

**National and subnational coverage and other service statistics for reproductive,
maternal, newborn and child health from health facility data and surveys**



ZIMBABWE

Brief synthesis of the analyses

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Background

This synthesis describes the data, methods, and results of an analysis of the health facility data for selected indicators of Reproductive, Maternal, Newborn and Child health (RMNCH), supported by survey analyses and health system data where available. It focuses on national and subnational, i.e., the provincial administrative level in the country. The set of indicators is limited but can easily be expanded using similar methods, for instance, family planning, adolescent health, and nutrition.

The analyses aim to inform national and global reviews of the progress and performance of the national plan and strategy for RMNCH. A clean dataset from the health facility data (kept in DHIS2 software) was created and used for the analysis and review. This was done through a systematic approach, with ample attention to facility data quality assessment and adjustment, denominator selection, joint assessment of surveys and facility results and consideration of possible other biases.

This report has the following sections:

1. Description of the data sets
2. Data quality assessment and adjustment
3. With number 2
4. Denominators or target populations
5. Survey coverage trends and equity
6. Facility data derived coverage trends and inequalities
7. Private sector bias
8. Analysis of subnational progress and performance
9. Potential additional indicators

Part #1

Zimbabwe is a landlocked country in Southern Africa with an estimated total population of 15,178,979 million people, according to the 2022 census preliminary report. The country has ten provinces, of which eight are rural and two are metropolitan. The provinces are further divided into 63 districts (Table 1). The country has at least 1,826 health facilities (excluding some private for-profit health facilities), and DHIS2 is the main repository of health information. However, the DHIS2 has incomplete datasets for the yearly projected total population and the population for children under one year, and the system does not have annual data on projected live births.

For this analysis, monthly data for 16 RMNCH indicators were extracted from DHIS2 from January 2017 to December 2021. The data were disaggregated by province, district and by month and were assessed and adjusted for quality.

Major population-based surveys conducted in the country since 2015 are the Zimbabwe Demographic and Health Survey of 2015, the Multiple Indicator Cluster Survey of 2019, the Zimbabwe Population-Based HIV Impact Assessment of 2020 and the Zimbabwe Vulnerability Assessment Committee of 2021. The data from these surveys were used for this analysis. The Zimbabwe Statistical Agency (ZIMSTATS) recently shared the Population and Household Census 2022 preliminary report

Table 1 Description of the data sets

Indicator	Value
Administrative organization	
Number of provinces / regions / counties	10
Number of districts	63
Health facilities	
Number of health facilities in the country	1,826 (excludes some private for-profit health facilities)
Data on core health professionals	Yes
Data on hospital beds	Yes
Facility data analysis period	
First month and year with health facility data	January 2017
Last month and year with health facility data	December 2021
Indicators with facility data for the analysis	Has data
Antenatal care first visit	Yes
Antenatal care 4 th visit	Yes
IPT 2 nd dose (malaria)	Yes
Institutional delivery or skilled birth attendant	Yes
Caesarean Section	Yes
Postnatal care	Yes
Family planning new and revisits	Yes
BCG vaccination	Yes
Pentavalent / DPT first dose	Yes
Pentavalent / DPT third dose	Yes
Measles vaccination	Yes

Stillbirths (fresh / macerated)	Yes
Maternal deaths in health facilities	Yes
OPD visits children under five years	Yes
IPD admissions children under five years	Yes
Under five deaths in health facilities	Yes (data available only in admitting facilities)

Population-based surveys (3 most recent health surveys)

Name of survey	Year
Zimbabwe Vulnerability Assessment Committee (ZIMVAC)	2021
Zimbabwe Population-Based HIV Impact Assessment (ZIMPHIA)	2020
Multiple Indicator Cluster Survey (MICS)	2019

Population projection data in DHIS2

Indicator	Year
Total population for every year	Yes (dataset with incomplete data is available)
Live births for every year	No
Population under 1 year for every year	Yes (dataset with incomplete data is available)

Part #2 and #3

Data quality assessment and adjustments

The Health Sector in Zimbabwe has a well-outlined reporting structure for health facilities, as shown in Figure 1 below. This clear structure is one of the country's strengths and contributes to the very high completeness of reporting, mainly for institutions in the public sector. There are clearly defined timelines for submission and analysis of the data at the various levels of the health systems

