Global, Regional, and National Estimates of Complete Coverage of Maternal Obstetric Care Interventions, 1990-2019

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A thesis
submitted in partial fulfillment of the
requirements for the degree of

Master of Public Health

University of Washington
2020

Committee:
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Program Authorized to Offer Degree:
Global Health

University of Washington

Abstract

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Introduction: Tracking coverage of maternal obstetric care interventions is a major component of policies and programs aimed at reducing maternal and child mortality around the world. Previous work quantifying coverage of these interventions has been limited in scope and cross-national comparability. In this analysis, we estimate coverage of five essential maternal obstetric care interventions and a new indicator of receipt of the full maternal obstetric care continuum.

Methods: We synthesized 898 unique data sources covering 4,141 unique country-years of data to model coverage of antenatal care (4+ visits), in-facility delivery, skilled birth attendance, caesarean section delivery, postnatal care, and full maternal care coverage. We used a 3-step spatiotemporal Gaussian process regression modeling technique to produce estimates of coverage at the global, regional, and national levels from 1990 to 2019.

Results: In 2019, we estimate 68.3% (95% UI 67.5 – 69.1) of women received four or more antenatal care visits during pregnancy, 81.1% (80.1 – 82.2) of women gave birth in a health facility, 83.1% (82.1 – 84.0) of births were attended by a skilled birth attendant, 22.3% (21.2 – 23.5) of births were delivered via caesarean section, and 70.5% (69.8 – 71.1) of women received a postnatal care visit within two days of delivery. We estimate that 56% (55.1 – 56.9) of women received the recommended full continuum of maternal care indicators. While significant progress has been made in expanding coverage since 1990, we demonstrate large remaining geographic coverage gaps. These gaps resulted in an estimated 58.3 million live births in 2019 that were not covered by the full continuum of recommended maternal obstetric care interventions.

Discussion: While significant progress has been made in expanding access to essential maternal obstetric care interventions, coverage remains comparatively low in regions with the highest maternal and child morbidity and mortality. Estimates of intervention coverage can help policymakers and practitioners identify locations for program and policy focus, and estimates of full maternal care coverage expand beyond traditional monitoring frameworks and focus on the full maternal obstetric care continuum and health systems' capacity to provide care throughout the duration of pregnancy, delivery, and post-partum.

Introduction

Improvements in maternal and child health in recent decades coincided with increased coverage and quality of care during pregnancy, childbirth, and the post-partum period. Interventions during these periods can significantly reduce the risk of morbidity and mortality for both mothers and children. Despite significant improvements in reducing the burden of disease in these populations, however, maternal and child mortality remain persistently high in some countries and regions. The Global Burden of Disease (GBD) Study estimated 196,000 maternal deaths globally in 2019, with many of these concentrated in Sub-Saharan Africa and South Asia, and 2.42 million neonatal deaths globally in 2019.[1] In addition, a recent report by Lawn et al. estimated 2.6 million stillbirths globally in 2015, with half occurring during labor,[2] which is similar to the most recent GBD estimate of 2.1 million stillbirths in 2015.[3]

To address this burden, national governments and multi-national organizations such as the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) have implemented several significant policies and initiatives. Reducing the maternal mortality ratio is an explicit target of the Sustainable Development Goals (Target 3.1),[4] and in response to the SDGs the United Nations launched the "Global Strategy for Women's, Children's, and Adolescents' Health" to focus on improving the health of women and children globally.[5] A key focus of this and similar policy frameworks is tracking coverage of evidence-based interventions that improve the health of mothers and children, such as access to care in the antenatal and postnatal periods and essential care during delivery.[6]

In this analysis we estimate coverage of several essential maternal obstetric care interventions, including antenatal care, in-facility delivery, skilled birth attendance, caesarean section, and postnatal care, as well as a comprehensive indicator of receipt of the full maternal care continuum, from 1990 to 2019. Estimates of coverage can inform practitioners and policymakers of existing gaps in access to care and identify potential target areas for intervention, particularly in regions of high maternal and child mortality. Understanding temporal trends in coverage can help identify countries that have successfully increased coverage of these interventions and may help in identifying strategies for success that can be implemented in other locations.

While many studies have quantified coverage of these essential maternal obstetric care interventions,[7,8,9] most of these focus on a particular country or region rather than estimating coverage across all countries in a cross-nationally comparative framework. In addition, no study that we have found quantifies receipt of a full set of these interventions across all countries. In addition to estimates of individual intervention coverage, it is equally important to understand what proportion of women receive *all* recommended components, recognizing that these are all part of a comprehensive care continuum.

Methods

Indicators

We modeled coverage of five essential maternal obstetric care interventions: Antenatal Care 4+ visits (ANC4), In-Facility Delivery (IFD), Skilled Birth Attendance (SBA), Caesarean Section, and Postnatal Care visit within 2 days (PNC). In addition, we estimated coverage of a composite full maternal care indicator that includes receipt of ANC4, IFD, SBA, and PNC. The indicator definitions used for this analysis are detailed in Table 1.

Table 1. Definitions of Indicators

Indicator	Definition
Antenatal Care 4+ Visits	Proportion of women that receive at least four antenatal care visits from a skilled provider (typically a doctor, nurse, midwife, or country equivalent) during pregnancy
In-Facility Delivery	Proportion of all women who give birth in a health facility
Skilled Birth Attendance	Proportion of all women whose deliveries are supervised by a skilled birth attendant (typically a doctor, nurse, midwife, or country equivalent)
Caesarean Section	Proportion of all live births delivered via caesarean section
Postnatal Care Visit within 2 days	Proportion of all women that receive a postnatal care visit within two days after birth
Full Maternal Care	Proportion of all women that receive at least four antenatal care visits from a skilled provider, give birth in a health facility supervised by a skilled birth attendant, and receive a postnatal care visit within two days after birth

Data Sources

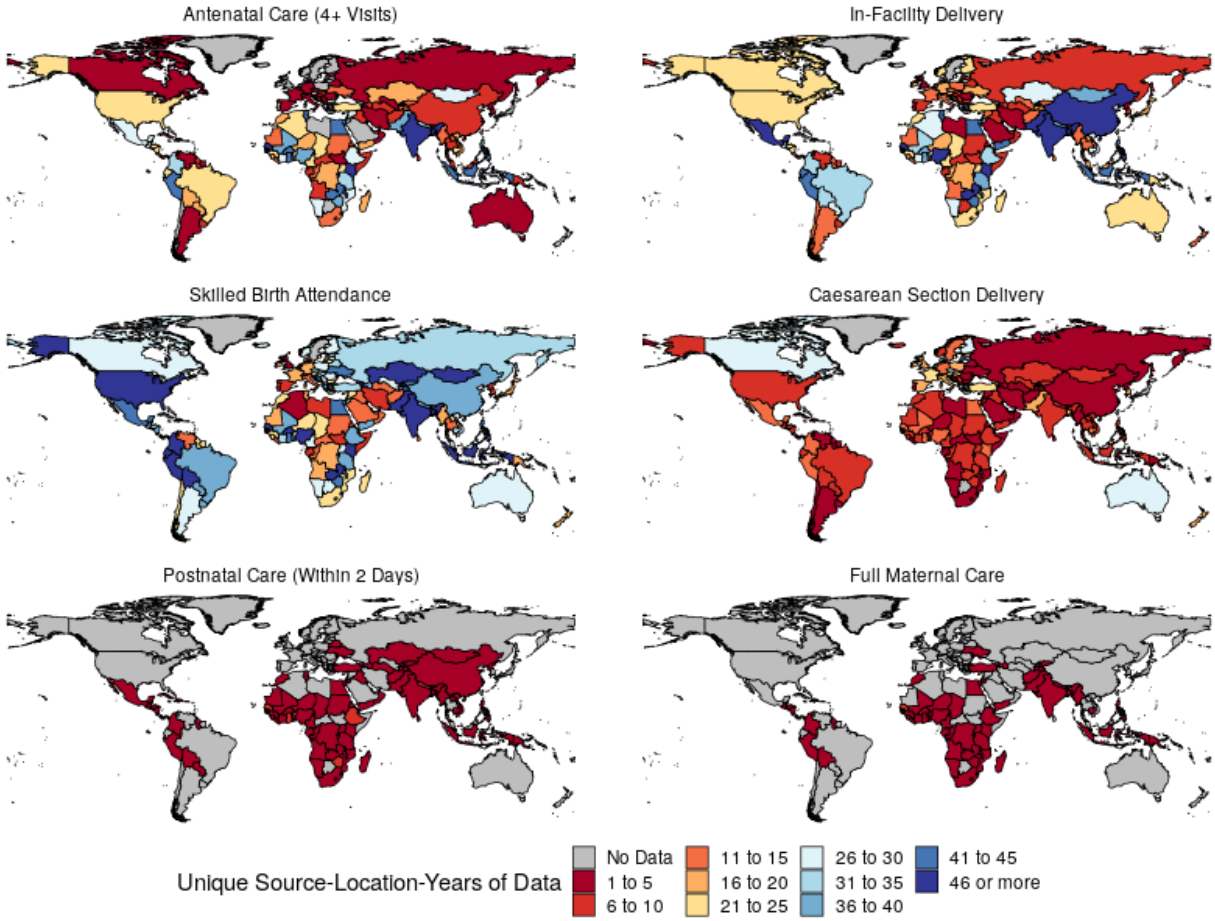
We included data from population-representative surveys, administrative data sources, and published scientific literature. Survey data sources included multinational survey series such as the Demographic and Health Surveys,[10] Multiple Indicator Cluster Surveys,[11] Reproductive Health Surveys,[12] and Living Standards Measurement Studies,[13] as well as country-specific surveys. We also included data reported from national governments and ministries of health where available, and extracted all data from World Health Organization regional databases (including European Health For All,[14] Pan-American Health Organization,[15] and Western Pacific Region[16]) and the UNICEF Maternal and Newborn Health Coverage Database.[17] Finally, we searched the Global Health Data Exchange (GHDx)[18] for reports of population-representative surveys in locations where we did not have data from the previously-described sources.

