2020). Adding it Up: Investing in sexual and reproductive health 2019. https://www.guttmacher.org/report/adding-it-up-investing-in-sexual-reproductive-health-2019 [↑](#endnote-ref-7)
8. Sully, E., Biddlecom, A., Darroch, J.E., Riley, T., Ashford, L.S., Lince-Deroche, N., Firestein, L., & Murro, R. (2020). Adding it Up: Investing in sexual and reproductive health 2019. https://www.guttmacher.org/report/adding-it-up-investing-in-sexual-reproductive-health-2019 [↑](#endnote-ref-8)