



Reproductive, Maternal, Newborn and Child Health Indicators

2023 REPORT Tanzania

Countdown to 2030 for the health of women, children and adolescents.

Country Annual Meeting.

In collaboration with GFF, UNICEF, WHO and APHRC.

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EXECUTIVE SUMMARY

This report presents the findings from a statistical analysis of progress and performance in Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCAH) indicators during 2018- 2022 in comparison to the targets of the Health Sector Strategic Plan IV (HSSP IV) for the period (2015-2020) and One Plan III (2021-2026) as well as regional progress analyses. The findings are based on an extensive analysis of health facility data from the DHIS2 database, Vaccine Information Management System (VIMS), national surveys and administrative data. National survey data on levels and trends on several health indicators were obtained from the Tanzania Demographic and Health Survey (TDHS 2015/16). Although the most recent TDHS was conducted in 2022/23 the preliminary findings are available, but the report and dataset are not yet publicly available.

Overall approach

The analysis in this report focused on Tanzania mainland with 26 regions and 184 councils (municipal, town and district) and a total of 12,359 health facilities from DHIS2 database. The DHIS2 database provided monthly district data for a total of 16 indicators for the period between January 2018 and December 2022. A variety of data quality assessments and adjustments were conducted:

- i. Incomplete reporting by districts was adjusted by using a k-value of 0.25, which assumed that the non-reporting facilities provided a quarter of the service volume compared to those facilities that did report;
- ii. Low reporting rates was addressed by imputing the month with low reporting with a median monthly value for the year;
- iii. Extreme outliers were corrected and given the median value for the same year. Lastly, the monthly district data were aggregated to annual regional data for the analysis.

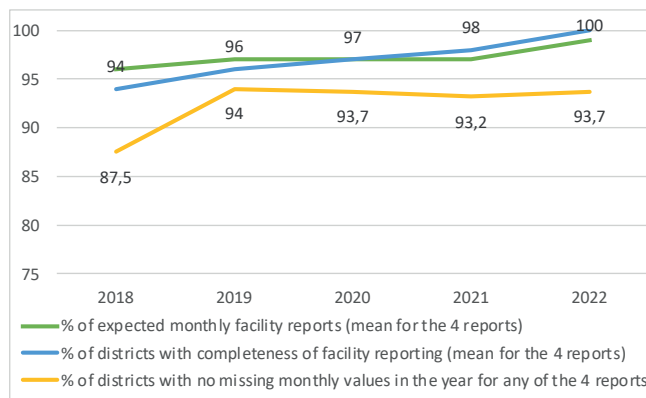
Findings

A summary of findings is presented in a box below. The findings included multiple aspects such as assessment of data quality, service coverage at national and sub-national level, data quality assessment for facility-based maternal mortality and stillbirth rates, outpatient and inpatient service indicators, and consistency of birth and death rates.

DATA QUALITY FINDINGS

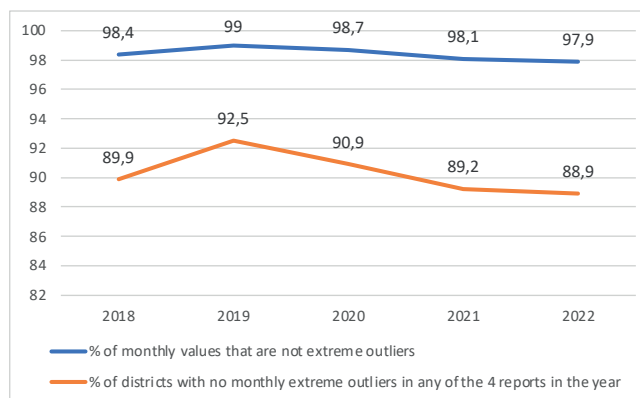
- Overall quality of the DHIS2 health facility data was above 85%.
- The completeness of reporting was high at a rate of at least 90% across the years for four indicators: ANC, Institution deliveries, OPD and child vaccinations