Our final dataset included 898 unique sources covering 4,141 unique country-years of data. Table 2 presents a breakdown of unique data sources and geographic and temporal data coverage by each indicator in the analysis. Figure 1 includes maps of unique source-geography-years of data by each indicator. (See Supplemental Appendix Table 2 for a full citation list of all sources included in this analysis.)

Table 2. Input Data Counts by Indicator

Indicator	Sources	Source-Country-Years	Countries	Earliest Year	Latest Year
Antenatal Care 4+ Visits	595	2436	153	1983	2019
In-Facility Delivery	670	3437	177	1982	2019
Skilled Birth Attendance	710	5054	195	1980	2019
Caesarean Section	516	1515	174	1980	2019
Postnatal Care Visit within 2 days	167	835	99	1993	2018
Full Maternal Care	164	656	99	1993	2018

Figure 1. Geographic Coverage of Input Data Sources by Indicator



Data Processing

We extracted all indicators available in each source using the definitions described in Table 1. For microdata sources, we generated tabulations and estimated standard error using survey weights and design effects where applicable. When a data source did not include sample size or standard error, we imputed standard error as the 95th percentile of standard errors observed in the data. This imputation was primarily applied to administrative data and data from WHO and UNICEF databases that only report mean coverage estimates.

We included survey data from respondents with children aged 0 to 59 months, corresponding to live births in the five years preceding the survey. We generated tabulations by child age, such that each survey source could produce up to five data points corresponding to children aged zero, one, two, three, and four years of age. We assigned each of these coverage observations to a birth-cohort year based on the child's age prior to the time of survey: children

aged 0 to 11 months were assigned the year of the survey, children aged 12 to 23 months were assigned one year prior to the survey, children aged 24 to 35 months were assigned to two years prior to the survey, and so forth.

Modeling Strategy

We modeled coverage separately for each indicator in this analysis using spatiotemporal Gaussian process regression (ST-GPR), a 3-step modeling technique that leverages relationships between data and predictive covariates and borrows strength across geography and time to produce a complete time-series of coverage estimates for every location in the analysis.[19]

The first step of the ST-GPR process is an ensemble mixed-effects linear regression. For each indicator we identified potential predictive covariates taken from the Global Burden of Disease Study covariates database.[20] Next, we tested every combination of those covariates in mixed-effects linear regressions where our observed indicator data points are regressed on the predictive covariates with nested random effects at the super-region, region, and location levels (for information on the geographic hierarchy used in the Global Burden of Disease study, see Murray et al. 2018[21]). We then evaluated and ranked each of these sub-models by their out-of-sample root-mean-square error (RMSE). Finally, to produce estimates for every location-year in the analysis, we averaged up to the 50 top-performing models where the estimated coefficients were 1) statistically significant with $p < 0.05$ and 2) in the prior expected direction. Appendix Table 1 details the covariates tested in the ensemble mixed-effects regression, and Appendix Figures 1-6 show plots of the standardized coefficients for each included covariate for each indicator.

The second stage of ST-GPR is a regression that smooths the residuals between our observed data and our first stage estimate across space and time and produces a new full time series in every location. The amount of smoothing is controlled by hyper-parameters λ (time) and ζ (space), and their values were chosen by evaluating the out-of-sample predictive validity of a set of candidate values and choosing the best-performing combinations tested.

Finally, the third stage of ST-GPR is a Gaussian process regression that allows for further smoothing between our observed data and our second stage estimate as well as estimation of uncertainty around the final mean estimates. The Gaussian process regression uses the variance of

our observed data points as well as the deviation between our first and second stage estimates in estimating uncertainty, producing 1000 draws of indicator coverage for every location and year which allows for calculation of mean values and quantile-based uncertainty intervals.

Model Post-Processing

Because we modeled full maternal care coverage separately from the component indicators and only included a subset of data sources with individual-level information on all interventions, it was possible to produce estimates of full maternal care coverage that exceeded the coverage estimates of any single component intervention, which is theoretically inconsistent. In this case, we considered our individual intervention estimates to be more reliable, as they had better data coverage in addition to including every source in the full maternal care model. Thus to ensure consistency between our individual intervention estimates and our estimates of full maternal care coverage, we applied a constraint to our full maternal care coverage estimates by setting the upper bound of the estimates to the lowest individual intervention coverage estimate for a given location-year. This resulted in downward adjustments of full maternal care coverage ranging from 0.0083 to 27.8 absolute percentage points, primarily in locations without data in the full maternal care model. 78.2% of location-years received no adjustment. Appendix Figure 7 shows a histogram of absolute correction factors when applied by super-region.

Secondary Analyses

Finally, to examine the predictive validity of our coverage estimates we modeled the relationship between each of our indicators and results of maternal and child mortality produced as part of the Global Burden of Disease Study.[1] Specific outcome variables included the maternal mortality ratio (MMR), neonatal mortality rate (NMR), and under-5 mortality rate (U5MR). We fit country-level estimates of each outcome on each intervention using generalized additive models (GAMs) consisting of penalized cubic regression splines with knots spread evenly throughout the domain of the intervention values.[22] We fit these splines separately for each year 1990-2019 included in the analysis.

Results

We estimate that globally in 2019 68.3% (95% Uncertainty Interval [UI] 67.5 – 69.1) of women received 4 or more antenatal care visits during pregnancy, 81.1% (80.1 – 82.2) of women gave birth in a health facility, 83.1% (82.1 – 84.0) of births were attended by a skilled birth attendant, 22.3% (21.2 – 23.5) births were delivered via caesarean section, and 70.5% (69.8 – 71.1) of women received a postnatal care visit within two days of delivery. In addition, we estimate that 56.0% (55.1 – 56.9) of women received the full continuum of maternal care indicators (ANC4, IFD, SBA, and PNC).

Figures 2 and 3 present maps of coverage in 1990 and 2019, respectively, for the universally-recommended maternal obstetric care interventions (ANC4, IFD, SBA, PNC, and full maternal care). Figure 4 presents maps of coverage in 1990 and 2019 for caesarean section. Global coverage has increased substantially since 1990 for each of these indicators: by 25.7 percentage points for antenatal care 4+ visits, 33.4 percentage points for in-facility delivery, 28.4 percentage points for skilled birth attendance, 11.5 percentage points for caesarean section delivery, 34.6 percentage points for postnatal care visit, and 30.9 percentage points for full maternal care coverage.