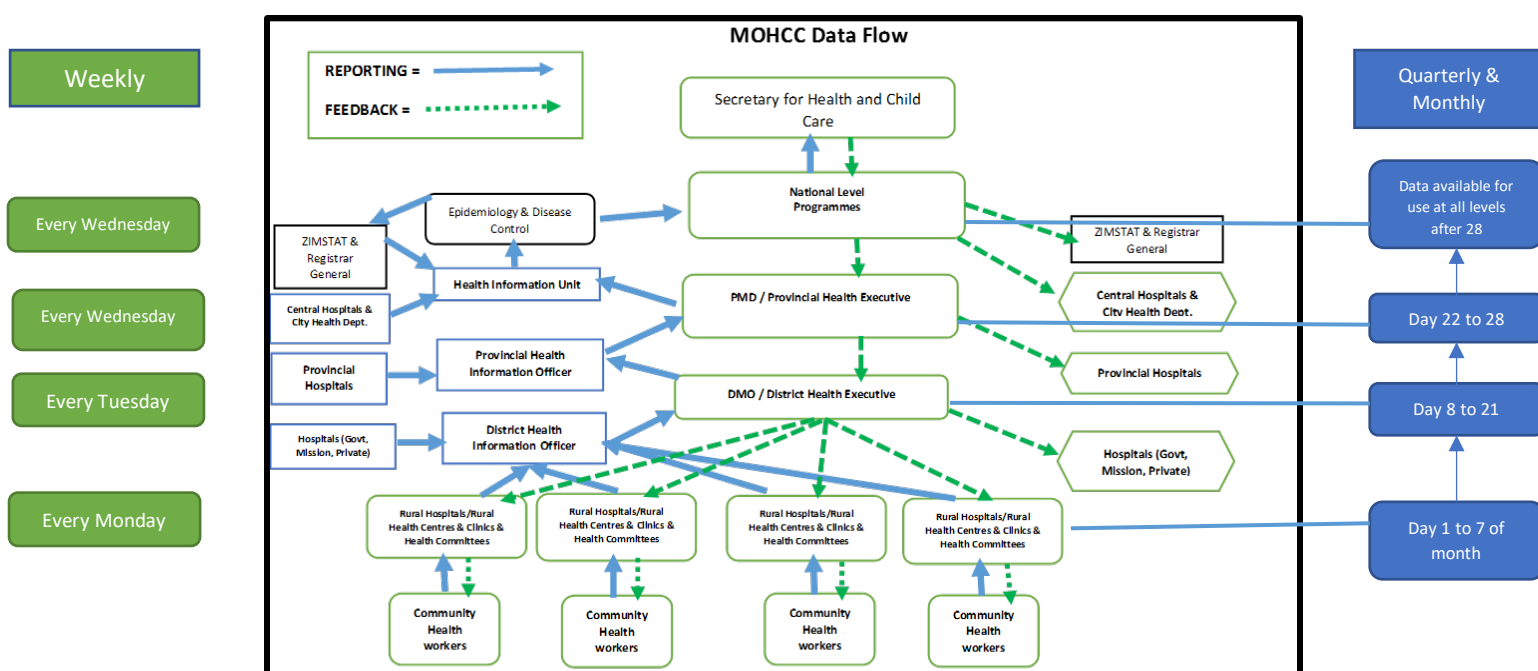


Figure 1 Reporting Structure for Health Facilities in Zimbabwe

The scorecard in Table 2 below shows that the quality of DHIS2 data in the past five years was high, with an average data quality score above 90% per year. None of the health facilities had missing values, extreme outliers were few (less than 10% for most of the years except 2020), and the consistency of annual reporting was good (above 85%). COVID-19 restrictions and the ongoing challenges with human resources for health may have contributed to the few observed outlier and incompleteness of reporting reported in 2019 and 2021, respectively.

Table 2: Data quality score card for Zimbabwe, DHIS2 data for 2017-2021

No	Indicator	2017	2018	2019	2020	2021
1	Completeness of monthly facility reporting (green>90%)					
1a	% of expected monthly facility reports (mean, national)*	98%	98%	97%	97%	96%
1b	% of districts with completeness of facility reporting>=90%	96%	95%	92%	92%	88%
1c	% of facilities with no missing monthly values in the year*	100%	100%	100%	100%	100%
2	Extreme outliers (green>95%)					
2a	% of monthly values that are not extreme outliers (mean, national)*	99%	100%	100%	99%	99%
2b	% of districts with no extreme outliers in the year*	97%	98%	97%	88%	93%
3	Consistence of annual reporting (green >85)					
	Ratio ANC1-penta1 numbers (national)	1.12	1.13	1.11	1.14	1.10
3a	% of districts with ANC 1-penta1 ratio between 1.0 and 1.5	90%	92%	94%	92%	87%
	Ratio Penta1-penta3 numbers (national)	1.05	1.05	1.06	1.07	1.07
3b	% of districts with penta1-penta3 ratio between 1.0 and 1.5	90%	90%	94%	97%	90%
	Annual data quality score (Mean indicator 1a and 3b)	96%	96%	96%	95%	94%

The year-on-year reporting rates for ANC, delivery, vaccination and OPD interventions by place of residence (rural/urban divide) and by year (2017-2021) were generally high (above 90%), as shown in

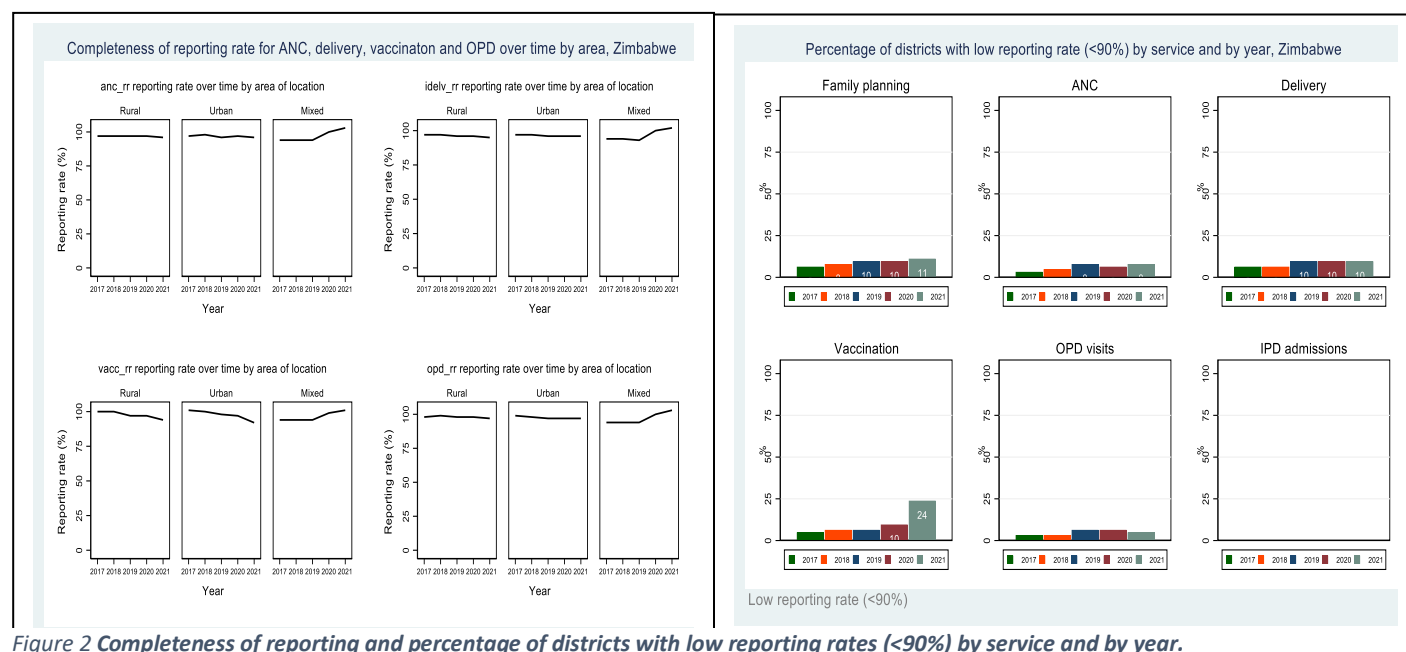


Figure 2 Completeness of reporting and percentage of districts with low reporting rates (<90%) by service and by year.

Figure 2 below. The reporting rates declined in 2020 due to COVID-19-related lockdown restrictions and picked up in 2021 for all interventions except for vaccinations. The reporting trends/patterns are similar for the urban and rural areas. Percentage of districts with low reporting rates (below 90%) was small for almost all interventions except for vaccinations, where outreach campaigns were disrupted by the COVID-19 lockdown restrictions (Figure 2).

The high reporting rates for Zimbabwe are attributed but not limited to monthly data review meetings held at all levels of care by most facilities and management units. Due to the high reporting rates, an adjustment factor (k) of 0.25 was applied for incomplete reporting by assuming that the non-reporting facilities provided a quarter of the volume of services that were being provided by the health facilities that had reported.

The data were corrected for extreme outliers, as shown in Figure 3, and the consistency between ANC1 and Penta1 was high (Figure 4). There is reasonably good quality data given the alignment of data points. Outliers in the monthly values were corrected by imputing a value based on the median value of the calendar year. The health system shock due to industrial action by health workers mainly in Bulawayo and Harare in 2019 and the restricted access to services due to COVID-19 containment measure in 2020-2021 explains the wide variations for Bulawayo and other urban areas (Figure 3).