Completeness of monthly reporting for ANC, deliveries, immunization and OPD



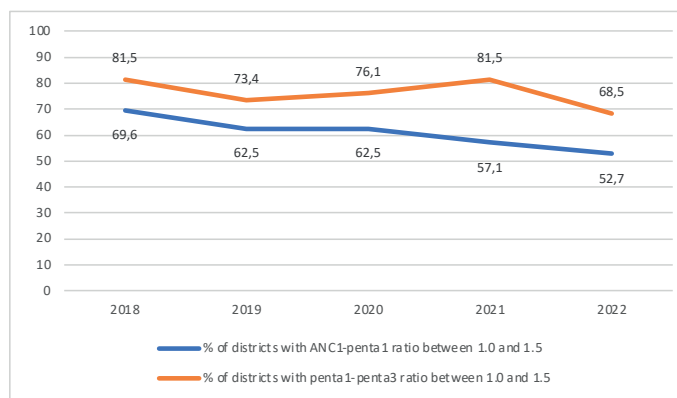
- Extreme outliers for ANC, deliveries, immunization and OPD were few, only 2% of monthly values were extreme outliers and less than 11% of districts had extreme outliers over time.

Extreme outliers for ANC, deliveries, immunization and OPD



- Consistency of annual reports of ANC1 and penta1, and of penta1 and penta3 proportion of districts with adequate ANC1/Penta 1 ratio (1.0- 1.5) decreased to 52.7% by 2022, suggesting under reporting of ANC1 numbers in some districts as compared to Penta1 numbers

Consistency of annual reports of ANC1 and penta1, and of penta1 and penta3

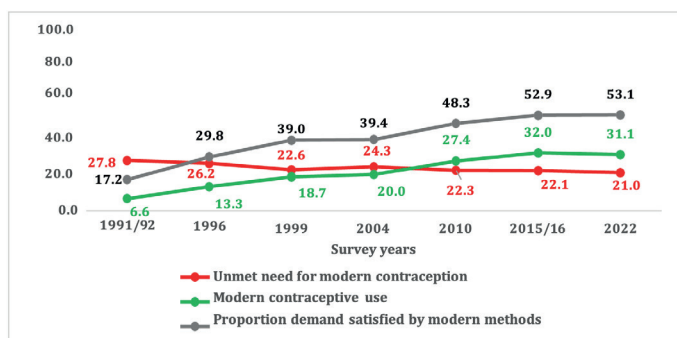


NATIONAL COVERAGE RESULTS

FAMILY PLANNING

- Modern contraceptive use increased over time from 6.6% (1991/92) to 32% (2015/16). Stagnation between the period from 2015/16 to 2022 surveys.
- Unmet need for FP shows poor improvement, remaining at 22% for a 10-year period from 2010 to 2022 survey.
- Proportion of demand satisfied by modern methods increased over time from 17% (1991/92) to 53% (2015/16), there was no change in 2022 survey.

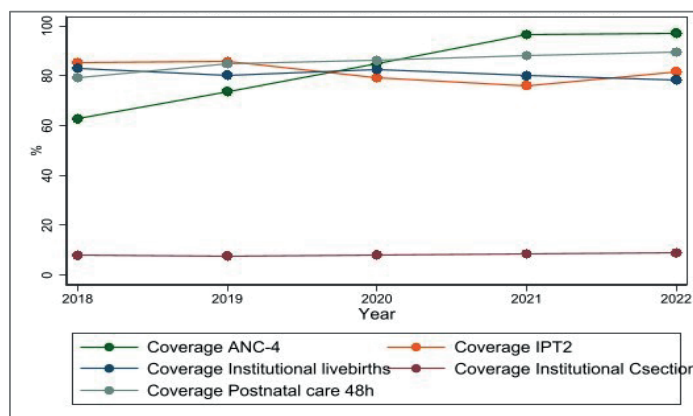
Trends in unmet need for family planning, modern contraceptive use and demand satisfied by modern methods among currently married women 15-49 (TDHS)



MATERNAL AND NEWBORN CARE INDICATORS

- ANC4 coverage increased by 55% from 63% in 2018 to 97% in 2022.
- Rates of institutional livebirths coverage decreased by 6% during the five-year period from 83% in 2018 to 79% in 2022.
- IPT2 coverage showed a fluctuating trend increasing from 85% in 2018 declining to 76% in 2021 and further increase to 82% in 2022.
- C-section rates remained unchanged from 2018 to 2020 (8%) then increase to 9% in 2021 and 2022.