Nonetheless, there remain significant gaps and geographic variation in coverage. While many countries have near-universal coverage of ANC4, IFD, SBA, PNC, and full maternal care, the lowest country-level coverage proportion for these indicators in 2019 was: 13.6% (4.88 – 26.6) for antenatal care 4+ visits in Somalia, 11.8% (2.93 – 29.8) for in-facility delivery in South Sudan, 28.9% (13.4 – 48.6) for skilled birth attendance in Chad, 7.26% (5.69 – 9.13) for postnatal care visit in Somalia, and 1.35% (1.08 – 1.68) for full maternal care coverage in Somalia.

Figure 2. Estimates of Coverage of Maternal Obstetric Care Interventions, 1990

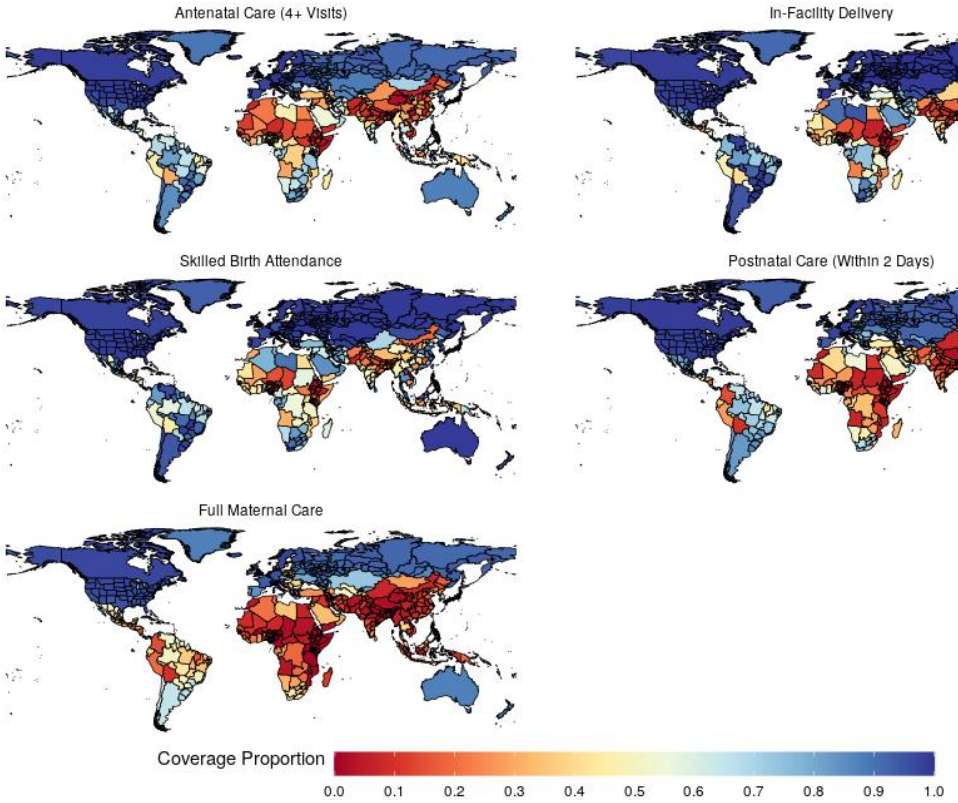


Figure 3. Estimates of Coverage of Maternal Obstetric Care Interventions, 2019

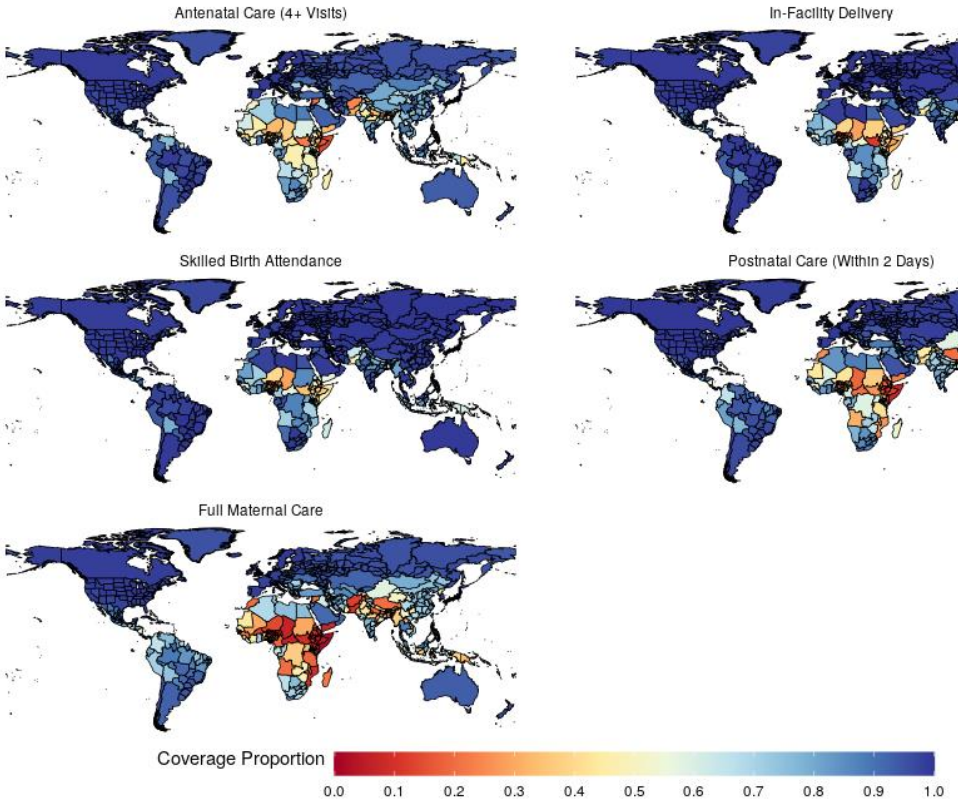


Figure 4. Estimates of Coverage of Ceasarean Section, 1990 and 2019

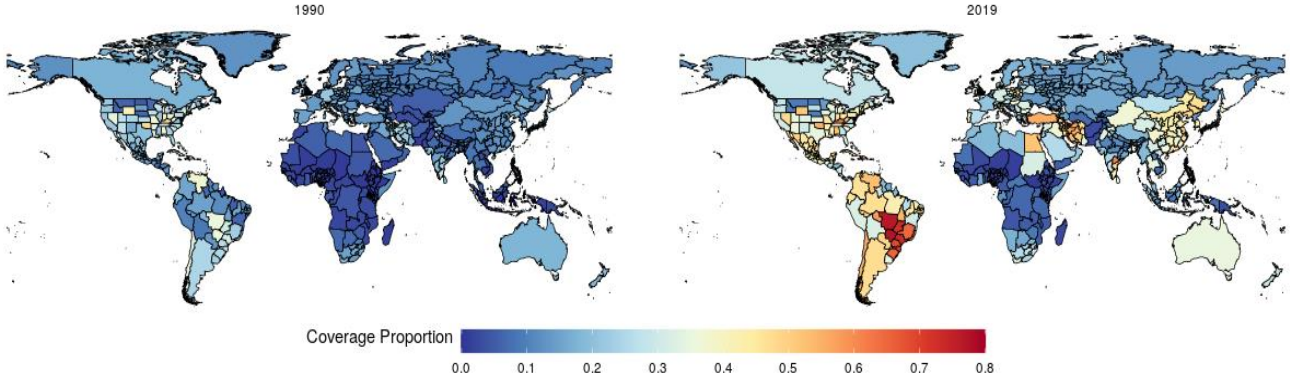


Figure 5 shows the increase in coverage for each super-region from 1990 to 2019 by intervention. While some regions had comparatively high coverage throughout this time, others have made significant progress in increasing coverage of these interventions, including South Asia, East Asia, Andean Latin America, and Southeast Asia.

Figure 6 presents comparisons of full maternal care coverage and each component indicator by super-region for 2019. Some regions had high coverage of all interventions within the maternal care continuum, including High-Income, Central Europe, Eastern Europe, Central Asia, and Tropical Latin America. Other regions, particularly those in Sub-Saharan Africa, South Asia, and North Africa and Middle East, have more heterogeneous coverage, with large differences between the highest-coverage interventions and the full maternal care coverage estimates. Antenatal care 4+ visits and postnatal care visit were usually the interventions with the lowest coverage and those least likely to be received in the full maternal care continuum. Appendix Figure 8 presents these same results disaggregated at the region level.

