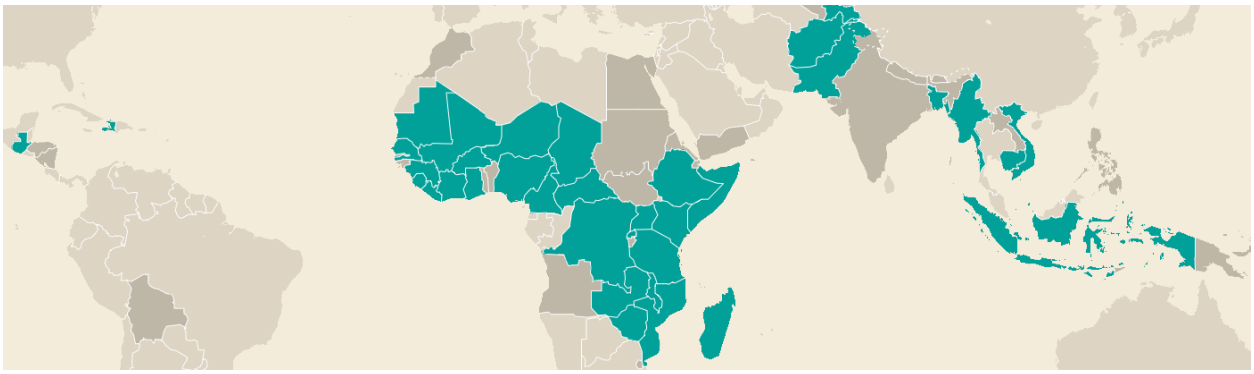
Countdown to 2030
Women's, Children's & Adolescents' Health

Progress in reproductive, maternal, newborn and child health and nutrition in the 36 GFF- supported countries



Countdown to 2030

Women's, Children's & Adolescent Health

March 2022

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I. Executive summary

This report describes overall country progress in selected areas of reproductive, maternal, newborn, and adolescent health and nutrition (RMNCAH-N) during 2017-2021 in 36 GFF-supported countries, focusing on selected indicators of mortality, nutrition, coverage, and inequalities related to the impact indicators of the GFF results framework. The analysis is primarily based on global estimates and the most recent available household surveys.

Maternal and newborn health

- Only eight countries collected new *maternal mortality* data through surveys since 2015 which in three (Pakistan, Zambia, and Zimbabwe) was suggestive of a decline.
- *Neonatal mortality* estimates, including data from recent surveys (2018 or later) in 19 countries, present a sobering picture with little decline in recent years, especially in West and Central Africa.
- Coverage of antenatal care with basic contents, intensity, and timing was below 60% in most countries; deliveries in health institutions increased in virtually all countries (median 22 countries at 72% by 2018-19, up from 59% in 2014).
- Good progress in coverage, but major gaps in effective antenatal care coverage and limited progress in newborn and maternal survival shows that efforts to improve the quality of care still have a long way to go in most countries.

Child health and nutrition

- Under-5 mortality continued to decline during 2015-2020, but slower than during 2010-15. Mortality after the first month of life (children 1-59 months) declined faster than during the neonatal period. Subnational gaps in under-5 mortality are often large and will need to be prioritized further to accelerate progress.
- Stunting rates among under-fives came down in virtually all GFF countries at an annual rate of reduction of about 2.3% during 2015-2018/19. However, in 16 of 28 countries with 2018/2019 data stunting prevalence is still above 30%.
- Immunization coverage did not increase during 2015-2020 in most countries.

Adolescent fertility, birth intervals and family planning

- A slow drop in adolescent fertility occurred in two-thirds of 27 countries with recent data.
- The prevalence of short birth intervals appeared to be on the increase, but data are limited
- Coverage with modern methods of family planning increased from a country median of 41% to 45%, but only 12 of 26 countries have more than 50% of demand for modern methods satisfied.

Inequalities in RMNCH coverage

- Inequalities in RMCNH coverage are large and persisting. The size of the gaps between the poorest and richest, and by subnational units varied considerably between countries.
- With an absolute increase of the RMCNH composite coverage index (CCI) of 1-2 percentage points per year, a pace of improvement observed during the MDGs, it will take the poorest often more than a decade to reach even the current level of the richest.

Covid-19 and the continuation of RMNCH services

In general, the greatest impact on RMNCH health service utilization and provision was in 2020, especially during the early months of the pandemic, when a strong government response affected all health services.

The COVID-19 incidence and mortality rates were often larger in subsequent waves, but, with notable exceptions, the disruptive impact on non-COVID health services appeared more limited. Health facility data analyses in multiple settings suggests that declines in RMNCH service use were smaller than for most other health services. Even though the impact on survival and health of women and children was much smaller than the initial models predicted, the pandemic's impact may still be large enough to derail the fragile progress towards the 2030 SDG health targets.

The overall results are encouraging in terms of the coverage indicators (delivery care and modern family planning) and adolescent fertility, but immunization coverage appears to be stagnant, and the mortality decline is slowing down. Some countries have made real progress towards reducing inequalities in RMNCH coverage between the poorest and richest, but in most, the gaps are large and hardly reducing. Disruption to continuation of services due to COVID-19 were generally small but impact may still be substantial. Due to the reliance on retrospective data from surveys, it is too early to assess progress in maternal, newborn and child mortality after 2017 but data from the countries with surveys in 2017-2020 provide little evidence of the required acceleration to reach the SDG targets by 2030. In addition, countries in West and Central Africa and fragile states are lagging.

II. Introduction

The Countdown to 2030 for Women's, Children's and Adolescents' Health, a global collaboration of academic institutions, international agencies, and civil society, aims to generate evidence to improve the health of women, children and adolescents in low- and middle-income countries. In addition to its work on global and regional monitoring and measurement, the Countdown to 2030 now focuses on working with country public health institutions and ministries of health in GFF-supported countries to assess progress and performance of country programs and investment cases, and to strengthen the country analytical capacity. Such Countdown country collaborations have been established in initially 15 countries, financially supported by the Bill & Melinda Gates Foundation.

Starting in 2022, the Countdown will work closely with GFF to produce an annual synthesis of the in-depth information generated through the country collaborations. The current document is a predecessor of such reports, based on data publicly available to the Countdown, providing a general assessment of the current situation and progress in the initial 36 GFF priority countries. The focus is on selected key areas of reproductive, maternal, newborn, and adolescent health (RMNCAH) and nutrition related to the impact indicators of the GFF results framework divided into three main areas: maternal mortality, newborn mortality, institutional deliveries, and antenatal care with a quality component; under-five mortality, child nutritional status and immunization coverage; and adolescent fertility, child spacing and family planning coverage. A fourth section examines inequalities in coverage of RMNCH interventions using the Countdown composite coverage index. The final section will synthesize what is known about the impact of the COVID-19 pandemic on the continuation of health services using selected indicators of reproductive, maternal, newborn and child health.

This analysis focuses on changes that occurred post-2015 and especially from 2018. The aim is not to attribute results to GFF but to describe the country trends for three reasons. First, the GFF principles are about supporting overall country results, as part of country-owned national plans and based on the collective domestic and international investments. Second, GFF investment cases are still young, and the timing varies greatly among the 36 countries: 8 countries started before June 2017 and 14 during 2017-2020, and other countries were still developing their investment cases by 2020 (Table 1). Third, data limitations preclude a detailed assessment in most countries. In our assessment we primarily relied on household surveys, expecting that from 2022 onwards greater insights about progress and performance can be synthesized directly from the Countdown country collaborations, especially at the subnational level. A brief description of the first endline outcome review of progress in the context of the investment case, Uganda, is given in Box 1. Future analyses will focus on within-country progress linked to the prioritization of districts of regions.

Most countries (24/36) conducted at least one comprehensive RMNCAH and nutrition survey (DHS or MICS) that ended in 2018 or later, 17 countries completed national topic-specific surveys such as family planning (PMA 2020), nutrition (also known as SMART surveys) or malaria indicator surveys (MIS) (Table 1). We maximized the use of recent surveys by extracting data from preliminary reports for recently completed surveys, where needed. All coverage and inequality statistics data were produced by the International Centre for Equity in Health at the Federal University of Pelotas for the Countdown to 2030.[1] We extracted data from UN databases on maternal mortality, child mortality, immunization coverage and stunting.[2]

[1] www.equidade.org
[2] WHO Maternal mortality estimates; UN-IGME mortality estimates; WHO/UNICEF WUENIC database;

Table 1: GFF-supported countries with GFF start month/year and DHIS, MICS and other national surveys by type since 2017.

Country	GFF start	DHS	MICS	NNS	MIS	PMA	Other
West & Central Africa							
Burkina Faso	Dec-18			2021	2018	2021	
Cameroon	Dec-16	2018					
Central African Republic	Dec-18		2019	2019			
Chad	-		2019	2019			
Cote d'Ivoire	Jul-19					2018	
DR Congo	May-16		2018				
Ghana	-		2018		2019		
Guinea	Aug-18	2018			2021		
Liberia	Jun-17	2020					
Mali	May-19	2018		2019	2021		
Mauritania	-		2018	2018			
Niger	-			2021	2021	2017	2021
Nigeria	Feb-17	2018					
Senegal	Apr-20	2019		2020			
Sierra Leone	-	2019	2017				
Eastern & Southern Africa							
Ethiopia	May-17	2019				2018	
Kenya	Sep-16				2020	2017	
Madagascar	-		2018				
Malawi	Mar-19		2020		2017		
Mozambique	Apr-18				2017		
Rwanda	Jul-18	2020			2017		
Somalia	-						
Tanzania	Nov-15			2018	2017		
Uganda	May-17				2019	2018	
Zambia	-	2018					
Zimbabwe	-	2018	2019				
Asia							
Afghanistan	Apr-18			2018			2018
Bangladesh	Oct-17	2018	2019				
Cambodia	Jun-19						
Indonesia	Sep-18	2017					2018
Myanmar							
Pakistan	-	2018		2018			2019
Tajikistan	-	2017					
Vietnam	-		2021	2017			
Latin America & Caribbean							
Guatemala	Sep-18						
Haiti	Aug-19	2017					

*NNS National Nutrition Survey; MIS Malaria Indicator Survey; PMA Family planning survey; surveys are listed by end year of data collection; GFF start is the month the investment case was signed

UNICEF/WHO/World Bank Joint Child Malnutrition Estimates Expanded Database.