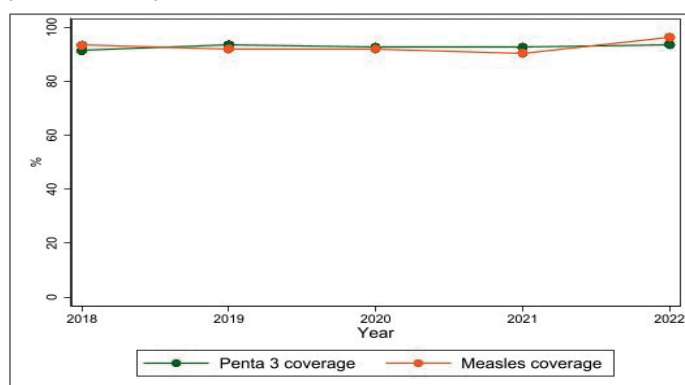
Coverage of maternal and newborn health indicators based on DPT1 derived denominator (2018-2022)



CHILD HEALTH INDICATORS – IMMUNIZATION COVERAGE

- Overall, the coverage of Pentavalent 3rd dose and Measles was universal from 2018 to 2022 (levels above 90%) (Vaccine Information Management System (VIMS))
- BCG coverage rates were over 100% in the DHIS2.

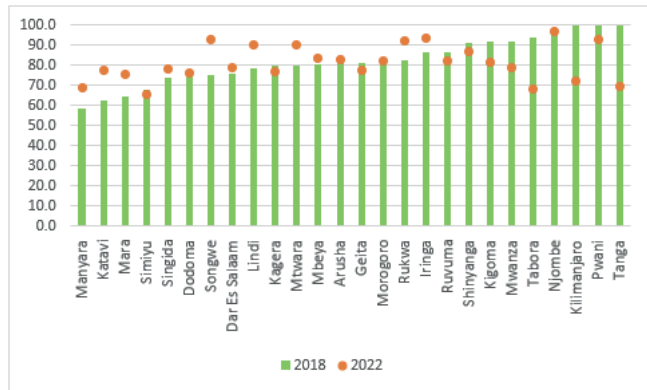
Consistency of annual reports of ANC1 and penta1, and of penta1 and penta3



SUBNATIONAL COVERAGE RESULTS

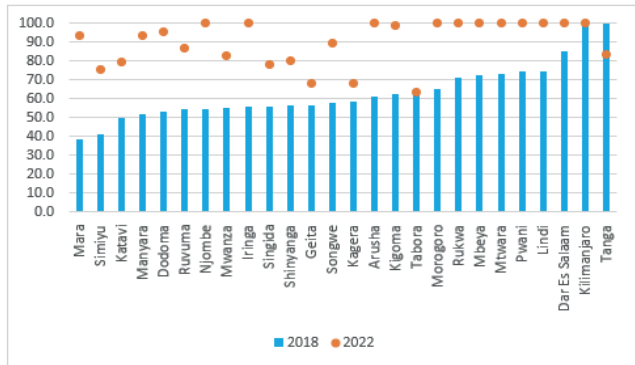
INSTITUTIONAL LIVEBIRTHS

- Small gap in inequality between regions over time.
- The national coverage is between 79% to 82% between 2018-2022, respectively.
- National target was 76% for the year 2018.
- Decrease in institutional live births mainly for Kigoma, Kilimanjaro, Mwanza, Tabora and Tanga was observed between 2018 and 2022.



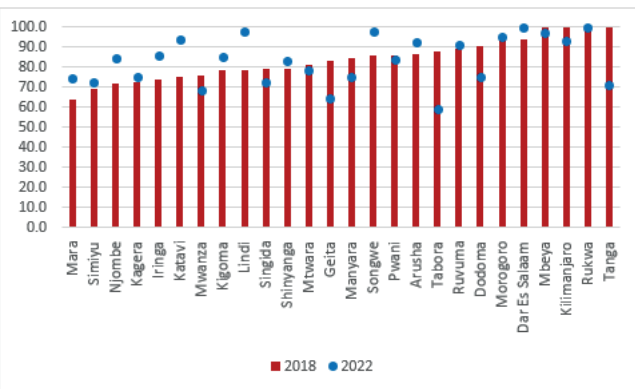
ANC4+

- High variability for the ANC4+ coverage between regions that decreased with time.
- In 2022, for example, coverage ranged from 100% in Kilimanjaro and Dar es salaam to 68% in Geita and Kagera and 63% in Tabora.