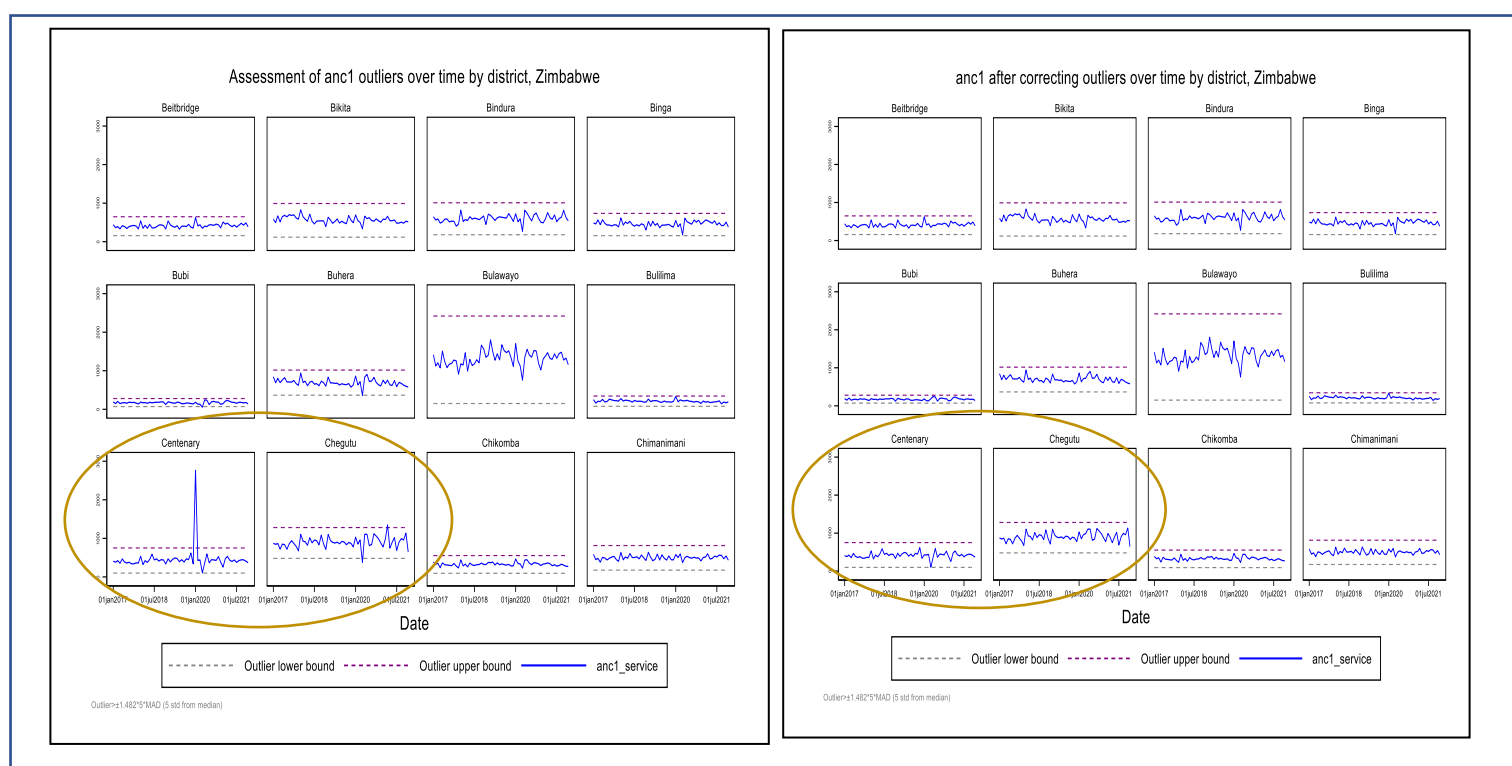


Figure 3 Adjustment for outliers for ANC first visit in selected districts before and after correction.

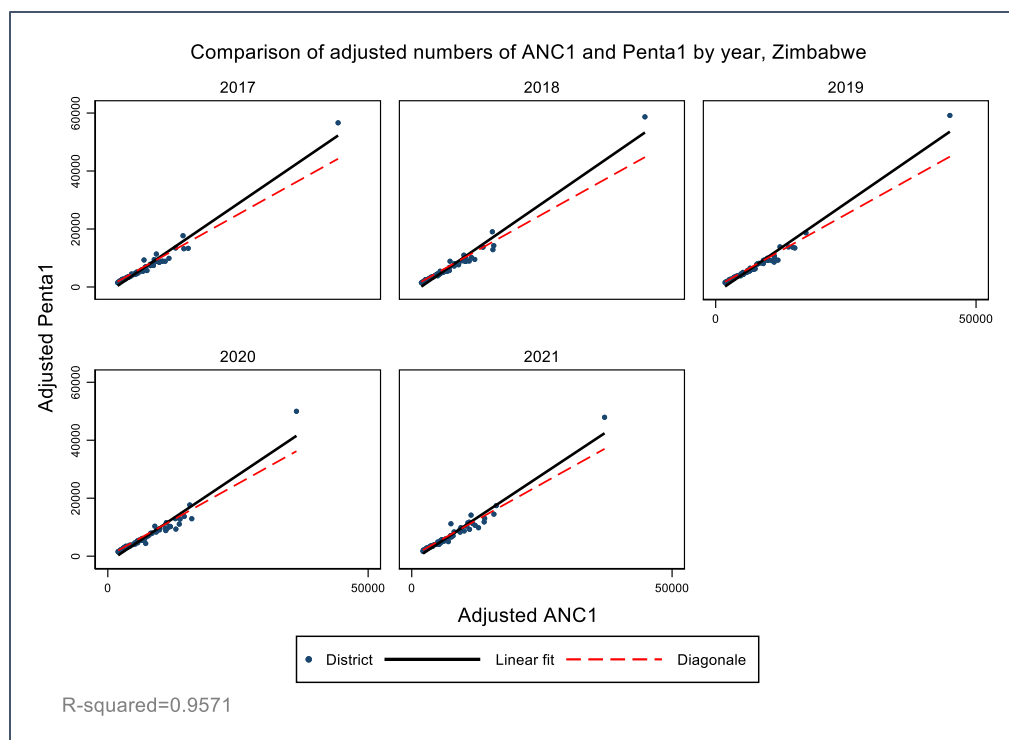


Figure 4 Comparison of adjusted numbers of ANC1 and penta1 by year, Zimbabwe

The outlier in Figure 4 comparing the adjusted numbers of ANC1 and Penta 1 by year is for the Harare district. The district also serves as a province resulting in high numbers compared to other districts.