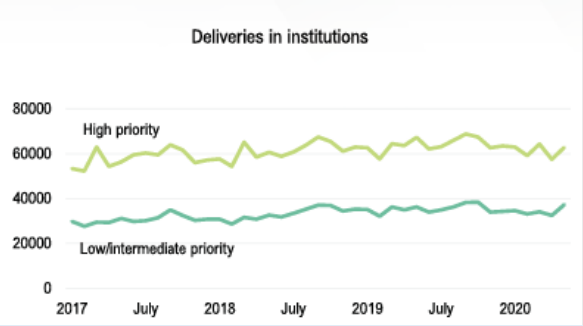
Box 1

Endline review of the Uganda Investment Case and national plan

The Uganda investment case for the government's Reproductive, Maternal, Newborn, Child, and Adolescent Health Sharpened Plan in Uganda, 2015/16 - 2019/20, was one of the first GFF investment cases. The review was undertaken by the Maternal Newborn and Child Health Centre of Excellency, School of Public Health, Makerere University, Uganda, in collaboration with the Countdown to 2030 for Women's, Children's, and Adolescents Health, the Uganda Ministry of Health, and the World Bank. It was based on analysis and synthesis of existing data, especially the health facility data (from the DHIS2) which was used to assess progress on key RMNCAH indicators, focusing on trends from 2015 to 2019, health-related surveys conducted in 2015 or later (PMA, MIS, and UDHS), and qualitative work in 15 districts.

The country made steady progress during the investment case's implementation period on several key indicators of the RMNCAH continuum of care. However, most did not reach the set targets. The progress is too slow to reach the Sharpened Plan's ambitious targets and the investment case. By 2019, there was no evidence that the targeting of high population districts accelerated the trends in those districts. The main cause for this was limited and delayed implementation despite the availability of additional resources from the GFF. Overall, the review considered the first investment case implementation period as a learning and foundational phase, whose lessons should be used to inform the next phase.

Example from report: Monthly trends for deliveries in institutions and 4th antenatal care visits (numbers), 2017-2020



III. Maternal and newborn health

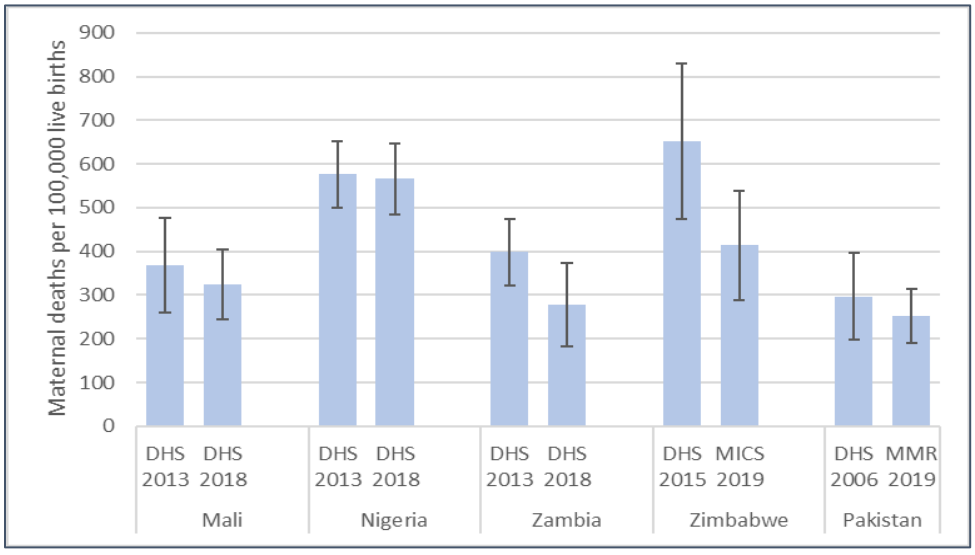
Maternal mortality

The 2019 release of UN maternal mortality estimates indicates a modest decline of maternal mortality between 2015-2017 in all developing regions and GFF-supported countries, well short of the required pace to reach the 2030 SDG target. Maternal mortality was highest in West and Central Africa with 674 deaths per 100,000 live births in 2017 (down from 699 in 2015), followed by Eastern and Southern Africa (384, down from 406) and South Asia (163, down from 179). The average annual rate of decline was 3.5% in the 36 GFF countries combined.

The global SDG target for maternal mortality by 2030 is 70 per 100,000 live births. No country should have MMR exceeding 140 by 2030, according to the full set of targets developed by the Ending Preventable Maternal Mortality initiative.[3] According to the estimates, the current annual rate of reduction in the 15 GFF countries in West and Central Africa (almost 7% per year) needs to increase to 11% per year to reach 140 and to 16% to reach 70 per 100,000 live births by 2030.

These estimates, however, tell us little about trends in recent years, since these are predictions based on past trends and as well as trends in skilled birth attendance, fertility, and economic growth. The lack of recent data is compounded by the absence of quality death registration systems in most GFF-supported countries and limitations of the sibling survival histories used in surveys to collect maternal mortality data. Surveys give only a crude approximation of maternal mortality and estimates generally refer to the period of seven years preceding the survey.[4]

Figure 1: Pregnancy-related mortality per 100,000 live births for the seven years preceding the survey (with 95% confidence intervals), national surveys 2018 or later compared to preceding survey



[3] https://www.who.int/reproductivehealth/topics/maternal_perinatal/epmm/en/

[4] To be able to compare with previous surveys maternal mortality estimates include accidental deaths (also referred to as pregnancy-related mortality).

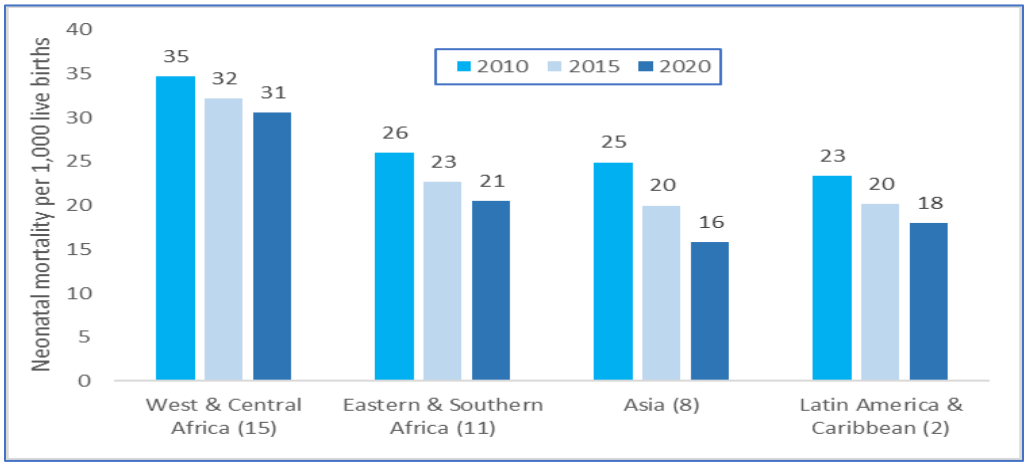
No GFF-supported country generates reliable maternal mortality estimates from a death registration system except Tajikistan. It will take many years of civil registration and vital statistics (CRVS) system investments before these will result in reliable cause-specific mortality statistics. After 2015, only 8 of the 36 countries collected new maternal mortality data through surveys, including Haiti, Senegal, and Bangladesh in 2016/17. In the 2016 Bangladesh maternal mortality survey, no decline was recorded compared to a similar survey in 2010 (206 and 201 per 100,000 live births respectively).[5] Among the five countries with a 2018/19 survey, data from Zambia, Zimbabwe and Pakistan suggest a decline in maternal mortality (although 95% confidence intervals are overlapping between the surveys), while Mali and Nigeria had similar levels as surveys five years earlier (Figure 1). The dearth of maternal mortality data is striking, and it is currently not possible to conclude whether the pace of decline is accelerating after 2015.

Neonatal mortality

According to 2022 UN estimates, neonatal mortality in the GFF countries declined in all subregions at an average annual rate of change of 2.3% and 1.6% during 2010-2015 and 2015-2020, respectively (Figure 2). The pace of the decline was slower during 2015-2020 compared to the preceding five-year period in the two subregions in sub-Saharan Africa and remained far from the required pace to reach the SDG neonatal mortality target of 12 per 1,000 live births by 2030.

Countries in West and Central Africa have the highest neonatal mortality (median of 15 countries was 31 per 1,000 live births), and the average annual pace of decline is slowest (1.0% per year during 2015-2020). In Eastern and South Africa, and in Guatemala and Haiti, a substantially faster rate of decline is required as well to reach the SDG target. The Asian GFF countries are on target, although the regional median conceals considerable heterogeneity. Three countries – Afghanistan, Myanmar, and Pakistan – also need a major acceleration of the pace of neonatal mortality decline.