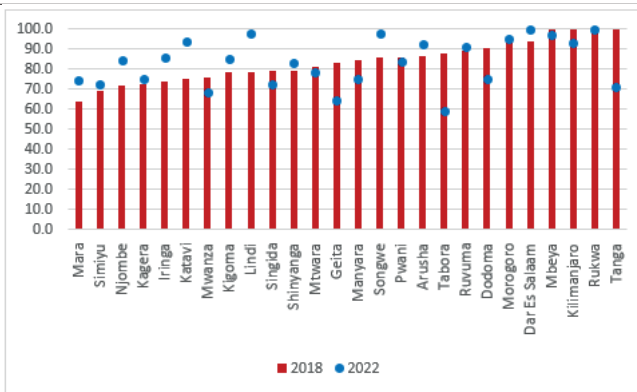
IPT2

- Coverage of IPT2 increased over time.
- Variability and inequality were increasing over time.
- This variability is likely due to variability in commodity availability.
- Dar es salaam region had the highest coverage of IPT2 at 100% in 2022.



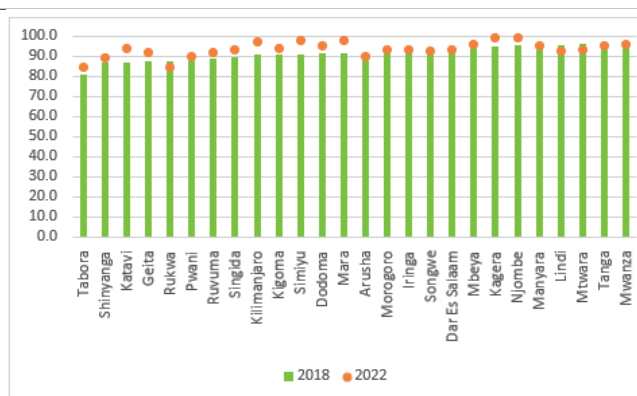
POSTNATAL CARE IN 48 HOURS

- The coverage increased over time.
- Variability and inequality increased over time.
- Geita, Iringa, Kagera, Mara, Morogoro, Rukwa and Singida had coverage above 90% for the year 2018 and 2022.



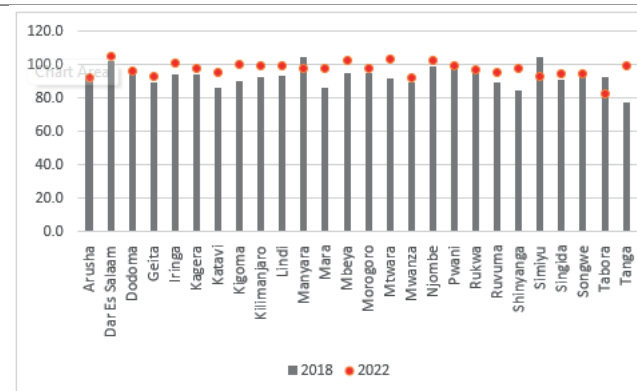
PENTAVALENT 3rd DOSE

- A small decrease in coverage of DPT3/ pentavalent 3rd dose among infants for Arusha, Lindi, Mtwara and Rukwa.
- Small range of inequality between regions over time.
- The national coverage of Penta vaccine-3rd dose was between 90% to 91% between 2018 and 2022.



MEASLES

- An increase trend over time however, variability and inequality also increased over time.
- The coverage in Dar es Salaam region was above 100%.
- Possible reason could be presence of various campaigns and different vaccine programs in 2021.