Part #4

Denominators or target populations

The country recently released preliminary results of the 2022 Zimbabwe National Population and Housing Census. The results were, however, not used for this analysis. As a result, a comparison of population indicators in DHIS2 and the UN estimates was made. The results of the comparison are shown in Figure 5 below. Generally, there is consistency over time (for the five years) for population growth across the provinces except for Harare Metropolitan Province

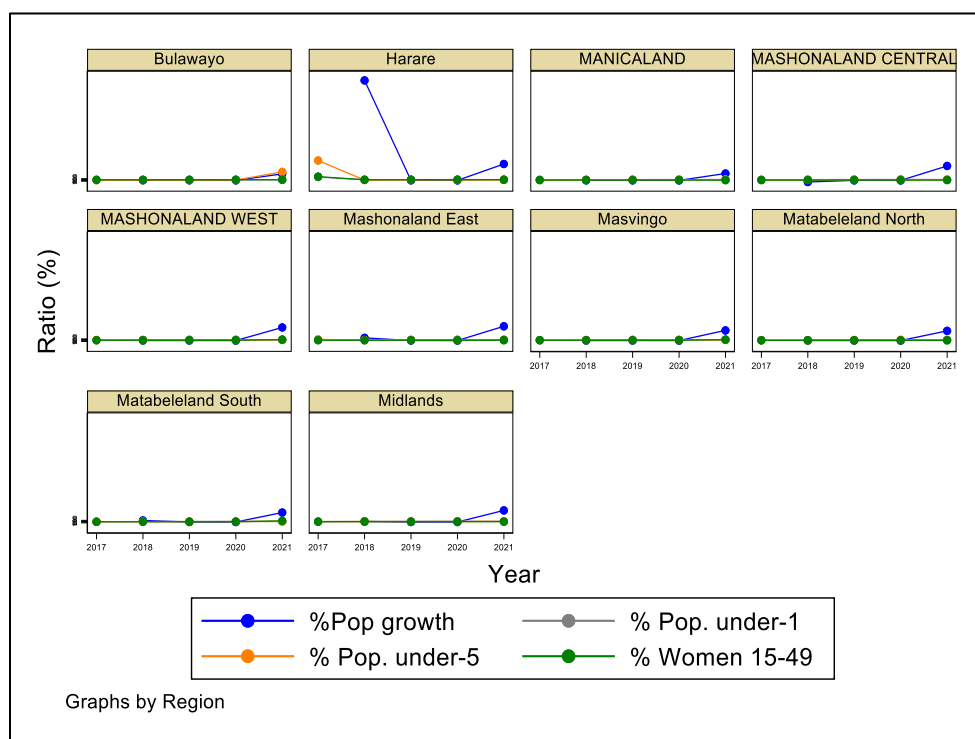


Figure 5 Comparison of the population indicators in DHIS2 with the UN (ratio 100 means the same).

Coverages were computed using the UN estimates, and DHIS2-derived denominators. As shown in Figure 6 coverages based on UN estimates were found to be above 100% which is contrary to what is obtaining on the ground. Therefore, the team noted that using facility data-derived denominators to analyse coverage and utilization of high coverage interventions at national and subnational levels is preferable.

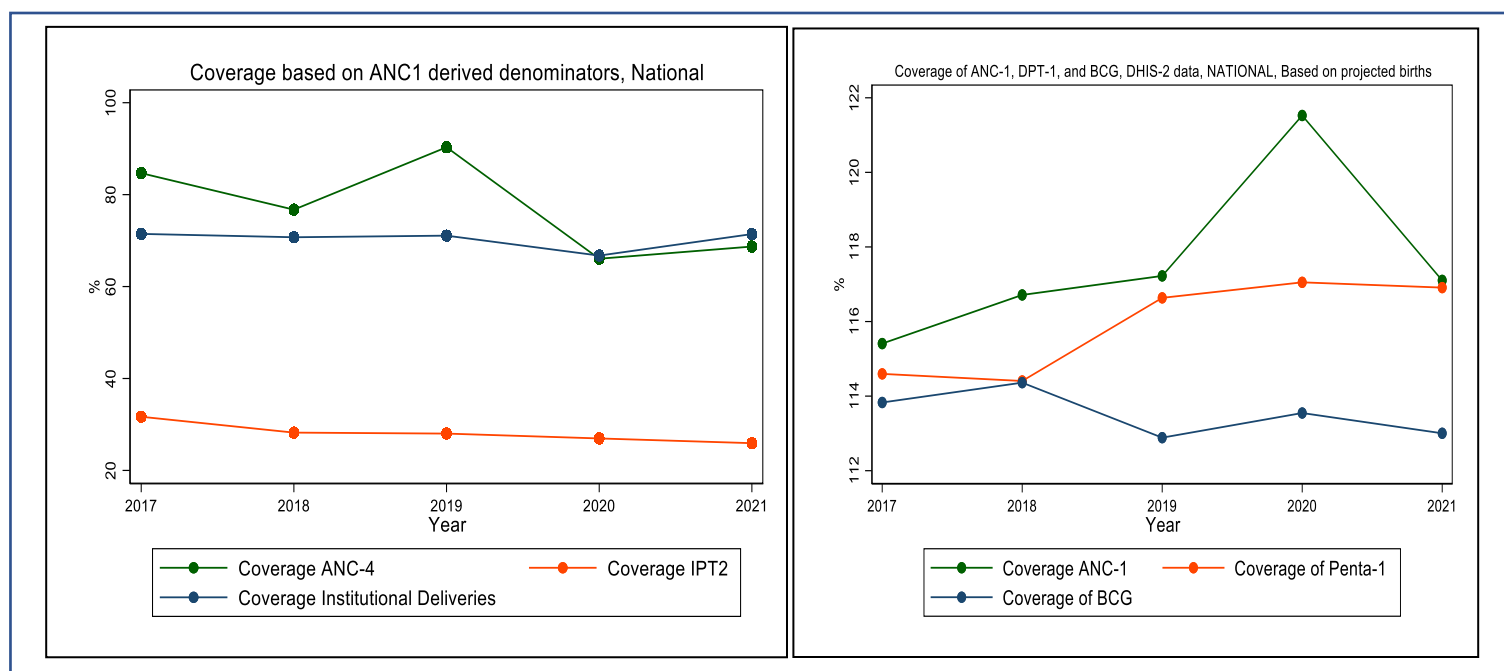


Figure 6 Coverage based on ANC1 derived denominators vs UN estimates denominators

Part #5

Survey coverage trends and equity

A composite coverage index (CCI) was calculated using data from household surveys. While the CCI is calculated using eight indicators, the Zimbabwe MICS for 2019 did not include data on Family Planning and pneumonia. These were excluded from the calculations of the CCI for Zimbabwe and other nations in the Southern African region. Figure 7 below shows an equiplot for Zimbabwe, Mozambique, Zambia and Malawi. Mozambique had the most significant inequality gaps and lowest coverages compared to the other countries, and Zimbabwe performed fairly well with smaller inequality gaps compared to Zambia and Mozambique.