Figure 2: Estimates of neonatal mortality per 1,000 live births, country medians by subregion (in parentheses the number of countries in subregion), UN IGME, 2010-2020



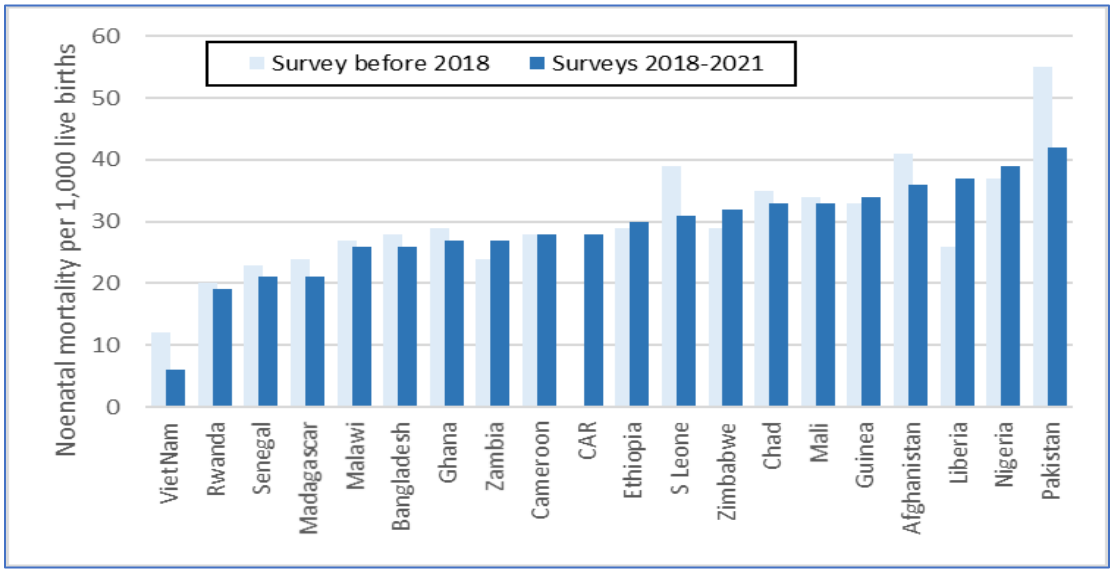
There are more recent data for neonatal mortality than for maternal mortality: 19 of the 36 countries conducted a national survey that ended in 2018 or later. The comparison of these survey results with the

[5] El Arifeen S, Hill K, Ahsan KZ, Jamil K, Nahar Q, Streatfield PK. Maternal mortality in Bangladesh: a Countdown to 2015 country case study. *Lancet*. 2014;384(9951):1366-1374.

previous survey provides a further impression of recent changes in neonatal mortality, even though survey mortality rates generally refer to the five-year period before the survey.

The neonatal mortality picture in most countries is sobering (Figure 3). The median neonatal mortality for the 19 countries increased from 29 to 30 per 1,000 live births between the last two surveys. Positive changes were observed in Viet Nam, Pakistan, Afghanistan, Sierra Leone, and Senegal, where neonatal mortality declined at least 2.0 percentage points per year. At the other end, neonatal mortality increased at least 2.0 percentage points per year between the surveys in Liberia, Zimbabwe, and Zambia.[6]

Figure 3: Recent survey data on neonatal mortality per 1,000 live births for the five years preceding the survey, GFF countries with a national survey that ended in 2018-2020



Antenatal care with quality

Against a backdrop of increasing utilization of maternal and newborn health services, quality of care is a primary concern. Quality of care is more difficult to measure, but some aspects can be captured in household surveys through questions to women of reproductive ages. In most countries, nearly all women received at least one antenatal visit, a measure of basic access to services. If we add measures of intensity and basic contents of antenatal care, including the number of visits, the timing of the first visit, skilled provider contact in at least one visit, blood pressure measured, urine and blood taken for lab testing and two or more doses of tetanus toxoid received - coverage of antenatal care services drop dramatically in most countries. This is indicative of losses in potential effectiveness of antenatal care: starting too late in pregnancy, too few visits, and too limited in contents.[7] The indicator has been referred to as ANCq coverage.

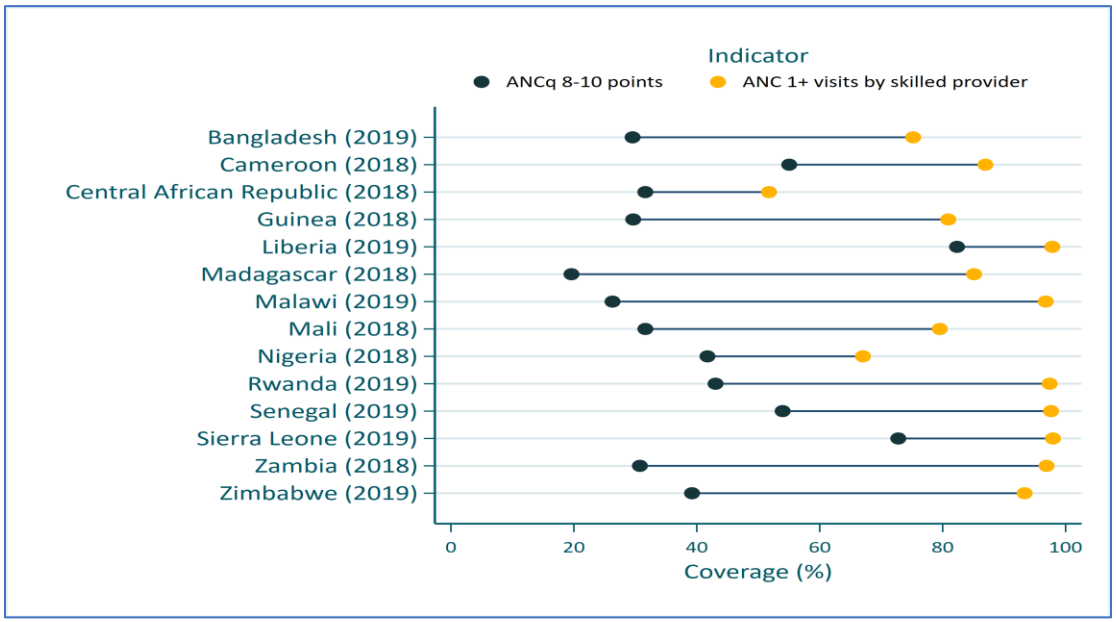
[6] Also, DR Congo experienced a major decline between the 2013/14 DHS and 2018 MICS. However, the magnitude of this decline is highly improbable. It is likely that neonatal deaths were heavily underreported in the 2018 MICS and therefore the mortality rate of 14 per 1,000 live birth is believed to a major underestimate.

[7] The ANCq indicator has been described as "a content qualified ANC indicator and is a weighted indicator calculated as a score, composed of seven variables which add points to the score. The maximum score is 10 points.

In half of the 14 countries with a survey in 2018 or 2019, well over 90% of pregnant women received at least one antenatal care visit (Figure 4). This is indicative of high levels of access but does not translate into high levels of ANCq coverage. In five of the high ANC1 coverage countries (Malawi, Rwanda, Senegal, Zambia, and Zimbabwe) ANCq is at least 25% lower than ANC1 coverage. Only in Liberia and Sierra Leone is the loss due to inadequate quality smaller, once frequency and content dimensions are considered, perhaps surprising given the high mortality levels in these two countries.

Similar large drops in quality are also observed in the other seven countries with ANC1 coverage below 90%. This includes Nigeria and Central Africa Republic where not only ANCq coverage is low, but also ANC1 contact coverage was below 70%, indicating that still much needs to be done to create demand and improve basic access to antenatal care services.

Figure 4: Equiplot of coverage of first antenatal visit (yellow dots) and percent pregnant women who received antenatal care with selected characteristics (ANCq) (dark blue dots), 2018-2019 surveys



Institutional deliveries

Institutional delivery is highly correlated with skilled birth attendance and is less likely to be affected by reporting biases and classification differences. The median coverage of 22 countries was 59% in the first survey (median survey year 2014) and 72% in the second survey (median year 2018), corresponding with an average rate of increase of 3.7% per year. The wide range is striking from over 95% in Malawi, Viet Nam and Rwanda to less than 50% in Ethiopia, Nigeria and Haiti, according to the most recent surveys (Figure 5).

The percent of women who delivered in a health facility increased in all but two countries in the period between the two most recent surveys: Tajikistan remained at a high of 88%, and the institutional delivery

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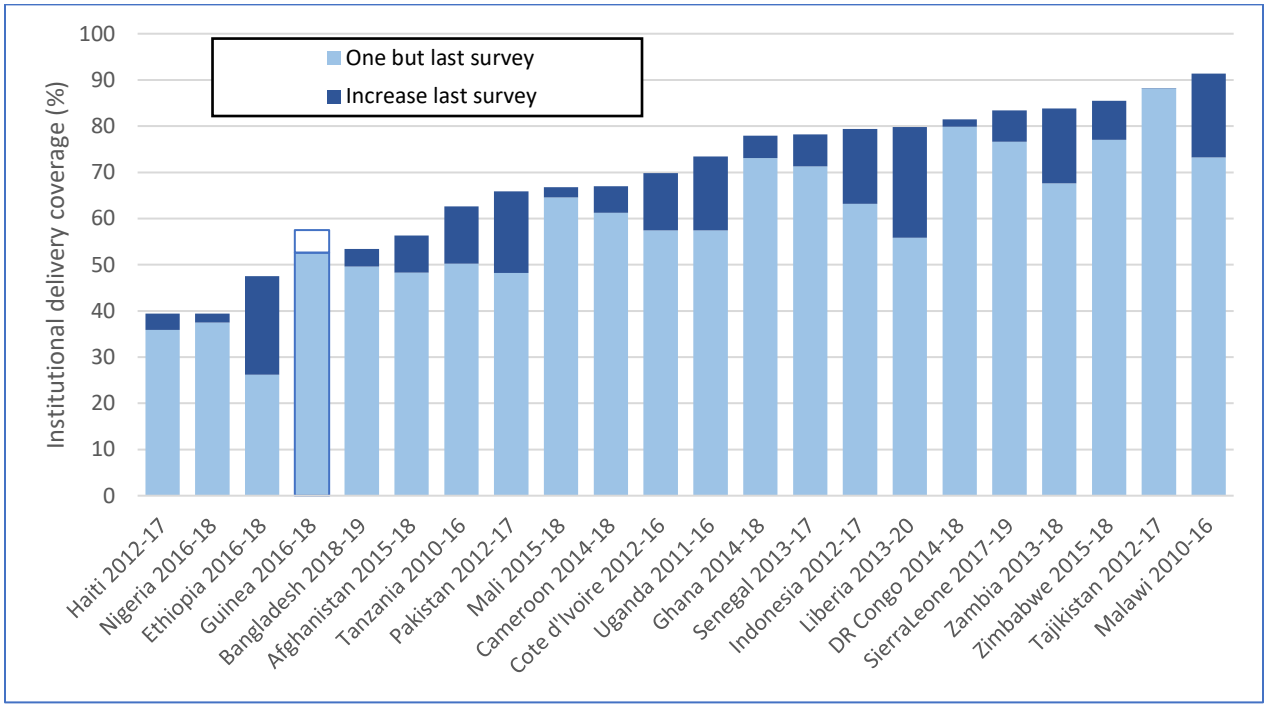
Here we considered 8-10 points as adequate. Arroyave L, Saad GE, Victora CG, Barros AJD. A new content-qualified antenatal care coverage indicator: Development and validation of a score using national health surveys in low- and middle-income countries. J Glob Health. 2021;11: 04008.