Figure 5. Trends in Maternal Care Intervention Coverage, 1990-2019

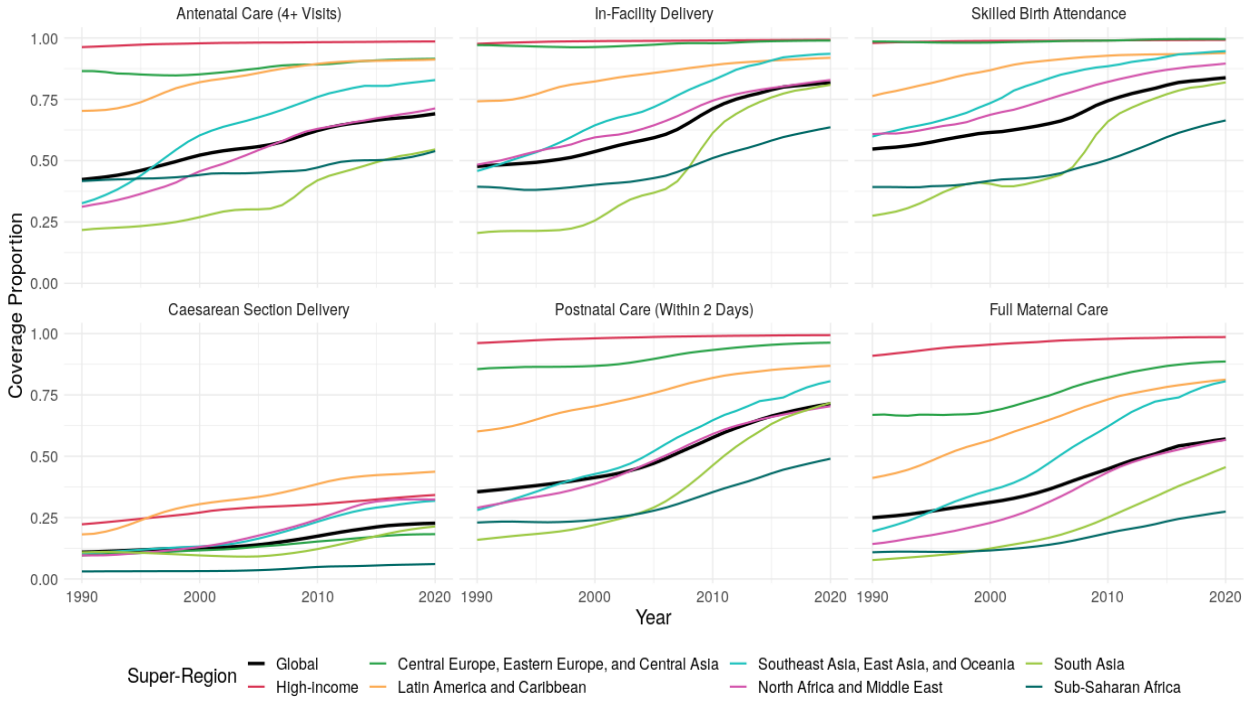
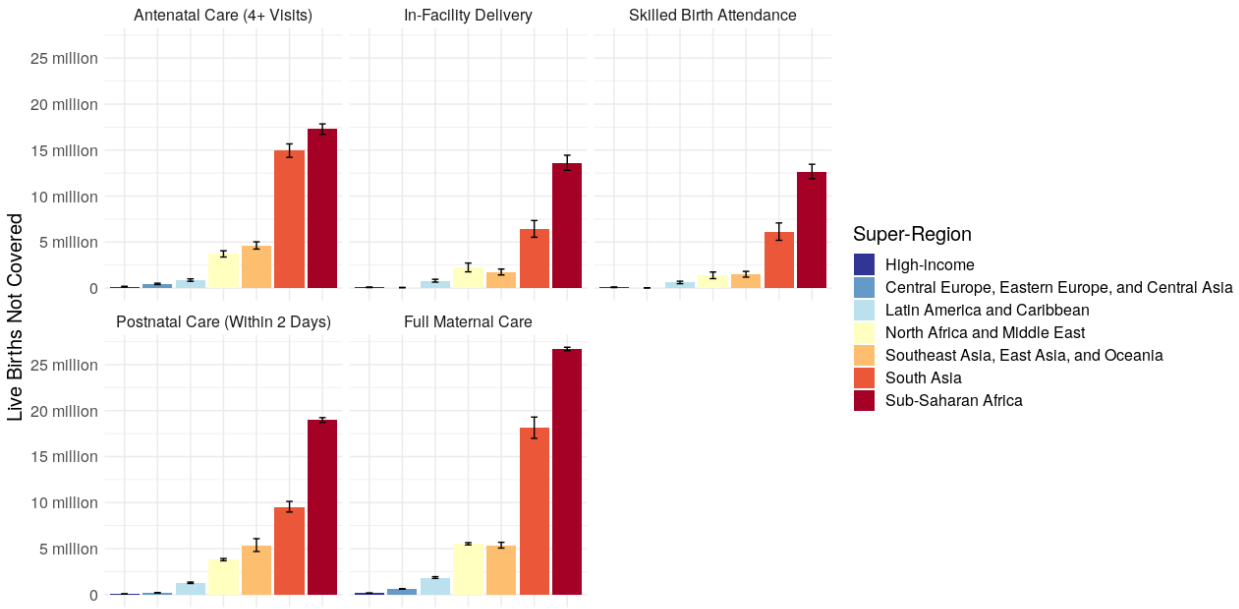


Figure 6. Full Maternal Care Intervention Coverage by Super-Region, 2019

Figure 7 displays estimates of the total number of live births that do not receive each recommended maternal obstetric care intervention disaggregated by super-region in 2019. We estimate that globally among live births in 2019 42.2 million (95% UI 41.2 – 43.3) had not received 4+ antenatal care visits, 24.8 million (23.4 – 26.2) did not occur in a health facility, 22.3 million (21.0 – 23.7) were not supervised by a skilled birth attendant, 39.2 million (38.3 – 40.2) did not receive a postnatal care visit within 2 days after birth, and 58.3 million (57.0 – 59.5) did not receive the full set of recommended maternal care interventions. These births not covered by recommended interventions were particularly concentrated in Sub-Saharan Africa and South Asia. Appendix Table 2 reports the estimates included in Figure 7 for each indicator globally and by super-region in 2019.