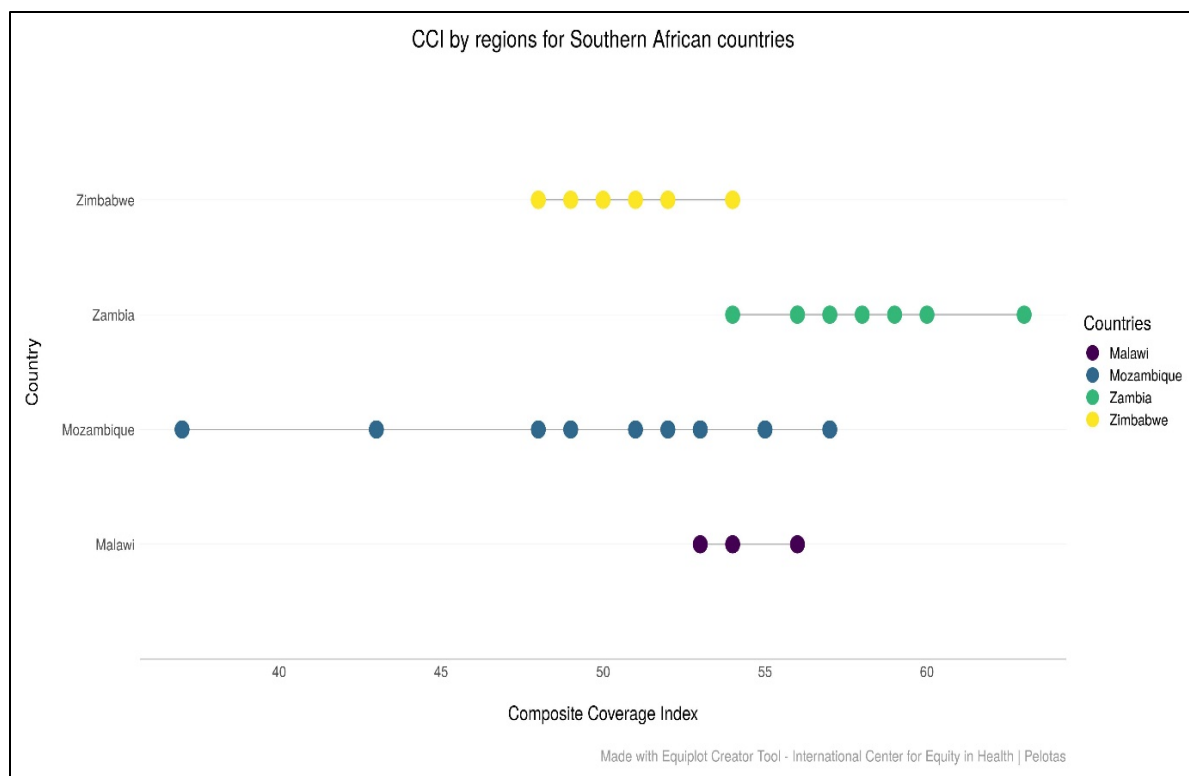


Figure 7 Composite Coverage Index by Southern African country based on survey data

Table 3 below shows summary measures of inequality for six interventions based on findings from the Zimbabwe MICS conducted in 2019. Measles was noted to have the highest inequality gap among all the interventions after comparing all the four inequality summary measures, which may explain the current measles outbreak in the country. Skilled birth attendance (SBA) has the second highest inequality gap.

Table 3 Simple and complex measures of inequality by intervention for Zimbabwe

Measure	ANC4	SBA	BCG	MSL	DPT	ORS
Difference	18,4	18,1	13,5	17,4	14,5	17,0
Ratio	1,3	1,2	1,2	1,2	1,2	1,7
MADM	3.6	4.4	3.2	5.2	3.7	2.9
MADMW	3.5	4.6	3.6	5.4	3.5	2.8

For the sub-national levels , while a big absolute difference between Harare and Mashonaland Central provinces (83%-65%) was noted, the ratio ($83/65=1.3$) showed a slight inequity on 4ANC by region. The same also applied for skilled attendance at birth. While there was a big absolute difference between Harare and Manicaland (94%-76%), the ratio ($94/76=1.2$) showed a slight inequity on SBA by region.

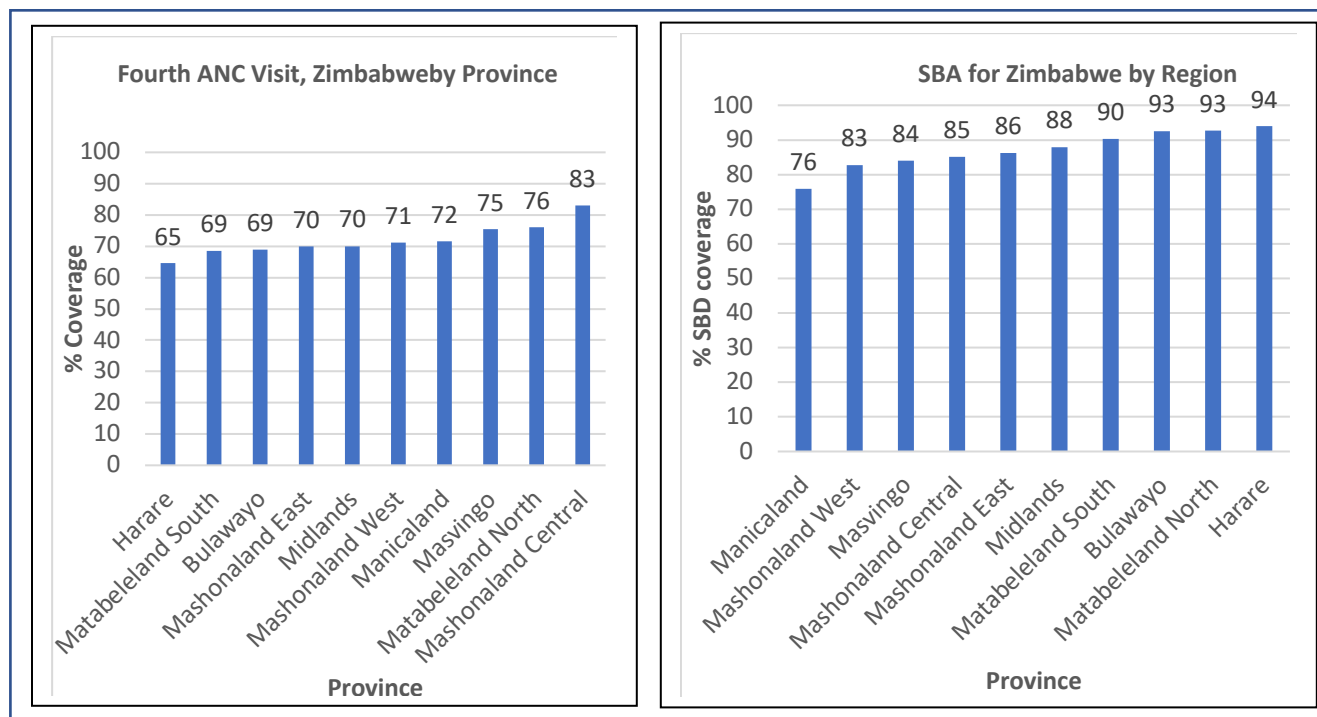


Figure 8 Percentage of pregnant women with at least 4 ANC visits and Skilled Births Attendance by region in Zimbabwe (MICS 2019)

Report part #6

Facility data derived coverage trends and equity

Figure 9 below shows an equiplot produced after analysing facility-based data on the following selected RMNCAH indicators: ANC 1, ANC4, institutional deliveries, skilled attendance at birth, BCG, DPT, measles and oral rehydration.