rate in the 2018 DHS in Guinea (53%) was slightly lower than the 2016 MICS (58%). The fastest increases in institutional delivery coverage were observed in Ethiopia (from 26% to 48% during 2016-2019), Liberia (56% to 70% during 2013-2020) and several Asian countries such as Pakistan (from 48% to 66% during 2013-2017) and Afghanistan (from 48% to 56% during 2015-18). In many other countries in sub-Saharan Africa major increases were observed as well.[8]

Figure 5: Institutional delivery (%), national surveys, GFF countries with a survey during 2010-15 and 2016-2020 (dark blue box shows increase since one-but-last survey; transparent box shows decrease (Guinea))



[8] Since for most countries data sets were not yet available, we were not able to assess statistical significance of these trends. The increases however are in many countries part of a longer-term increase: there was also an increase between the second-to-last and one-but-last survey.

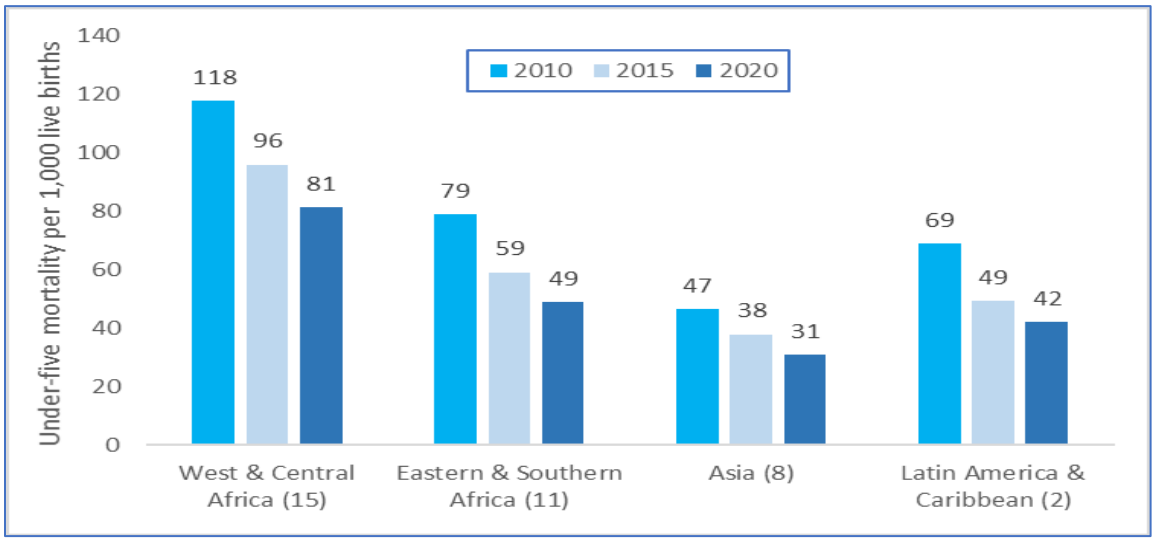
IV. Child health and nutrition

Under-five mortality

The median under-five mortality in the 36 countries in 2020 was 59 per 1,000 live births according to the UN-IGME estimates, down from 69 in 2015 and 88 in 2010. A decline occurred in all countries and the average annual pace of reduction during 2015-20 was 3.0% per year, compared to 4.6% during 2010-15.

The differences between West and Central Africa and the other subregions are large (Figure 6). By 2020, five countries still had estimated levels of under-five mortality exceeding 100 per 1,000 live births, including Central African Republic, Chad, Guinea, Nigeria, Sierra Leone, and Somalia. Three countries had already reached the 2030 target of the SDGs (25 per 1,000 live births), including Viet Nam, Indonesia and Guatemala, while Cambodia and Bangladesh were close to the target.

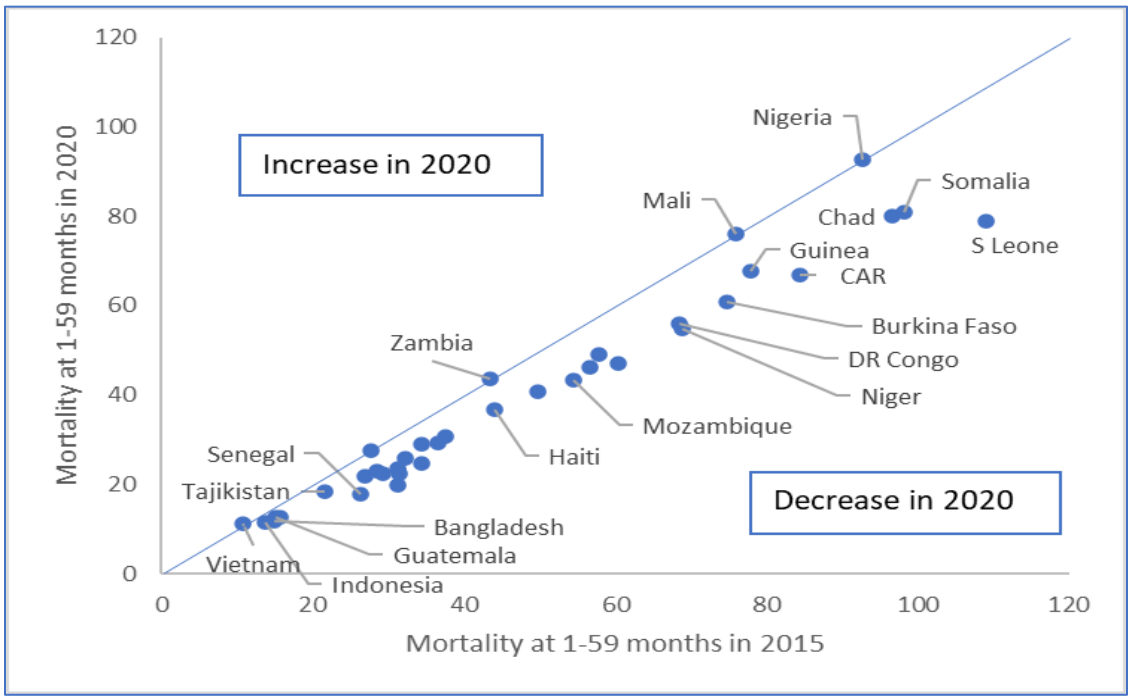
Figure 6: Under-five mortality per 1,000 live births, country medians by subregion (in parentheses the number of countries in subregion), UN IGME estimates, 2010-2020



Focusing on mortality after the neonatal period, that is 1-59 months, major reductions can be observed in almost all countries between 2015 and 2020. In almost all 36 countries, UN estimates show continuing declines in mortality rates at 1-59 months during 2015-2020, and more than half of these country estimates include results from recent surveys (Figure 7). The median average annual rate of mortality decline was 4.1% per year, 2.5 times faster than neonatal mortality. Therefore, the trend of increased concentration of under-five deaths in the neonatal period is continuing. In 2010, 35% of all under-five deaths occurred the neonatal period in the 36 countries, increasing to 40% in 2015 and 43% in 2020.

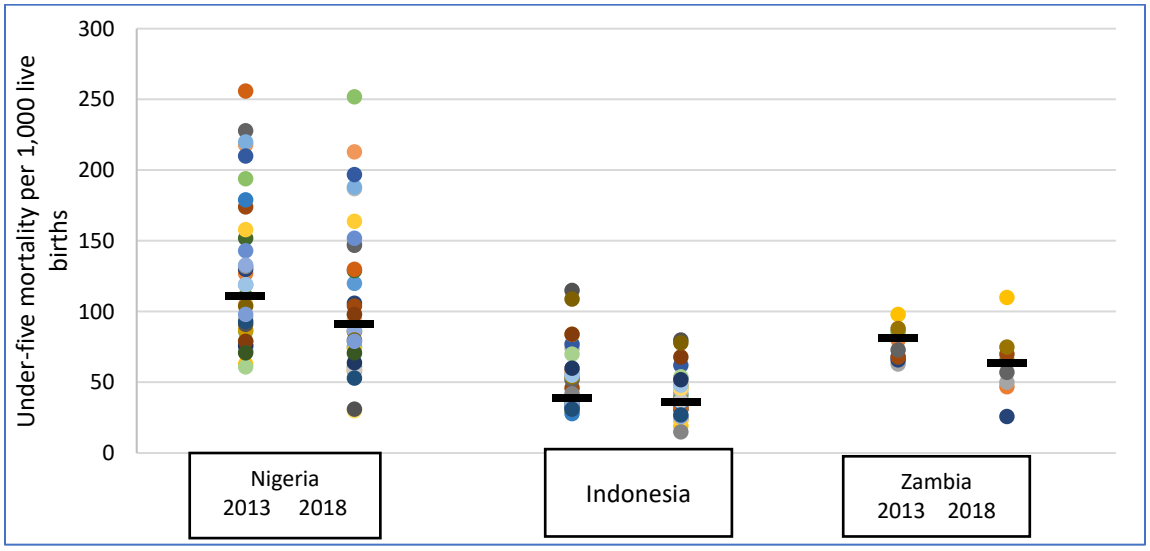
The national figures mask great variation in subnational inequalities between countries. Most countries have large differences between regions or provinces. An extreme example is Nigeria. There was a modest reduction in overall under-five mortality but inequalities between the 37 states remained large and did not reduce between the DHS 2013 and DHS 2018 (Figure 6). The interquartile range was 76 per 1,000 live births in 2018, slightly higher than in 2013 (72 per 1000 live births). Mortality was six times higher in several northern states (Kebbi, Jigawa, Gombe, Kaduna and Sokoto) compared to the lowest mortality states in DHS 2018 (Ondo, Bayelsi).