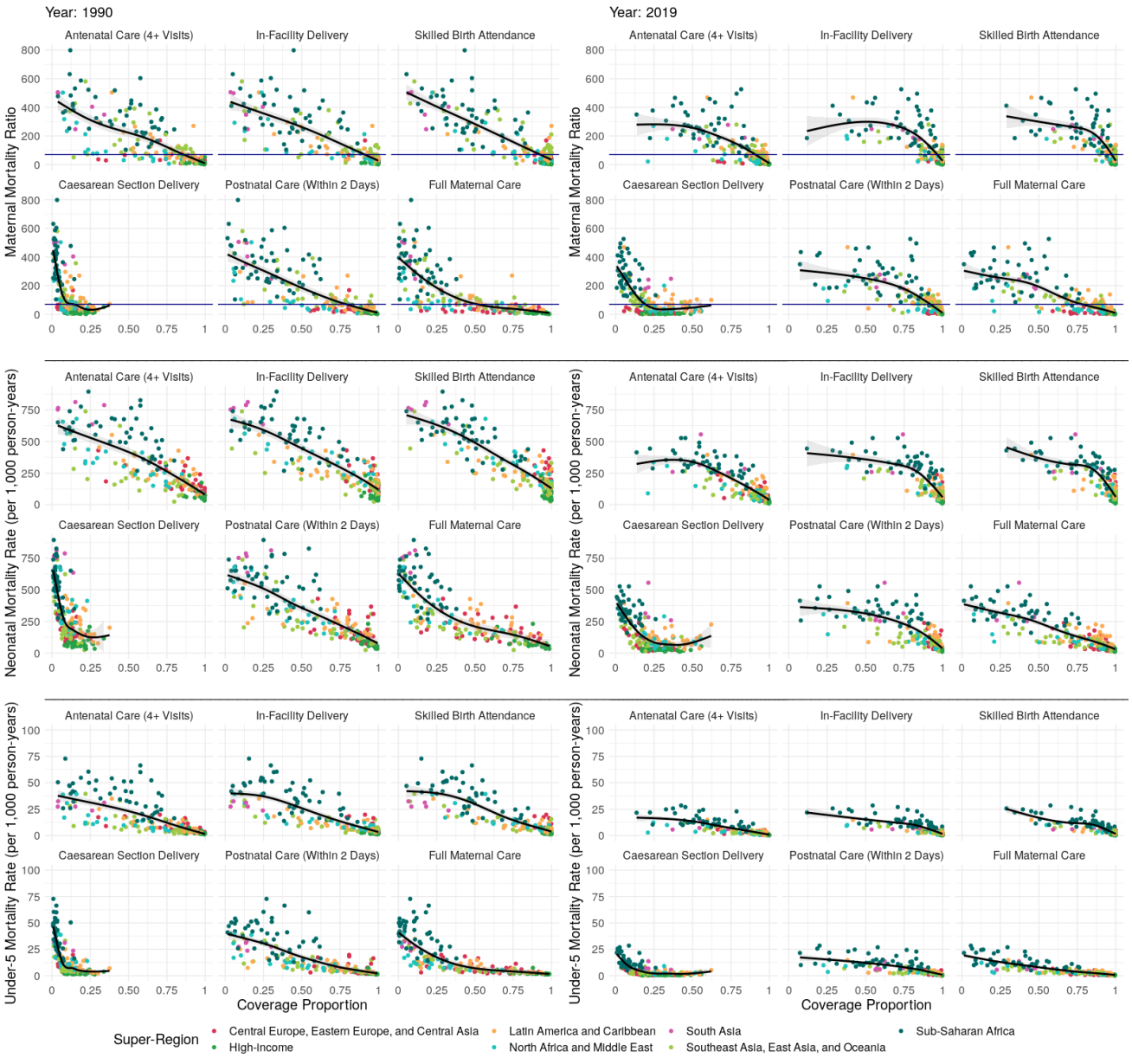
Figure 7. Number of Live Births Not Covered by Maternal Obstetric Care Interventions, 2019



Finally, Figure 8 shows results from our secondary analyses of intervention coverage and maternal mortality ratio, neonatal mortality rate, and under-5 mortality rate for 1990 and 2019. We observe strong relationships between each of these outcomes and our indicators, and these relationships have persisted over time. We see that on average higher intervention coverage is associated with lower mortality at the country level for the universally-recommended interventions; for caesarean section we observe a convex parabolic relationship, with higher levels of mortality in the countries with the lowest and highest coverage proportions. As countries have significantly

scaled up interventions over time, the relationship between many of these interventions and mortality has become more parabolic. However, in 2019 among all the indicators presented, the full maternal care intervention has the most linear relationship to these measures of mortality, and this was confirmed in basic analyses of variance (ANOVA) tests.

Figure 8. Maternal Care Interventions vs. MMR, NMR, and U5MR, 1990 and 2019



Supplemental Appendix Table 1 includes coverage results for each maternal obstetric care indicator for every location estimated in this analysis for years 1990, 1995, 2000, 2005, 2010, 2015, and 2019.

Discussion

In this analysis we produced cross-nationally comparative estimates of maternal obstetric care intervention coverage from 1990 to 2019 at the global, regional, and national levels. Among those interventions recommended for all pregnancies (antenatal care 4+ visits, in-facility delivery, skilled birth attendance, and postnatal care), many regions have achieved high levels of coverage. Of the 21 regions included in this analysis in 2019, five regions had achieved greater than 95% coverage across all of these indicators, including Eastern Europe, High-income Asia Pacific, High-income North America, Southern Latin America, and Western Europe, and three more had achieved greater than 90% coverage across all indicators, including Australasia, Central Europe, and Tropical Latin America.

All super-regions saw increases in coverage of these indicators between 1990 and 2019. In addition, some regions exhibited particularly large increases. South Asia saw increases more than double of 1990 levels across all universally-recommended indicators. Other regions that saw similar levels of growth across a subset of these indicators include East Asia (ANC4 and PNC), North Africa and Middle East (ANC4 and PNC), Eastern Sub-Saharan Africa (IFD, SBA, and PNC), Southeast Asia (IFD), and Andean Latin America (PNC). In addition, rates of caesarean section have increased in all super-regions, in some cases to levels exceeding WHO recommendations.[23] As caesarean sections come with their own risks, the optimal level expected for a country given disease burden is an area of active research.[24,25] These results can contribute to that work by providing cross-nationally comparative estimates of coverage for use in analyses comparing caesarean section coverage to outcomes such as maternal or child mortality, in addition to helping researchers and policymakers identify those countries who perform particularly well or poorly given existing levels of disease burden.

We also demonstrated significant remaining gaps in coverage, particularly in Sub-Saharan Africa and South Asia (despite the significant improvements in coverage in this region described above). Unsurprisingly, these are also the regions with the most significant burden due to maternal and child disorders, and more than 45 million live births do not receive all of these recommended prenatal, delivery, and postnatal care interventions each year. Our secondary analyses showing a strong relationship between national maternal and child mortality and coverage of these interventions, in addition to other research demonstrating the effectiveness of these interventions

in reducing mortality,[26,27] suggests that focusing on expanding coverage of these interventions in those regions with low coverage may be particularly effective for reducing this disease burden.

There are a number of noteworthy limitations related to this analysis and its interpretation. First, data availability varied significantly by indicator and across geography, as detailed in Figure 1. In particular, geographic and temporal coverage were comparatively sparse for the postnatal care and full maternal care indicators, the latter because we could only include sources with available microdata. Relatedly, data availability may impact the validity of our modeled estimates, particularly in regions that lack data in any country. Second, while some models included other indicators as predictive covariates in the first stage model, each indicator was otherwise modeled separately and unable to borrow strength across indicators where there may be strong correlations and data missing for only some indicators in a given location. Relatedly, this meant that our final estimates of full maternal care coverage could be theoretically inconsistent with our individual indicator estimates, and so we adjusted those estimates where applicable as described the Methods section. Third, while we modeled total coverage of caesarean section, a more-ideal indicator focused on care access would be the proportion of women who have access to caesarean section should it be indicated, which is not quantifiable with the sources used in this analysis. Finally, although these estimates of coverage are important indicators of access to care, they do not tell us about the quality of the care received. For example, other studies have demonstrated significant gaps between coverage of antenatal care visits and the quality of care as measured by specific antenatal care components received.[28] Thus, while these estimates are important for tracking gaps in coverage and access to care, further research should evaluate gaps in care quality, as this is also an important focus of policies and interventions to address maternal and child morbidity and mortality.

Our estimates of intervention coverage can guide policymakers and practitioners in identifying countries that have successfully scaled up coverage in recent decades as well as those that still have large remaining gaps in coverage. This can motivate further research into previous and existing health system policies and programs that have resulted in high coverage and coverage scale-up that may be generalizable to other geographies with low coverage. In addition, our estimates of full maternal care coverage expand traditional monitoring frameworks that focus on individual interventions, recognizing that these are part of a comprehensive care package

recommended for all women. This indicator also captures more broadly the continuity of care capacity of a health system, or the ability to follow and care for women throughout the duration of pregnancy, delivery, and the post-partum period. In fact, we find that in all regions the lowest coverage indicators are antenatal care (4+ visits) and postnatal care, both of which require follow-up beyond a single visit to a health facility. This continuity of care capacity is an essential aspect of health system strength that may be missed by indicators collected at a single point in time.

We have seen marked improvements in maternal and child health in recent decades, including notable reductions in maternal and child mortality alongside significant investments in public health and health care around the globe. Nonetheless, disease burden in these populations remains unacceptably high in many regions, with numerous countries projected not to reach the MMR reduction targets set in the Sustainable Development Goals.[29] Current progress in reducing maternal and child morbidity and mortality is also threatened by the ongoing COVID-19 pandemic, which may significantly disrupt health service delivery. For example, stay-at-home and social distancing orders may keep women from accessing these interventions at their home or a health facility, and health facilities may be seen as unsafe during an outbreak, which may discourage women from traveling to those facilities for care and delivery. Mitigation of these disruptions should be a major focus of national governments when developing policies aimed at addressing the COVID-19 pandemic.