The equiplot used a simple measure and showed that generally, there are no substantial equity differences across interventions. Except for diarrheal indicators, coverage for all other indicators is generally high with low equity gaps among provinces that are predominantly rural. However, the urban provinces (Harare and Bulawayo) for most indicators have the lowest coverages; hence, there is a need for targeted interventions for the urban poor population. Recent surveys in Zimbabwe have shown an increase in poverty in some urban areas since the onset of COVID-19.

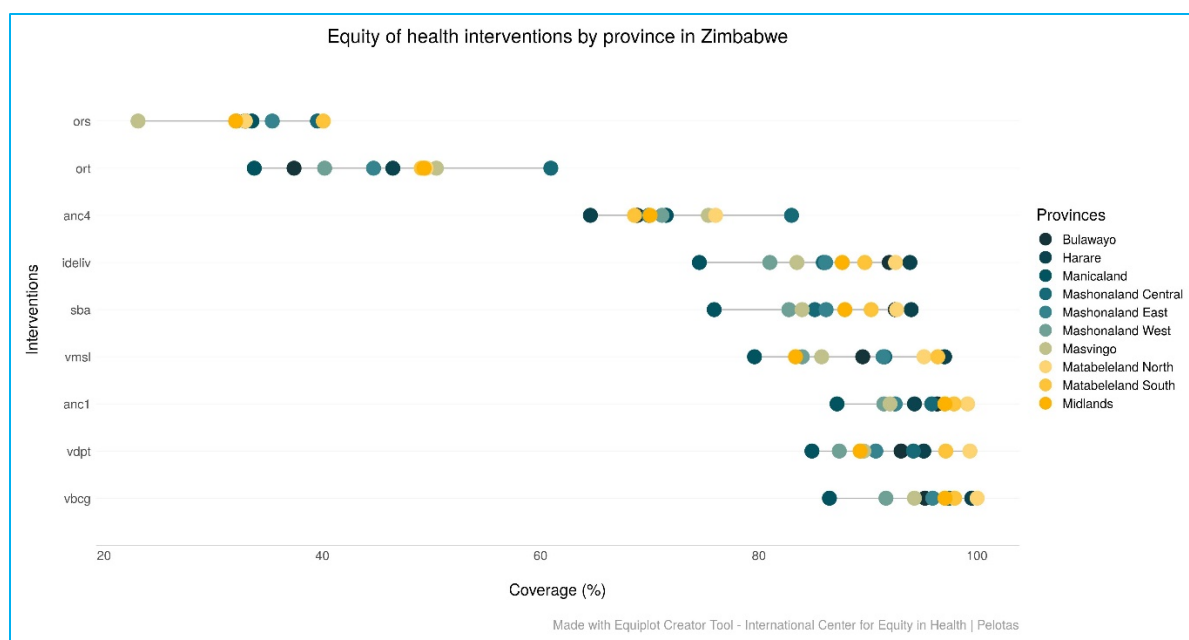


Figure 9 Coverage by region for selected indicators of RMNCH, based on health facility data analysis, Zimbabwe

Report part #7

Private sector bias

An analysis was done on the share of the private sector on the master list of facilities in the country for completeness of reporting and share in service provision for selected RMNCH indicators. Private health facilities (mostly those for profit) are more in urban settings, while public health facilities are more in rural settings (Table 4). Approximately 13.3% of health facilities in the master list are private (for-profit and not-for-profit) (Figure 9). About 10% of the health facilities registered by the Health Professions Authority are not in the master health facility register. Furthermore, the reporting coverage of the private facilities in the master list is about 60%.

Table 4 Share of private sector on the master list of health facilities by rural and urban divide, Zimbabwe

Indicator	Rural		Urban		Total
	Private	Public	Private	Public	
Number of Health Facilities	87	1350	166	297	1900
% of Health Facilities	4.6%	71.1%	8.7%	15.6%	100%

The Zimbabwe Demographic and Health Survey (ZDHS) and the Multiple Indicator Cluster Survey (MICS) collect data on selected RMNCH services provided by public and private health facilities. The ZDHS for 2015 showed that private facilities supply a fifth of users of modern contraceptives. The MICS for 2019 shows that deliveries in health facilities and treatment of children with diarrhoea is very low in private health facilities (Figure 9).