Figure 7: Mortality at 1-59 months per 1,000 children (after the neonatal period and before the fifth birthday) per 1,000 live births by country, 2000 and 2020, UN IGME estimates, GFF-supported countries



A positive example is Indonesia, where the gap between the lowest and highest under-five mortality province narrowed between the DHS 2012 and DHS 2017. The interquartile range reduced from 22 to 16 per 1,000 live births. However, Papua, West Papua and North Maluku are still outlying provinces with mortality rates three times higher than the low mortality provinces.

Figure 6. Under-five mortality per 1,000 live births by province / state in and Nigeria, Indonesia, and Zambia (dash indicates median).

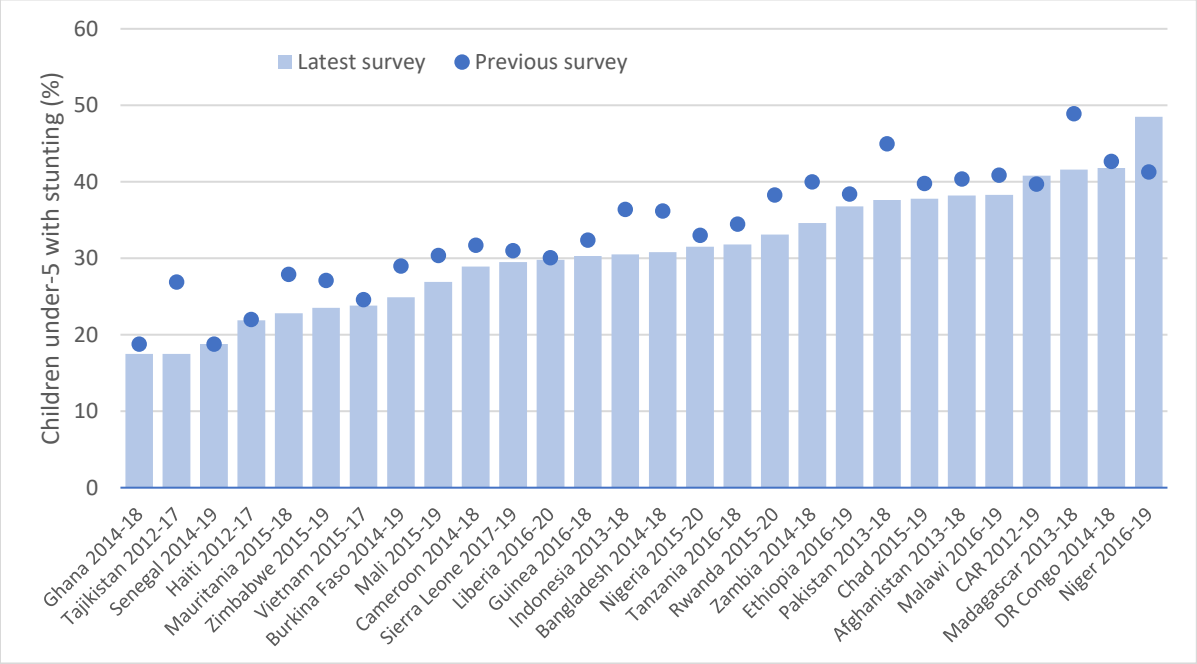


In the third example, Zambia, under-five mortality declined nationally between the DHS 2013 and DHS 2018 but the gaps between provinces increased to a more than fourfold gap between the lowest and highest mortality provinces (Northwestern and Luapula).[9]

Stunting among children under 5 years

To ascertain trends in stunting in under-fives, we focused on countries with a survey in 2017 or later and compared the results with a survey conducted 2-6 years earlier. In the case of multiple surveys, the same type of survey was selected from the DHS, MICS, and national nutrition surveys. Twenty-eight countries met the selection criteria with, on average, an earlier survey in 2015 and a recent survey in 2018. Data availability for anthropometric indicators is the best among all indicators considered in this report.

Figure 8: Percent of children under-5 years with stunting (below -2 SD height for age), national surveys, GFF countries, earlier surveys (bar) and most recent surveys (dots, countries ordered by most recent prevalence)



Stunting levels ranged from 17.5% in Ghana to 48.5% in Niger which was the only country that registered a higher prevalence in the most recent survey (Figure 8). Overall, stunting decreased at an average annual rate of 2.3% per year in the period between the two surveys in the 28 countries. Seven countries had no or little change (Senegal, Haiti, Viet Nam, Liberia, Nigeria, Central African Republic, and DR Congo). The five countries with an annual rate of decline of at least 4.0% were Bangladesh, Tajikistan, Mauritania, Mali, and Tanzania.

Immunization coverage

The WHO/UNICEF annual joint estimates are based on a reconciliation of reported coverage statistics based on routine health facility data and data from household surveys.[10] The estimates of coverage of three doses

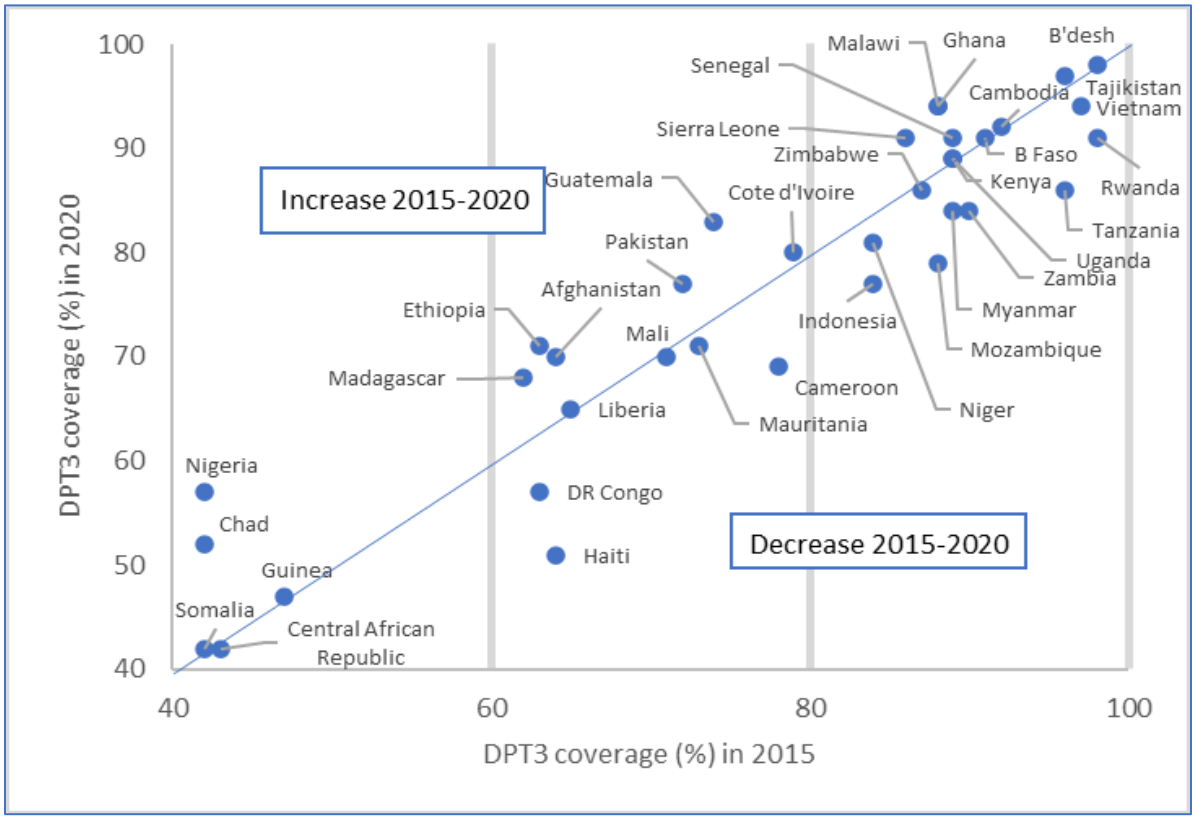
[9] Further examination of the mortality differences between provinces, regions or states is needed as confidence intervals are large even thought the rates refer to the 10-year period prior to the survey.

of DPT/pentavalent vaccine in 2015 and 2020 were similar in most countries and only few major shifts occurred (Figure 9). The mean of the 36-country average remained at 77% in 2015 and 2020 (median decreased from 84% to 81%).

Among the lowest coverage countries (<60%), Nigeria and Chad increased at least 10 percentage points during 2015-2020, but Guinea, Somalia and Central Africa Republic made no progress. Twelve countries had coverage rates between 60 and 80% in 2015. By 2020, five countries had increased coverage with at least 5 percentage points: Pakistan, Afghanistan, Guatemala, Ethiopia, and Madagascar. Haiti, DR Congo, and Cameroon, all three countries with political instability, observed decreases of at least 5 percentage points.

In the highest coverage group of countries (>80%), Malawi, Ghana and Sierra Leone increased coverage by at least 5 percentage points, while six countries dropped by at least 5 percentage points: Tanzania, Rwanda, Myanmar, Indonesia, Zambia, and Zimbabwe.