Moving forward, expanding access to care during the prenatal, delivery, and postnatal periods should be a critical component of policies and programs aimed at further reducing maternal and child morbidity and mortality worldwide. Policymakers and practitioners can leverage these cross-nationally comparative estimates of intervention coverage to identify exemplar policies and programs that can be tailored to other settings and to track progress of coverage scale-up and health service delivery, supporting the work to achieve a healthier future for all women and children around the world.

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Appendix

Table 1. Covariates Tested In ST-GPR Stage 1 Mixed-Effects Linear Regressions[1]

Covariate	Definition
Sociodemographic Index	Composite measure of development based on lag-distributed income per capita, total fertility rate (ages 25+), and education years per capita over age 15
Healthcare Access and Quality Index	Index of healthcare access and quality based on observed mortality rates due to causes of death amenable to health care intervention
Total Fertility Rate	Theoretical expected number of children who would be born per woman if they were to pass through childbearing years bearing children according to current observed age-specific fertility rates
Lag-Distributed Income (I$ per capita)	Gross domestic product per capita that has been smoothed over the preceding 10 years with preferential weighting toward more recent years
Maternal Education (years per capita)	Mean level of maternal education attainment
Health Worker Density	Number of employed health workers of any specialty per capita
Universal Health Coverage	Composite measure of universal health coverage based on coverage of tracer interventions for prevention and treatment services and observed disease burden due to various component causes
Mortality Due to War/Terror	Estimates of mortality rate due to war and terrorism from the Global Burden of Disease Study
Mortality Due to War/Terror (10 year average)	Estimates of mortality rate due to war and terrorism from the GLobal Burden of Disease Study averaged over previous 10 years
Antenatal Care 4+ Visits[2]	Proportion of women that receive at least four antenatal care visits from a skilled provider (typically a doctor, nurse, midwife, or country equivalent) during pregnancy
In-Facility Delivery[3]	Proportion of all women who give birth in a health facility
Skilled Birth Attendance[4]	Proportion of all women whose deliveries are supervised by a skilled attendant (typically a doctor, nurse, midwife, or country equivalent)

[1] Covariates listed included in all models unless otherwise noted; [2] Included in Full Maternal Care model only; [3] Included in Caesarean Section, Postnatal Care, and Full Maternal Care models only; [4] Included in Full Maternal Care model only

Figure 1. Standardized Coefficients from Ensemble Stage 1 Models, Antenatal Care 4+ Visits

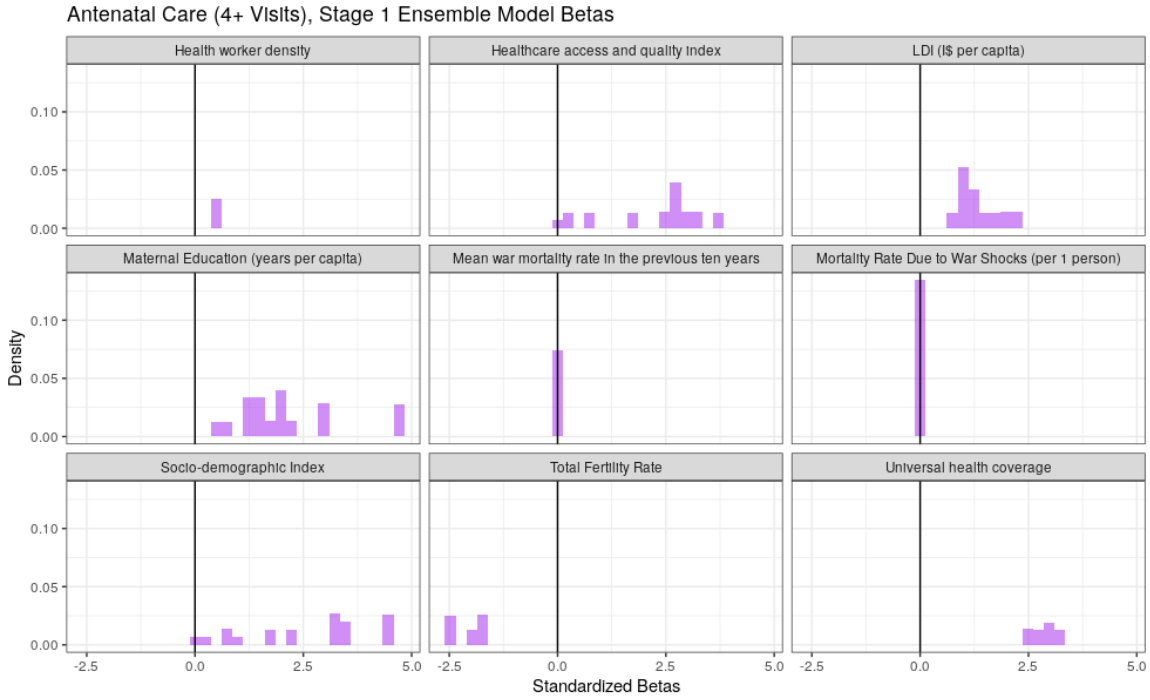

Figure 2. Standardized Coefficients from Ensemble Stage 1 Models, In-Facility Delivery

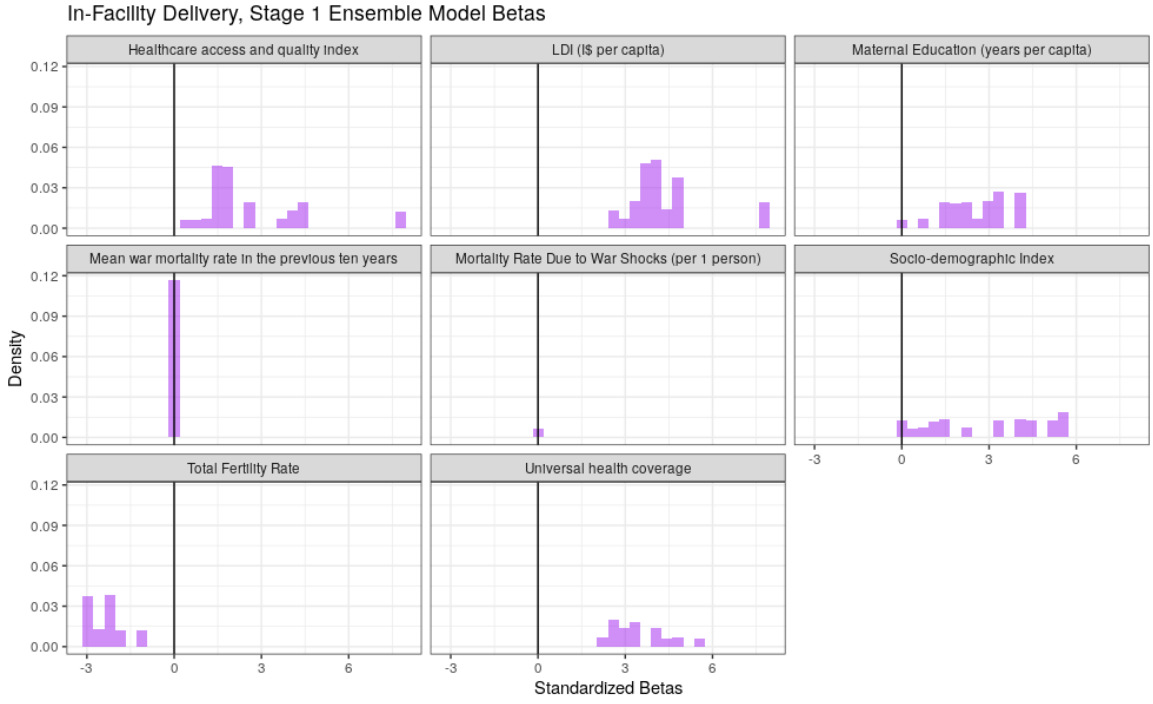

Figure 3. Standardized Coefficients from Ensemble Stage 1 Models, Skilled Birth Attendance