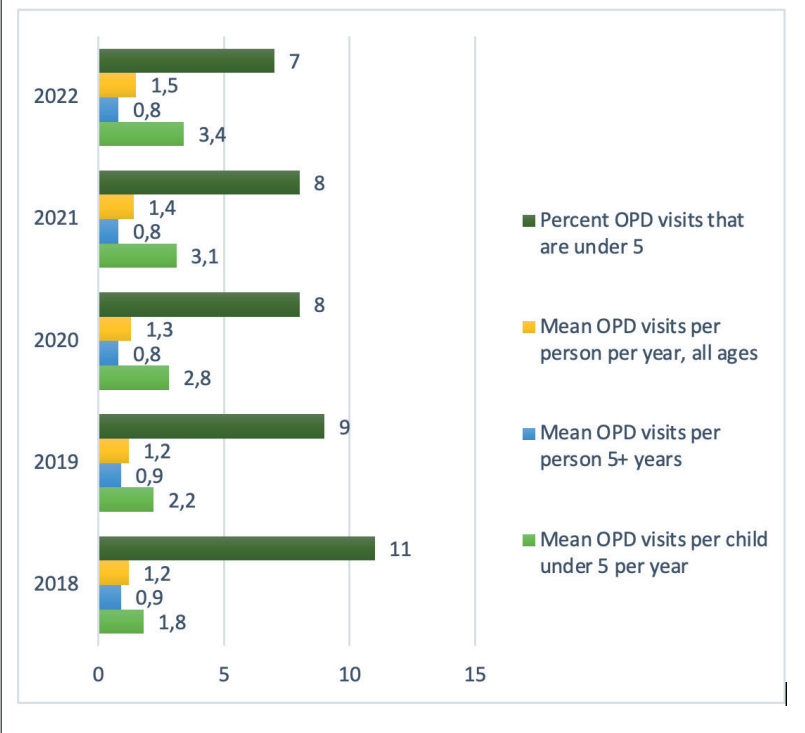
ASSESSMENT OF HEALTH FACILITY DATA QUALITY FOR MATERNAL MORTALITY AND STILLBIRTH RATES

- The overall data quality in Tanzania was good.
- Completeness reporting and consistency of annual numbers for livebirths, stillbirths & maternal deaths were within an acceptable range.
- The ratio of estimated community to Institutional maternal mortality ratios and stillbirths was questionable suggesting under reporting of maternal deaths & stillbirths in Tanzania. The acceptable range for MMR is between 4 and 10 while for SBR is between 0-3
- The results indicate that reporting of stillbirths is lower than expected on the basis of UN estimates for the whole population and that maternal deaths are also under reported and most likely more under reported than stillbirths.

Indicators	2018	2019	2020	2021
Population stillbirth rate, UN estimate (per 1000 births)	19.2	18.9	18.6	18.3
Stillbirths per 1,000 births (institutional)	11.4	10.4	9.6	9.1
Population MMR estimate, UN (per 100,000 live births)	266.8	261.9	238.3	
Maternal mortality per 100,000 live births (MMR) (institutional)	115.3	118.8	114.4	116.5
Ratio: Community (estimated) to institutional MMR	5.5	5.4	5.1	
Ratio: Community(estimated) to institutional still birth rate	3.3	4.1	4.5	4.8

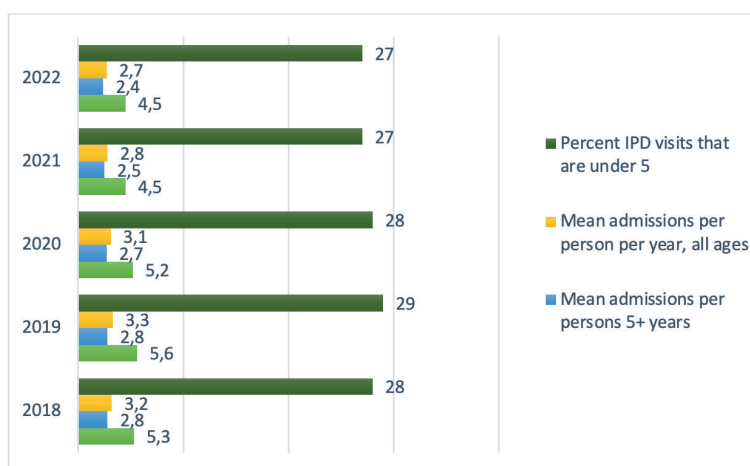
OPD INDICATORS

- The mean OPD visits per a child under-five per year is higher compared to mean OPD visits for those aged 5+ years (3.4 vs 0.8 in 2022).
- Mean OPD visits among children under-five was observed to increase by 88% during the five-year period from 1.8 visits per child per year in 2018 to 3.4 visits per child per year in 2022.
- The proportion of OPD visits that are under five have declined by 36% from 11% in 2018 to 7% in 2022.