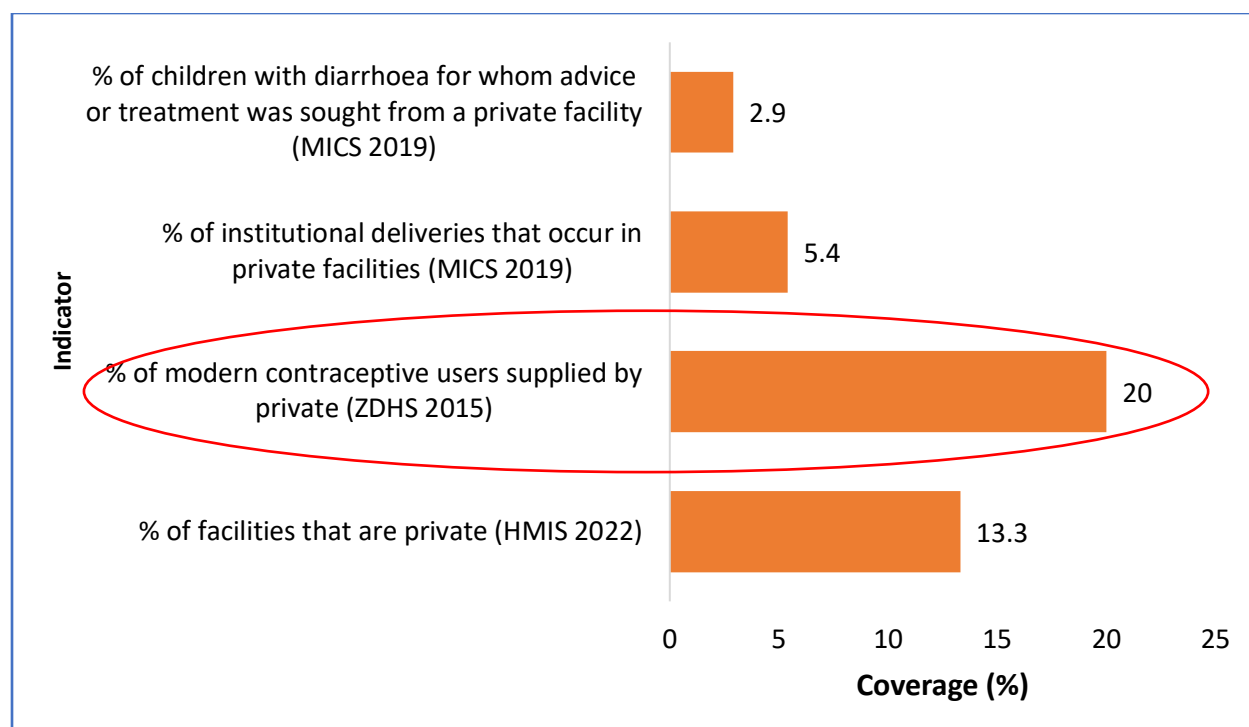


Figure 10 Private sector contribution to RMNCH services in Zimbabwe

From this analysis it is therefore important to develop strategies to have the private sector submitting data to HMIS to address the prevailing bias.

Report part #8

Analysis of subnational progress and performance

We also performed an analysis of selected RMNCH indicators at the sub-national level using survey data from the MICS 2019 (Figure 11 and 12). Coverage for almost all the indicators except ANC4 and ORS are high (more than 80%) across nearly all the sub-regions. Manicaland performed the least (below 80%) on most indicators except ANC1, BCG and DPT.

We were unable to perform detailed/further sub-national analysis on top of those presented above to show the comparison of outputs and changes over time (ranking); stratified ranking of outputs by the level of socioeconomic development, stratified ranking of outputs by the strength of the health services /system and analysis according to program effort/prioritization of subnational units of the various RMNCH indicators at the sub-national level. Sub-national analysis is critical because the national performance might not mirror what is happening at lower levels.

Sub-national analysis of performance can unmask underperforming provinces and districts thus, targeted interventions can be implemented. Performing detailed sub-national analyses for various RMNCH indicators using CCI and the equiplot will be a priority in our future analysis plans. We will focus our sub-national analysis on the district level because that is our operational/implementing level.

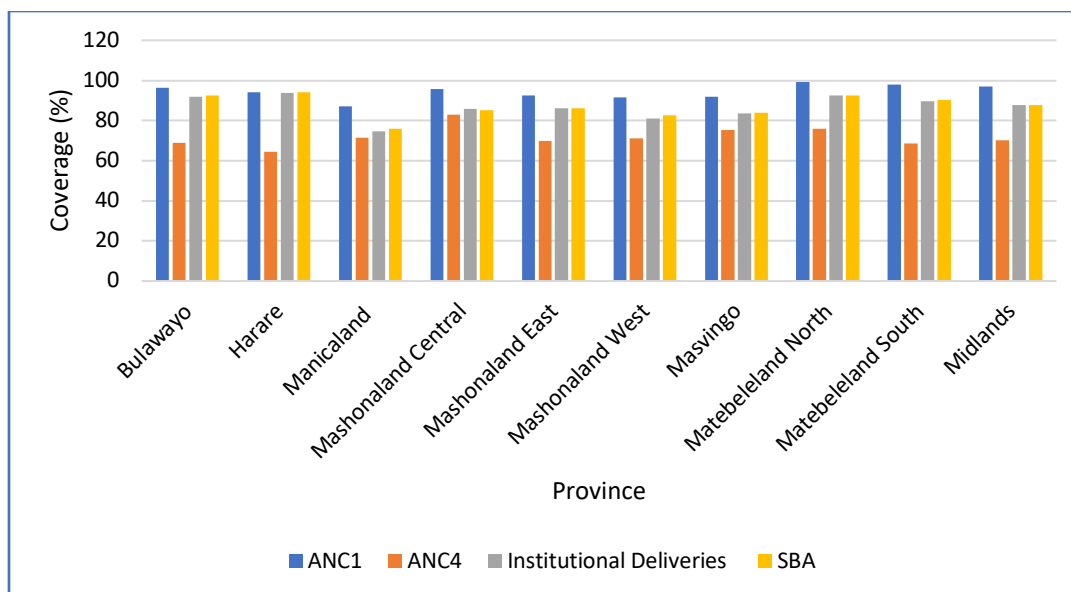


Figure 11: Coverage of ANC and Delivery indicators by sub-regions in Zimbabwe (MICS 2019)

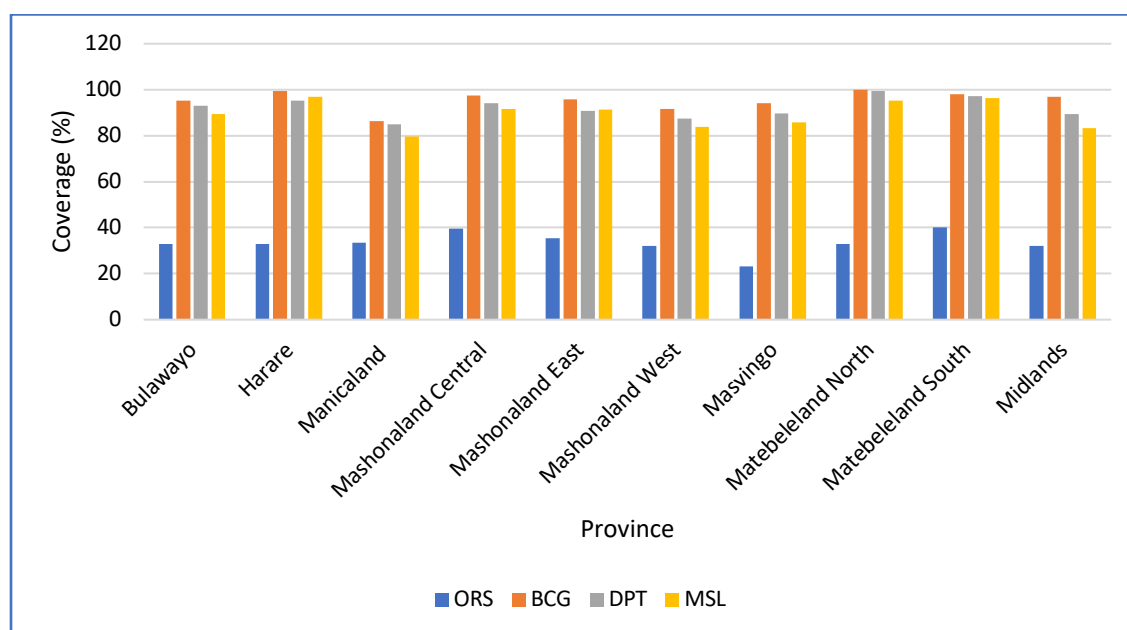


Figure 12: Coverage of selected child health indicators (ORS, BCG, DPT and MSL) by sub-regions in Zimbabwe (MICS 2019)

Potential additional indicators

OPD visits per child (0-4 years) per year

In-patient data for children: admission and case fatality rates

Maternal mortality and stillbirth rates

- Institutional Maternal Mortality Ratio (IMMR) using the standard formula defined by MEASURE Evaluation.