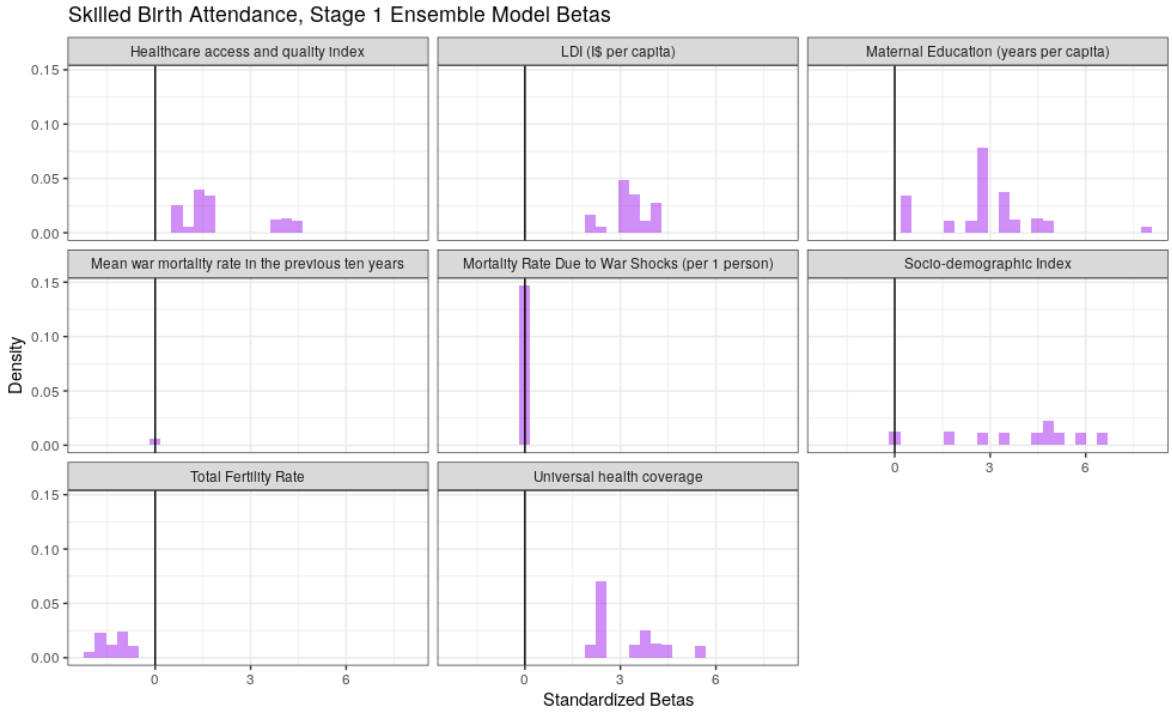

Figure 4. Standardized Coefficients from Ensemble Stage 1 Models, Caesarean Section

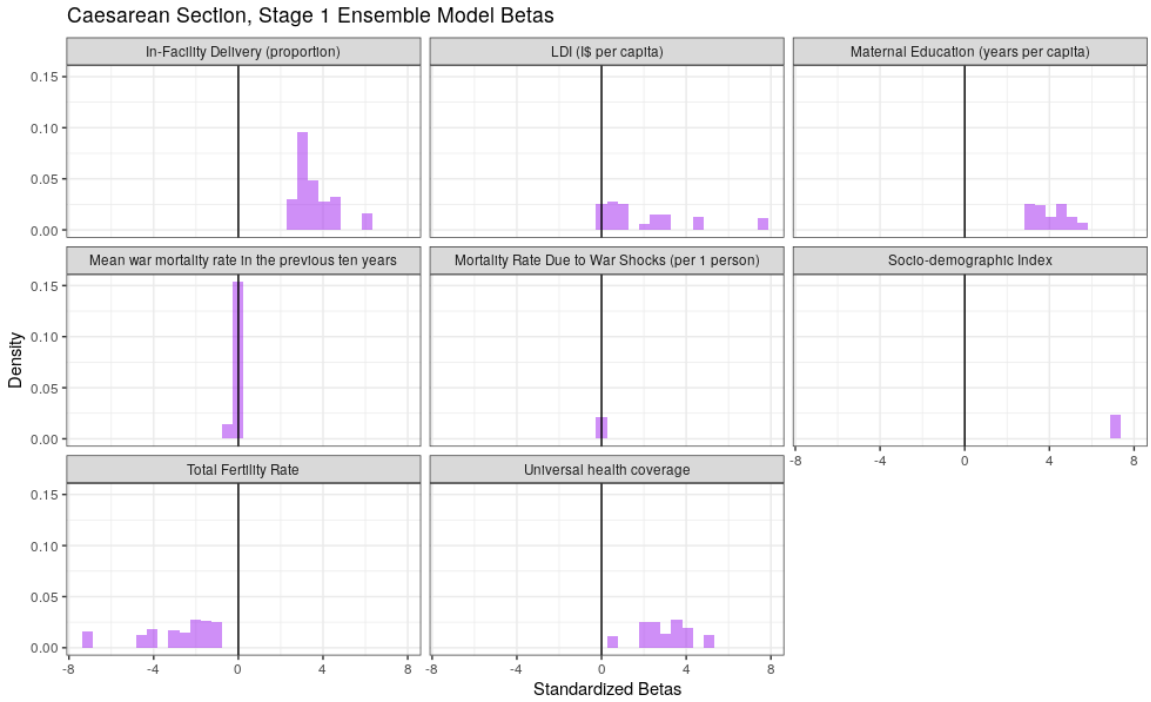

Figure 5. Standardized Coefficients from Ensemble Stage 1 Models, Postnatal Care Visit

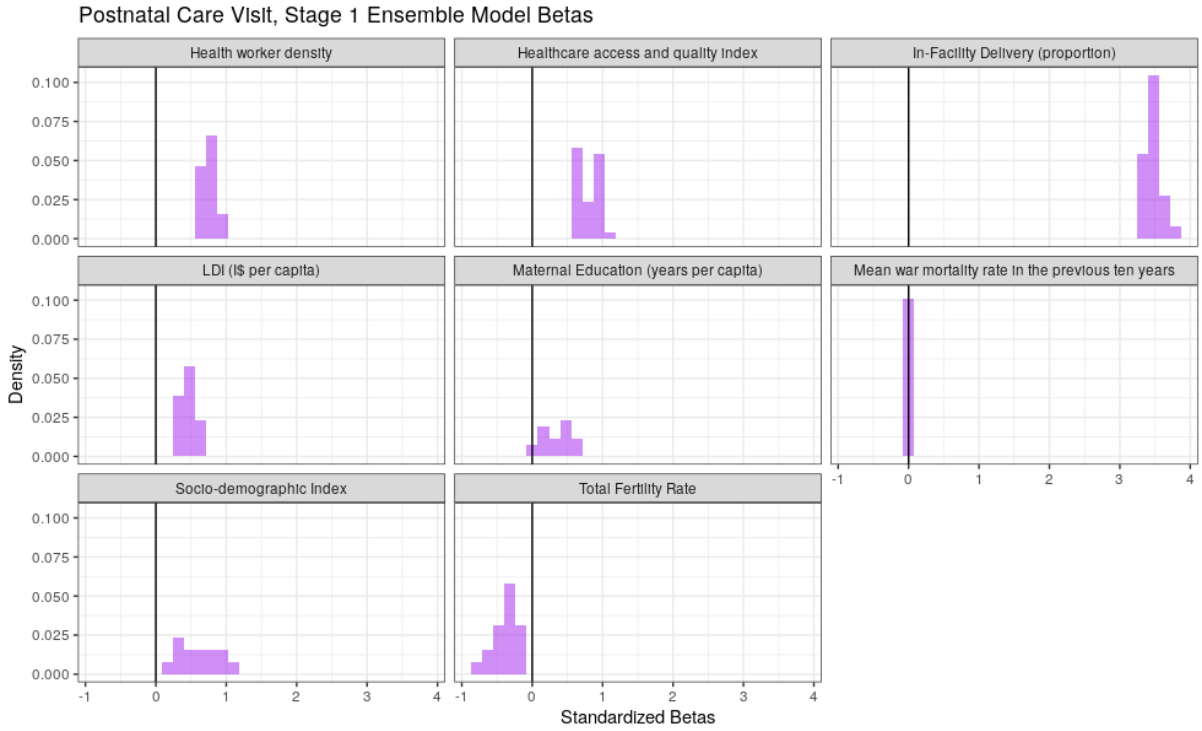

Figure 6. Standardized Coefficients from Ensemble Stage 1 Models, Full Maternal Care