Figure 9: Coverage of three doses of DPT3 (pentavalent vaccine) in infants among GFF countries in 2015 and 2020 according to WHO/UNICEF estimates



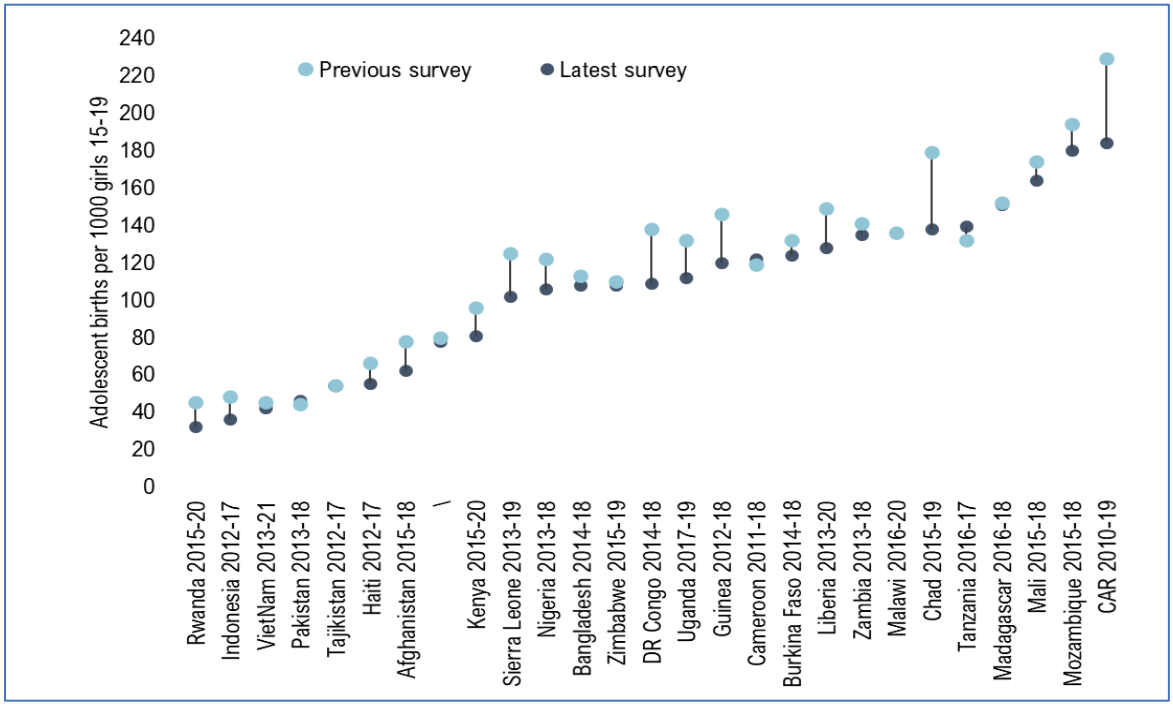
[10] https://www.who.int/immunization/monitoring_surveillance/routine/coverage/en/index4.html

V. Reproductive health

Adolescent fertility trends

The adolescent birth rate, defined as the number of live births among girls 15-19 years in a year, is usually computed for the 3-year period preceding a household survey such as DHS, MICS, and malaria indicator surveys. In 18 of 27 countries with sufficient data to assess recent trends (two surveys since 2010 and at least one of those surveys in 2017 or later), a reduction in adolescent fertility occurred (Figure 10). The average annual rate of reduction was 2.1% per year. Seven countries registered fast declines (average rate of at least 5% per year): Afghanistan (AHS 2015 – AHS 2018), Chad (DHS 2015-MICS 2019), DR Congo (DHS 2014-MICS 2018), Indonesia (DHS 2012-2017), Sierra Leone (DHS 2013-2019), Rwanda (DHS 2015-2020) and Uganda (DHS 2016-MIS 2019). The most recent survey in 10 countries showed little change (plus or minus 1% average annual rate of change, as well as Tanzania which had an increased age specific fertility rate in the MIS 2017 compared to the DHS 2015-16.

Figure 10: Adolescent fertility rate per 1000 girls 15-19 years, national surveys,2010-2020



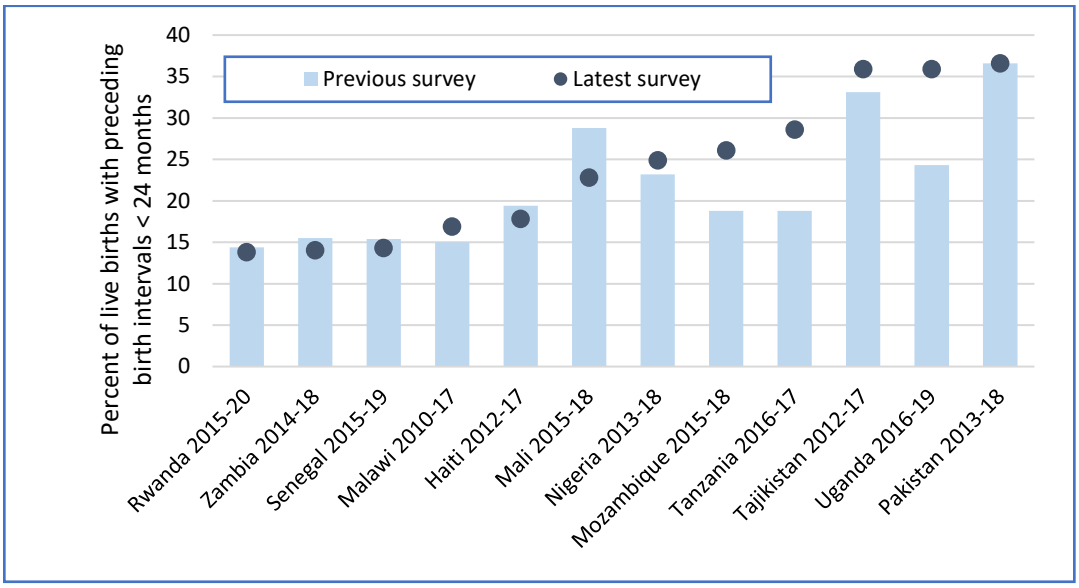
Short birth intervals / child spacing

Short preceding birth intervals, defined as the percent of non-first births born within 24 months after the previous birth, is one of the GFF indicators as it generally has a strong association with child mortality. Data from 12 countries were available to assess recent trends.[11] The earlier survey was conducted 2012-2016, the second 2017-2020. Prevalence of short birth intervals were more common in the recent surveys in nine of the 12 countries (Figure 11). Only three countries had a decline: Mali, Haiti, and Zambia. There are large

[11] We used DHS Statcompiler to extract the latest survey data which are usually not presented in the survey reports. DHS computes the birth intervals for births in the five years before the survey. Malaria indicator surveys, as well as DHS are the main sources of data.

differences between the countries, ranging from around 15% in Rwanda, Zambia, Senegal, and Malawi to over 30% in Tajikistan, Uganda and Pakistan.

Figure 11: Short birth intervals: percent of live births born within 24 months of the previous birth, national surveys, circa 2015 and circa 2017



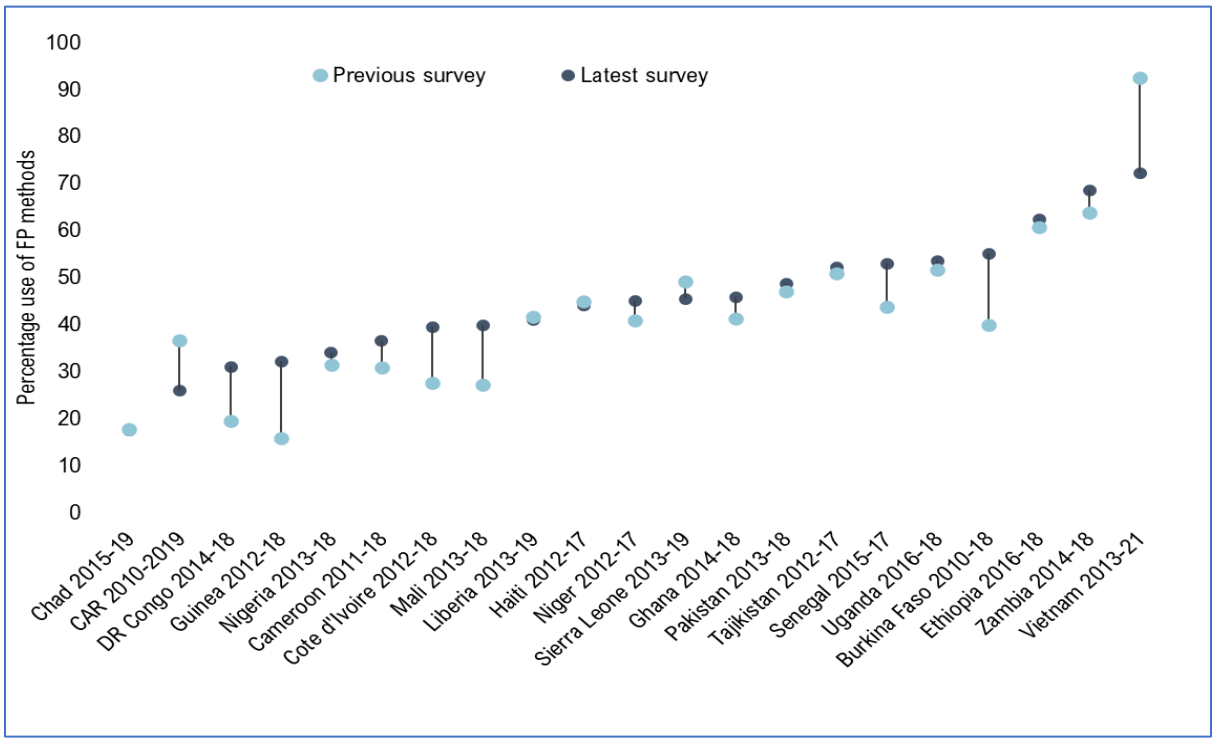
The trend data for short birth intervals must be interpreted with caution and further disaggregated analysis is required once all data sets are available. Data appears to be partly dependent on the type of survey, even though all data are collected through full or truncated birth histories. For instance, in both Tanzania and Uganda, the prevalence of short birth intervals was 10% percentage points higher in the two malaria indicator surveys compared to the two DHS, all conducted during 2011-2019.