Maternal mortality has been on a downward trend in Zimbabwe since 2010. Findings from the MICS show a decrease of 25% from 614 in 2014 to 462 in 2019. This decline is also corroborated well by routine programme data, which show a downward trend of IMMR from 137 in 2015 to 92 in 2019 (Figure 13). However, IMMR rose to 104 in 2020 against a target of 86 deaths per 100,000 births. IMMR was calculated using the following standard formula b MEASURE Evaluation:

$$(\text{Maternal deaths in health facilities} / \text{total deliveries in health facilities}) * 100,000$$

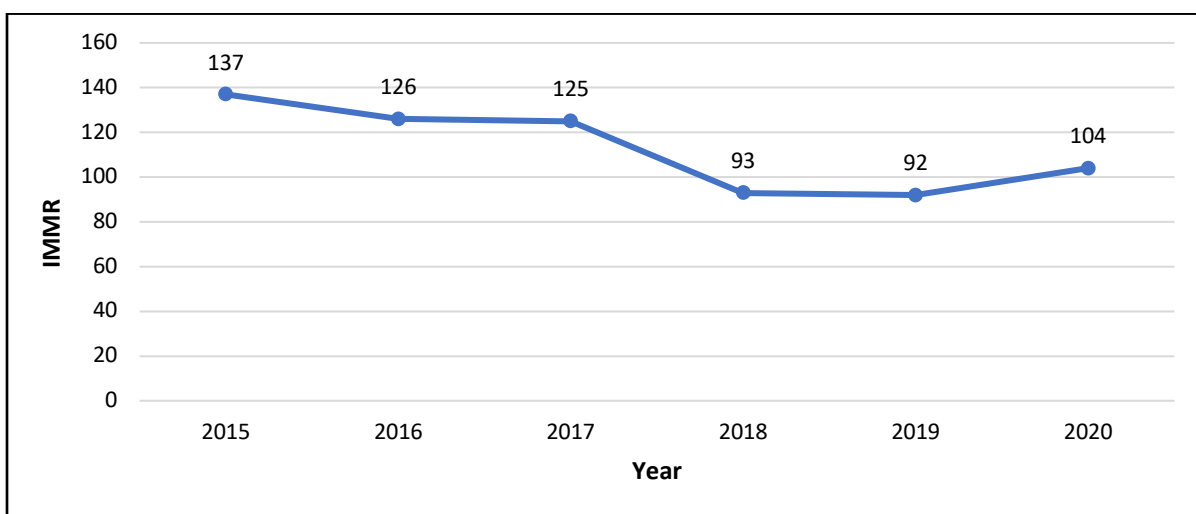


Figure 13: Trends in Institutional Maternal Mortality Ratio: 2015-2020

- Community Maternal Mortality Ratio
- Fresh stillbirths as a measure of the quality of intrapartum care

Family planning

- Modern Contraceptive Prevalence Rate (mCPR) for the sub-regions
- Unmet need for Family Planning (FP) by subregion

Zimbabwe's national FP programme has generally been performing well, with a mCPR of 69% in 2020 (against a target of 68%), up from 66% in 2016 (Figure 14). Unmet need for family planning declined from 11% to 10% in the same period, and the target for 2020 (6.5%) was not met. The sudden surge of unmet need from 9% in 2019 to 10% in 2020 could be due to challenges faced in accessing routine services due to lockdown restrictions brought about by the COVID-19 pandemic.

The national mCPR coverage and unmet need above were calculated using the Family Planning Estimation Tool (FPET), and the country needs technical support in calculating the same indicators at the sub-regional level

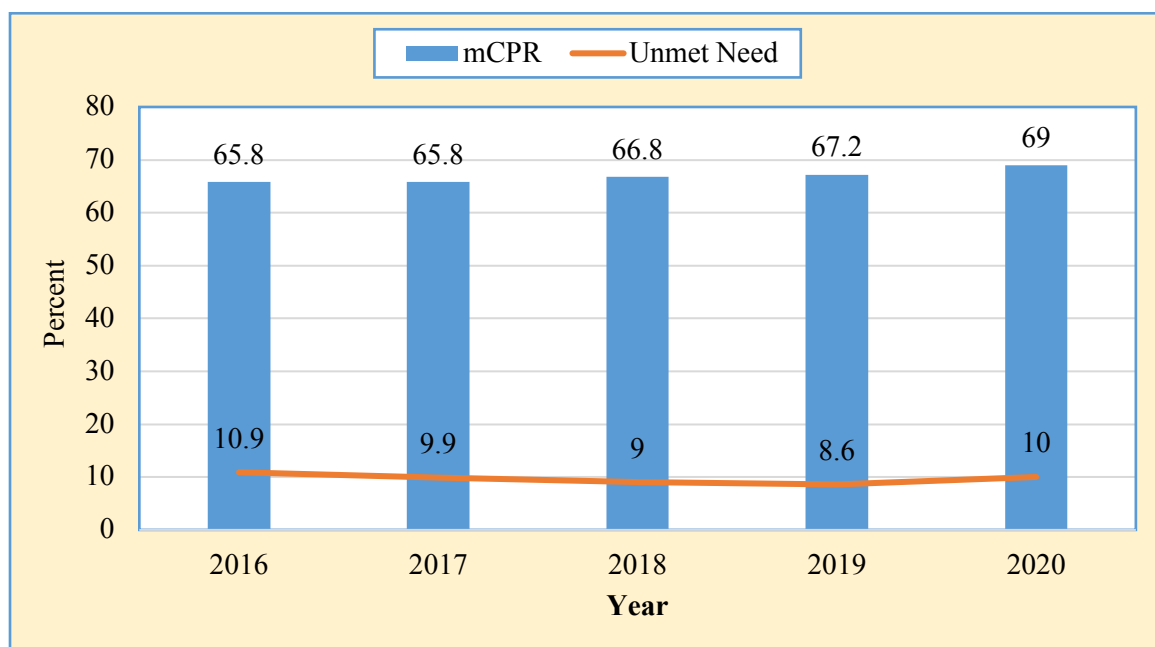


Figure 14 Trends in mCPR and unmet need for Zimbabwe