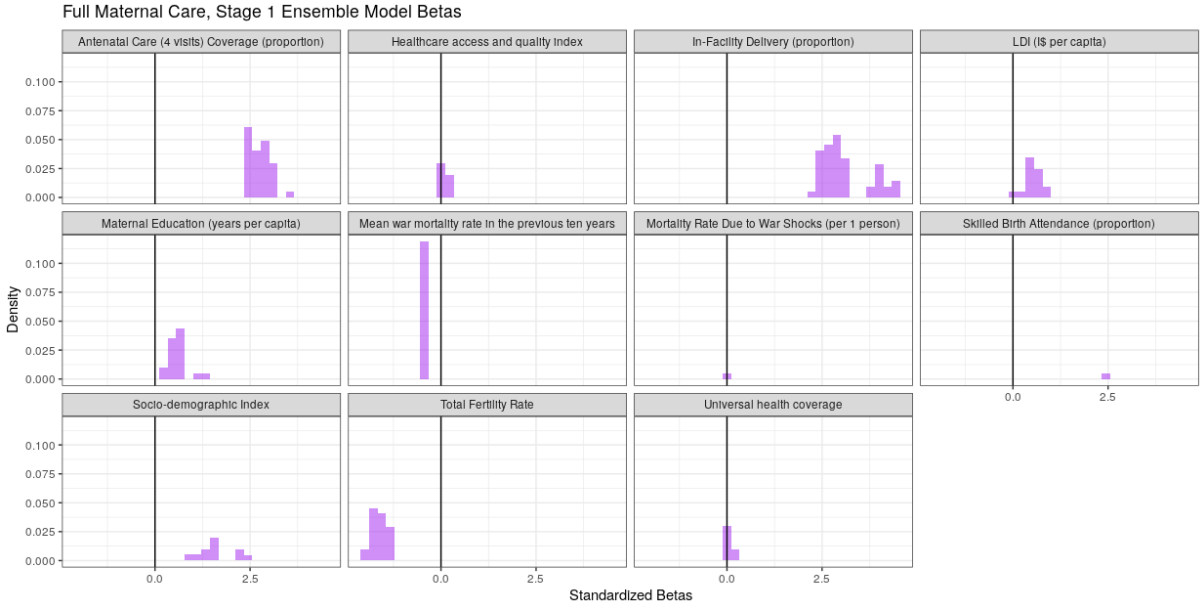

Figure 7. Full Maternal Care Coverage Correction Factors (pooled across all years)

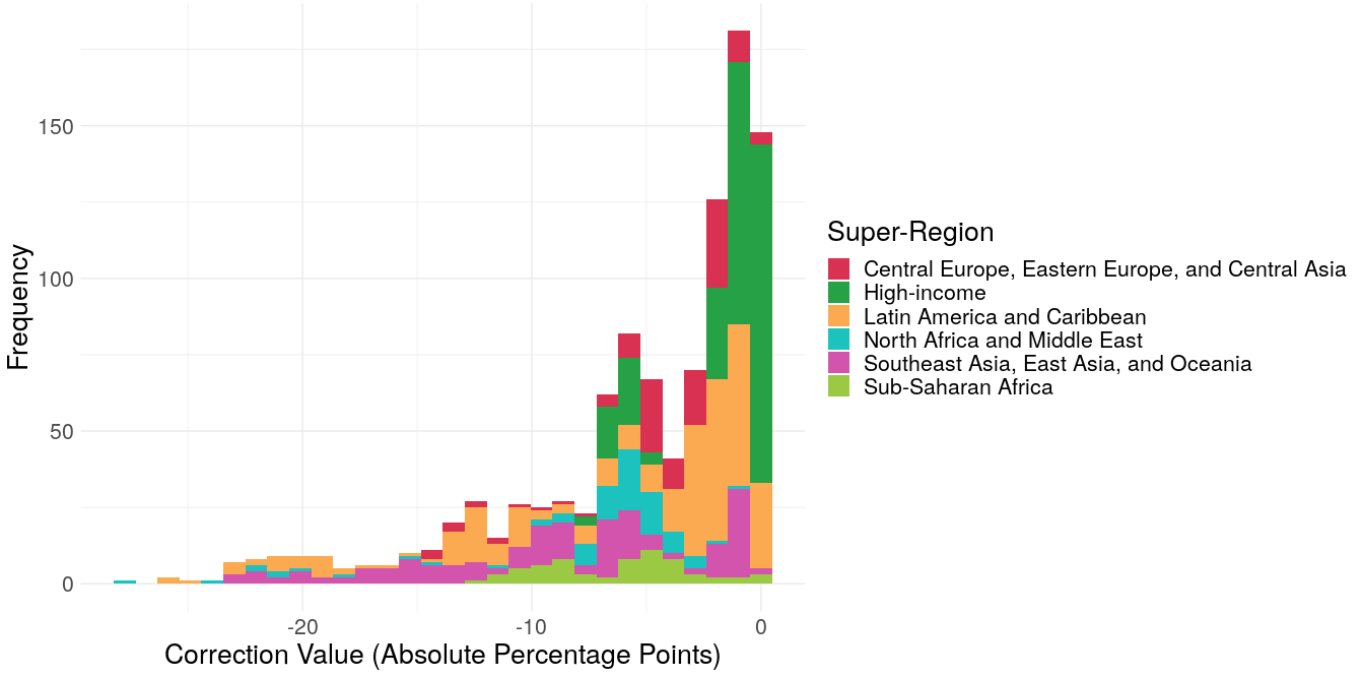

Figure 8. Full Maternal Care Intervention Coverage by Region, 2019

Table 2. Number of Live Births Not Covered by Maternal Obstetric Care Interventions, 2019

Super-Region	Antenatal Care 4+ Visits	In-Facility Delivery	Skilled Birth Attendance	Postnatal Care Visit	Full Maternal Care
Global	42.2 million (41.2 – 43.3)	24.8 million (23.4 – 26.2)	22.3 million (21.0 – 23.7)	39.2 million (38.3 – 40.2)	58.3 million (57.0 – 59.5)
Sub-Saharan Africa	17.2 million (16.7 – 17.8)	13.6 million (12.8 – 14.4)	12.6 million (11.9 – 13.4)	18.9 million (18.7 – 19.2)	26.6 million (26.4 – 26.8)
South Asia	15.3 million (14.6 – 16.0)	6.55 million (5.66 – 7.52)	6.23 million (53.2 – 72.5)	9.76 million (9.19 – 10.4)	18.6 million (17.4 – 19.8)
North Africa & Middle East	3.57 million (3.25 – 3.90)	2.13 million (1.70 – 2.62)	1.31 million (0.990 – 1.68)	3.65 million (3.54 – 3.77)	5.31 million (5.19 – 5.43)
Southeast Asia, East Asia, and Oceania	4.68 million (4.29 – 5.09)	1.75 million (1.44 – 2.09)	1.49 million (1.21 – 18.4)	5.41 million (4.74 – 6.15)	5.41 million (5.11 – 5.75)
Latin America & Caribbean	0.864 million (0.742 – 1.01)	0.797 million (0.653 – 0.963)	0.605 million (0.481 – 0.753)	1.29 million (1.22 – 1.37)	1.85 million (1.76 – 1.96)
Central Europe, Eastern Europe, & Central Asia	0.453 million (0.386 – 0.532)	0.057 million (0.040 – 0.078)	0.024 million (0.016 – 0.035)	0.200 million (0.186 – 0.216)	0.609 million (0.580 – 0.575)
High-Income	0.158 million (0.126 – 0.196)	0.083 million (0.058 – 0.124)	0.087 million (0.062 – 0.128)	0.071 million (0.063 – 0.078)	0.158 million (0.144 – 0.171)