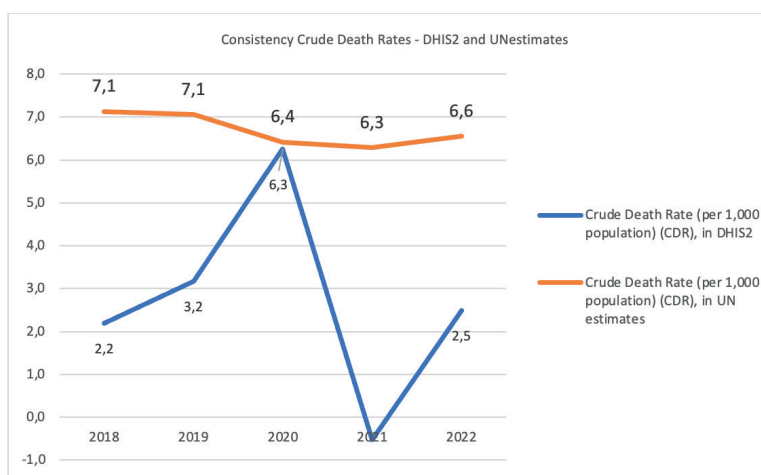
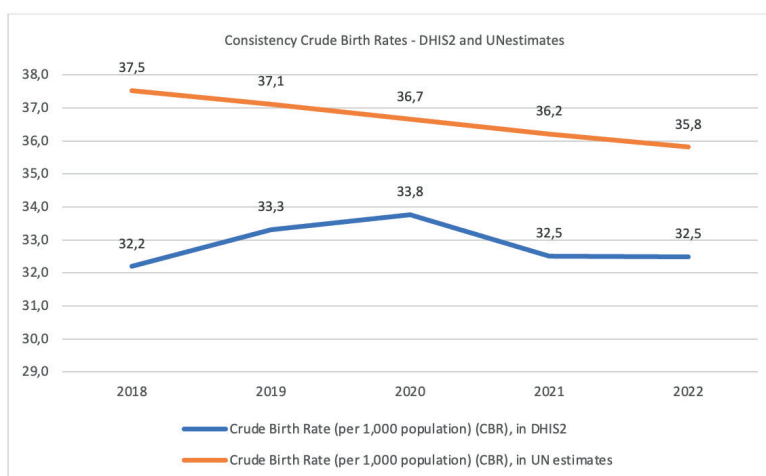
IPD INDICATORS

- Mean admissions per 100 children under-five per year, are almost twice compared to the mean admissions per 100 persons aged 5 years and above (4.5 vs 2.4 in 2022).
- More than a quarter of admissions in health facilities in Tanzania mainland are among children under-five (ranging from 28% in 2018 to 27% in 2022).



BIRTH AND DEATH RATES CONSISTENCY

- Both Crude Birth Rates and Crude Death Rates are underestimated for DHIS2 in comparison with the UN estimates.



1 Introduction

This synthesis report describes the data, analytical approach and results of an analysis of the health facility data obtained from the District Health Information System in Tanzania (DHIS2) for selected indicators of Reproductive, Maternal, Newborn and Child Health (RMNCH), supported by Demographic and Health Survey (DHS) analyses and other health system level data. The analyses were conducted for national and subnational administrative units (regions and districts).

The aim of this analysis is to inform national and global reviews of progress and performance of the national Health Sector Strategic Plans (HSSP) and the national strategic plan for Reproductive, Maternal, Newborn, Child, Adolescent, Health and Nutrition (RMNCAH-N). This report also presents a systematic data quality assessment and adjustment of health facility data, denominator selection, joint assessment of surveys and health facility data to estimate coverage of indicators and consideration of possible biases.