Family Planning coverage

Trends in family planning coverage with modern methods (mostly referred to as demand satisfied with modern methods) among currently married women was assessed for 26 countries with surveys, conducted in, on average, 2013 and 2018. The assessment benefited from the frequent multi-round PMA 2020 surveys in several countries.

The median family planning coverage increased from to 41% to 45%, an average rate of increase of 1.2 percentage points per year during 2013-2018 (Figure 12). The highest rates of increase were found in West Africa (>5 percentage points per year): Burkina Faso, Cote d'Ivoire, DR Congo, Guinea, Mali, and Senegal. In only seven of the 26 countries the demand satisfied with modern methods among currently married women was greater than 50%.

Figure 12: Coverage with modern methods of family planning (demand satisfied) among currently married women 15-49 years, national surveys



VI. Inequalities in RMNCH coverage

Compared to other health programs, RMNCH is the best-informed health field on inequalities. Population-based surveys have generated a wealth of disaggregated data by wealth, education, place of residence and other stratifiers which have provided major insights into within country inequalities. Greater granularity of equity analyses will contribute to the identification of subgroups of women and children who are being left behind and monitor the impact of efforts to reduce inequalities in order to achieve the health SDGs.[12]

Countdown to 2015 developed a coverage summary measure with four intervention areas (family planning, maternal and newborn care, immunization, and child illness treatment). This Composite Coverage Index (CCI) has been used widely as a robust measure of levels and trends in RMNCH inequalities.[13] Here, we briefly review recent progress in wealth-related and subnational inequalities in RMNCH intervention coverage using the CCI. In the final section, we further assess trends in coverage in selected countries based on surveys conducted in 2018 or later.

Wealth-related inequalities

The overall picture until the end of the MDGs was one of slowly declining inequalities between the poorest and richest households.[14] Historical trends in the CCI show an average absolute increase of about 1% per year, although some countries, especially those in post-conflict situations, have succeeded in achieving increases as large as 2% per year over considerable stretches of time.[15] A gap in the CCI of 10%, therefore, implies that it could take the poorest 10 years to reach the current level of coverage of the richest quintile at the average past pace of decline.

According to recent surveys the gaps in CCI between the poorest and richest wealth quintiles remained large: the median gap for 17 countries with a survey in 2017 or later was 18%. This is only a slight decline from the gap in the previous surveys in the same countries (country median 20%). Inequalities in West and Central African countries remained large (Figure 13). The poorest-richest CCI gaps were 20% or more in seven of the nine countries in the subregion where only Liberia and Sierra Leone had small gaps in CCI.

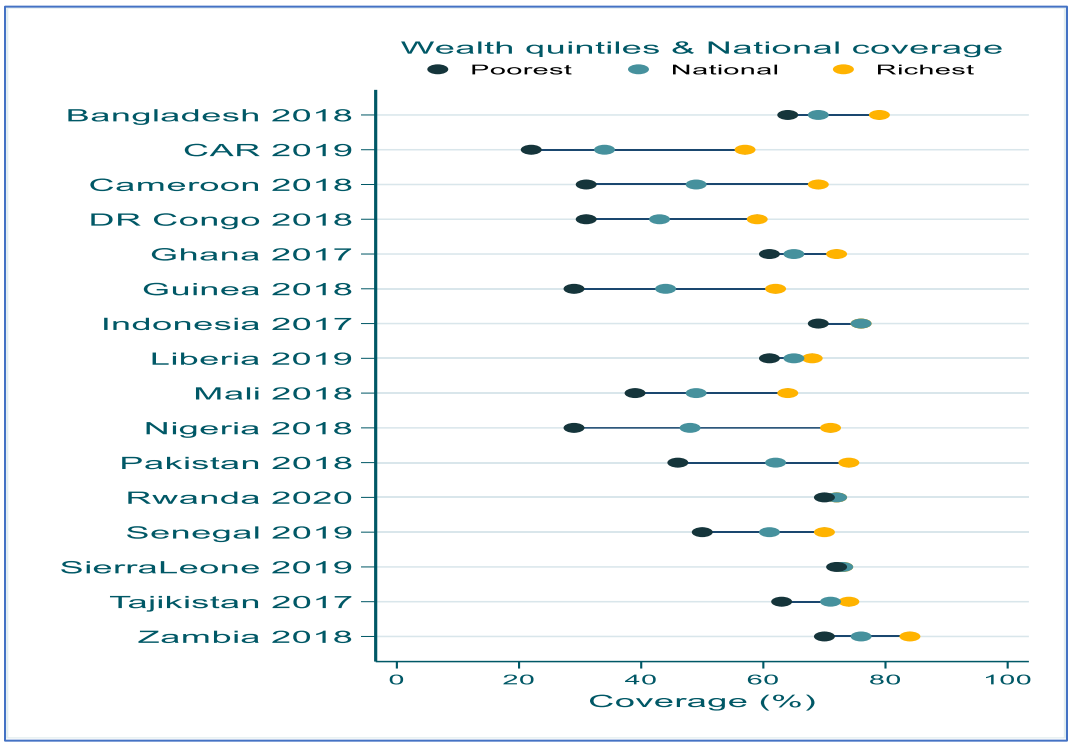
[12] In January 2020, a collection of 12 Countdown papers on multiple dimensions of inequalities in women's, children's and adolescents' health was published in the British Medical Journal, based on analyses by the Countdown to 2030 and entitled "Leaving no woman, no child no adolescent behind" https://www.bmj.com/leaving-no-one-behind

[13] Wehrmeister FC, Restrepo-Mendez MC, Franca GV, Victora CG, Barros AJ. Summary indices for monitoring universal coverage in maternal and child health care. Bull World Health Organ. 2016 Dec 1;94(12):903–12.

[14] Wehrmeister FC, Fayé CM, Silva ICM et al. on the behalf of the Countdown to 2030 for Women's, Children's and Adolescents' Health regional collaboration in sub-Saharan Africa. Wealth-related inequalities in the coverage of reproductive, maternal, newborn and child health interventions in 36 countries in the African Region. Bull WHO 2020,98: 345-405.

[15] Victora CG, Joseph G, Silva ICM, et al. The Inverse Equity Hypothesis: Analyses of Institutional Deliveries in 286 National Surveys. *Am J Public Health*. 2018;108(4):464-471. doi:10.2105/AJPH.2017.304277

Figure 13: Equiplot of the RMNCH composite coverage index (CCI) among the poorest (Q1) and richest (Q5) wealth quintiles and for the national population in countries with a survey since 2017



Subnational inequalities

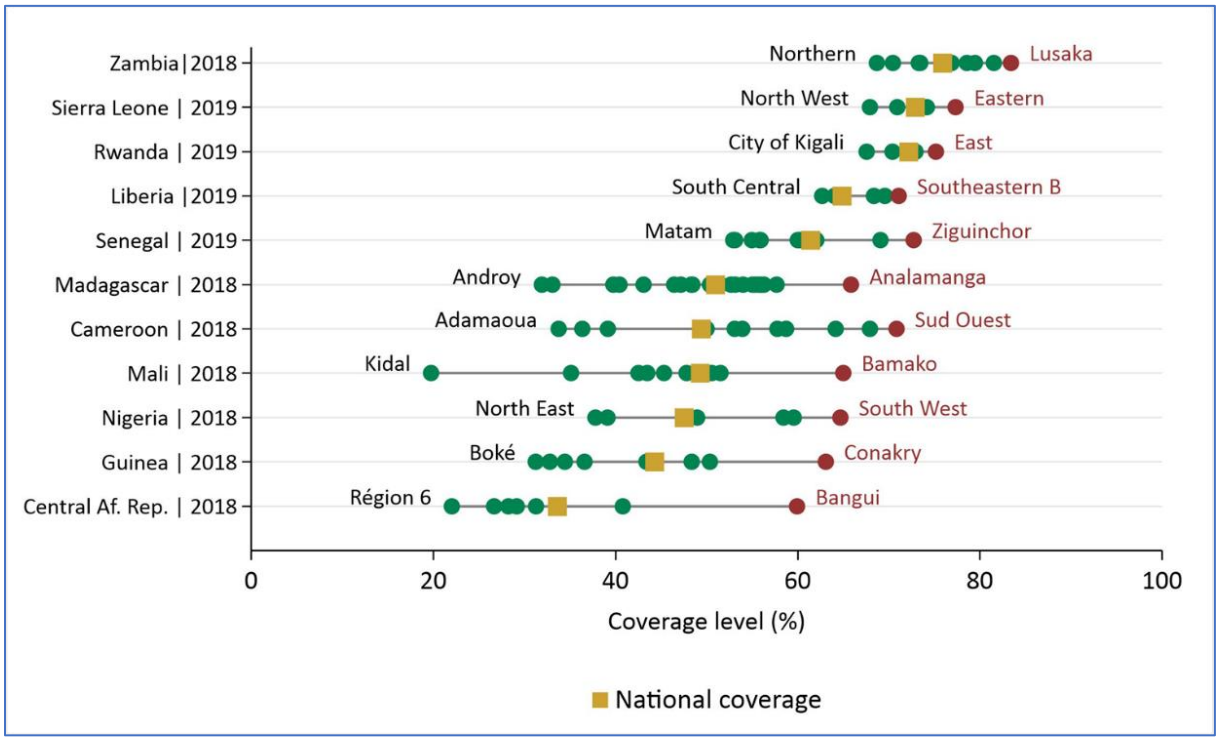
Subnational inequalities in coverage are prominent. Routine health facility data are an importance source of such data, and the Countdown to 2030 is working with country public health institutions and ministries of health to improve the quality of coverage statistics for subnational units such as districts and provinces/regions. Data from household surveys are critical for the analyses of improving statistics based on routine health facility data (e.g., for external validation and for the computation of target populations). The improvement of subnational coverage statistics will also contribute to the assessment of the extent to which geographic prioritization of districts, as is common in the GFF investment cases, is helping to achieve positive results.

Household surveys provide information on inequalities between regions, provinces, or states within countries. A recent Countdown analysis of inequalities in sub-Saharan Africa showed the variation in subnational gaps in the coverage index between countries.[16] Figure 14 shows that provinces/regions with capital cities tend to have higher coverage but the extent to which there are advantaged differs greatly between countries. Central Africa Republic, Guinea and Mali are examples of low-coverage countries with major gaps between the capital city and the other provinces or regions (top inequality pattern). Other countries are characterized by a widespread in coverage, such Cameroon and Madagascar, but no capital

[16] Faye CM, Wehrmeister FC, Melesse DY, *et al* Large and persistent subnational inequalities in reproductive, maternal, newborn and child health intervention coverage in sub-Saharan Africa *BMJ Global Health* 2020; **5:** e002232

advantage. In the countries with the highest coverage, the subnational gaps have reduced to about 10% or less.

Figure 14: RMNCH composite coverage index (CCI) in sub-Saharan Africa, most recent survey.



VII. RMNCAH and nutrition services during the COVID-19 pandemic

In the three rounds of the WHO PULSE survey, country key informants reported disruptions 55%, 37% and 33% of RMNCAH and nutrition services in Q3 2020, Q1Q 2021 and Q4 2021, respectively.[17] Similar levels of disruption were reported for immunization services in the first round of PULSE (56%), but disruptions were more commonly reported than for RNCMAH and nutrition services in round 2 (42%) and round 3 (53%), partly because mass vaccination campaigns were often cancelled. Multiple modeling studies raised major concerns about the impact of the pandemic and the associated service disruptions on health outcomes, particularly for women and children and in countries with weaker health systems.[18] [19] [20] [21]

Many publications have quantified the impact of COVID-19 and the government response on the continuation of RMNCAH, immunization and other health services. Some have assessed the impact on health outcomes. Comprehensive research to fully understand the size and heterogeneity of short- and long-term impact of the COVID-19 pandemic on women's, children's and adolescents' health and nutrition is still pending, but a few preliminary general observations can be made here.

In general, the greatest impact on health service utilization and provision was in 2020, especially during the early months of the pandemic, when a strong government response affected all health services. The COVID-19 incidence and mortality rates were often larger in subsequent waves, but, with notable exceptions, the disruptive impact on non-COVID health services was more limited.

RMNCAH services and, to a lesser extent, immunization services were disrupted initially, but rebounded in most countries and were less affected than outpatient or inpatient service utilization. For instance, in a Countdown collaborative study with 11 countries in sub-Saharan Africa, the health facility data showed that the COVID-19 pandemic caused modest reductions in the utilization of maternal, newborn and child health services in the order of 2 to 6%, and larger reductions in outpatient consultations and hospitalizations (7 to 17%) during March to December 2020, with months immediately following the start of the pandemic showing the greatest reductions.[22] Similar findings were reported in a synthesis of 18 countries, including two in Asia and 16 in sub-Saharan Africa, and several other studies in Latin America and the Caribbean and Asia,

[17] WHO. Third round of the global pulse survey on continuity of essential health services during the COVID-19 pandemic. Interim report. Geneva. 2022. WHO/2019-nCoV/EHS_continuity/survey/2022.1

[18] Roberton T, Carter EDED, Chou VBVB, *et al.* Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. *Lancet Global Health* 2020; **8**: e901–8.

[19] ROSA report SickKids, Centre for Global Child Health and UNICEF. Direct and indirect effects of the COVID-19 pandemic and response in South Asia. New Delhi, March 2021.

[20] Hogan AB, Jewell BL, Sherrard-Smith E, *et al.* Potential impact of the COVID-19 pandemic on HIV, tuberculosis, and malaria in low-income and middle-income countries: a modelling study. *Lancet Global Health* 2020; **8**: e1132–41.

[21] Riley T, Sully E, Ahmed Z, Biddlecom A. Estimates of the potential impact of the covid-19 pandemic on sexual and reproductive health in low-and middle-income countries. *International Perspectives on Sexual and Reproductive Health*. 2020; **46**. Abbas K, Simon RP, Kevin van Z *et al*. Routine childhood immunisation during the COVID-19 pandemic in Africa: a benefit–risk analysis of health benefits versus excess risk of SARS-CoV-2 infection. *Lancet Global Health 2020,* **8**: e1264–72.

[22] Amouzou A Maiga A, Faye CM and the Countdown to 2030 country collaboration on COVID-19 et al. Health service utilization during the COVID-19 pandemic in sub-Saharan Africa in 2020: a multi-country empirical assessment with a focus on maternal, newborn and child health services, BMJ Glob Health, forthcoming.

but with considerable variation between countries.[23] [24] [25] [26] The impact appeared to be smaller in sub-Saharan Africa (excluding southern Africa) than many other regions of the world.

Even though the impact on survival and health of women and children was much smaller than the initial models predicted, the pandemic's impact may still be large enough to derail the fragile progress towards the 2030 SDG health targets. In general, intervention coverage prior to 2020 increased slowly at about 1-2 percentage points and a 4-5 percentage points drop during the pandemic may imply a two to three years setback on the road towards universal coverage. This lapse in coverage may have major impact on maternal and child survival and morbidity, including infectious disease outbreaks.[27] [28] Furthermore, the indirect effects of the COVID-19 pandemic were greatest for the most vulnerable populations, such as the poorest or slum dwellers,[29] and women, [30] potentially aggravating socioeconomic and gender health inequalities in RMNCAH and nutrition. It will take a major effort of countries and the global health community to rapidly overcome the adverse effects of the pandemic on the progress towards the ambitious SDG health targets by 2030. Box 2 shows how the coverage index (CCI) in Liberia and Sierra Leone recovered well after the Ebola epidemic, while Guinea made much less progress, illustrating the capacity of countries to overcome adversity with concerted efforts in spite of limited resources.

[23] Ahmed T, Roberton T. Monitoring of Essential Health Services Team et al. Indirect effects on maternal and child mortality from the COVID-19 pandemic: evidence from disruptions in healthcare utilization in 18 low- and middle-income countries. Forthcoming.
[24] Doubova SV, Leslie HH, Kruk ME, *et al*. Disruption in essential health services in Mexico during COVID-19: an interrupted time series analysis of health information system data. *BMJ Global Health* 2021;6:e006204.
[25] Aranda Z, Binde T, Tashman K, *et al*. Disruptions in maternal health service use during the COVID-19 pandemic in 2020: experiences from 37 health facilities in low-income and middle-income countries. *BMJ Global Health* 2022;7:e007247.
[26] Helmyati S, Dipo DP, Adiwibowo IR, et al. Monitoring continuity of maternal and child health services, Indonesia. Bull World Health Organ. 2022 Feb 1;100(2):144-154A.
[27] Shet A, Carr K, Danovaro-Holliday MC, et al. Impact of the SARS-CoV-2 pandemic on routine immunisation services: evidence of disruption and recovery from 170 countries and territories. Lancet Glob Health. 2022 Feb;10(2):e186-e194.
[28] Ahmed T, Roberton T, Monitoring of Essential Health Services Team et al. Indirect effects on maternal and child mortality from the COVID-19 pandemic: evidence from disruptions in healthcare utilization in 18 low- and middle-income countries. Forthcoming.
[29] Ahmed SAKS, Ajisola M, Azeem K, *et al*. Impact of the societal response to COVID-19 on access to healthcare for non-COVID-19 health issues in slum communities of Bangladesh, Kenya, Nigeria and Pakistan: results of pre-COVID and COVID-19 lockdown stakeholder engagements. *BMJ Global Health* 2020;5:e003042.
[30] Flor LS, Friedman J, Spencer CN, et al. Gender Equality Metrics team and the COVID-19 Forecasting team at the Institute for Health Metrics and Evaluation. Quantifying the effects of the COVID-19 pandemic on gender equality on health, social, and economic indicators: a comprehensive review of data from March, 2020, to September, 2021. Lancet. 2022 Mar 2:S0140-6736(22)00008-3.

Box 2

Recovery: coverage trends and inequalities pre- and post-Ebola epidemic in West Africa

The results of recent surveys in *Guinea, Liberia and Sierra Leone* may provide some insights into recovery from the adverse effects of epidemics on RMNCH service coverage. In 2014-15 the three countries were severely affected by an Ebola epidemic which affected the whole of society including the health services. Eight national surveys, including three DHS before the epidemic, in the three countries combined tell different stories about RMNCH service coverage and inequalities before and after the epidemic. Guinea had a very low CCI in 2012 (40%) with major inequalities, and no progress in the MICS 2016. In the DHS 2018 there was a large improvement in the national CCI, but inequalities hardly reduced. Liberia conducted DHS in 2013 and 2019, showing a major increase of the CCI to 69% with major reduction of the inequalities between the poorest and richest. A similar pattern occurred in Sierra Leone where the 2017 MICS and 2019 DHS showed an increasing CCI to 73% and virtually disappearing poorest-richest gap in CCI. The impact of the Ebola epidemic on the CCI appeared to have been greatest in Guinea, although a serious dip in service coverage in 2014-2015 cannot be excluded in any of the three countries based on these surveys.

Figure 15: RMCNH composite coverage index (CCI, 5) national surveys, Guinea, Liberia, and Sierra Leone 2012-2019