Within this report, **Chapter 1** provides an introduction, followed by **Chapter 2** presenting indicators and targets, and **Chapter 3** describes the dataset used. The findings are presented in **Chapter 4**, which includes five sub-sections: data quality assessment and adjustments, national service coverage trends, maternal and perinatal mortality, curative health services, and subnational progress and performance. **Chapter 5** presents some conclusions and recommendations.

2 Indicators and targets for RMNCAH & nutrition

Table 2.1 summarizes the most important indicators and targets for reproductive, maternal, newborn, adolescent health, and nutrition in the national HSSP V that has been in operation from June 2021 to July 2026 and the national strategic plan for RMNCAH-N (One Plan III), in operation during the same period¹². This overview does not include population mortality indicators (e.g., neonatal, under- five mortality), population fertility indicators, or HIV, most malaria or TB-specific indicators.

Table 2.1. Indicators and targets for RMCNAH and nutrition in the national HSSP V and the RMNCAH-specific plan

Indicator	Baseline (year)	Target (year)	Equity dimensions
Maternal and newborn health care			
Early ANC coverage among pregnant women <12 weeks	27% (DHIS2 2018)	60% (2025)	Councils (at least 50% of councils > 80%)
IPTp2 doses among pregnant women	56% (TMIS 2017) 79% (DHIS2 2015)	85% (2025)	Socio-economic status (SES); urban rural; regions
Institutional deliveries (complemented by SBA rate)	76% (DHIS2 2018) Poorest 41%	85% (2025) At least 75% of councils with >75% coverage Poorest households >75% coverage	Councils; SES; urban rural; regions
Skilled Birth Attendance use during childbirth	77% (DHIS2 2018)	85%	
Caesarean section per 100 live births	8% (DHIS 2 2018)	10% All regions should have at least 8% C-section rate	Region, urban rural, SES, parity
Postnatal care within 48 hours (women)	65% (TDHS 2015/16)	65%	
Postnatal care within 48 hours (newborn)	65% (TDHS 2015/16)	80%	
Child health care			
Full immunization coverage among infants	88% (TDHS 2015/16)	>90% At least 80% of councils with Penta 3 coverage >90%	Councils; SES; urban rural; regions
Measles Rubella (MR) coverage	MR 80% in 195 councils (VIMS 2020)	>95% in 95% of councils	
Child nutrition			

1 MoHCDGEC. Tanzania Health Sector Strategic Plan 2021-2026. Vol. 2026. 2021

2 MOHCDGEC. National Plan for Reproductive, Maternal, Newborn, Child and Adolescent Health & Nutrition-One Plan III. 2021

Indicator	Baseline (year)	Target (year)	Equity dimensions
Early initiation of breastfeeding among all newborn children	54% (TNNS 2018)	65% (AARR 2%)	SES; urban rural; regions
Exclusive breastfeeding for 6 months	58% (TNNS 2018)	90%	
Children under 5 years who are stunted	32% (TNNS 2018)	20% (2025) Equity: all regions below 25% stunting	SES, region, urban rural
Vitamin A supplementation	64% (TNNS 2018)	90%	
Family Planning			
Demand satisfied with modern methods among currently married women aged 15-49 years	53% (TDHS 2015/16)	62%	SES; urban rural; regions
Unmet need for FP	22% (TDHS 2015/16)	17%	
Couple years of protection for all modern methods (CYP)	6.6 million (DHIS 2018)	11 million	
Adolescents' and women's health			
Teenage girls (15-19) who are pregnant or have born a child	27% pregnant or had birth (TDHS 2015/16)	<20%	
Modern contraceptive use among adolescents aged 15-19 years	19% (TDHS 2015/16)	25%	
Demand of FP met by modern methods (15-19 years)	48% (TDHS 2015/16)	62%	
Curative health service utilization (overall, under-5)			
Overall: OPD utilization per person per year	0.85 (2020)	1.2 (2025)	Region, Council

3 Data type and source

Tanzania mainland has 26 regions and 184 councils including municipal, town and district councils. Facility level data from the DHIS2 were used in this report and according to the DHIS2 database there are 12,359 health facilities in mainland Tanzania. Monthly district data from DHIS2 system were extracted and analysed for 16 indicators. These data from DHIS2 covered the period between January 2018 and December 2022. Data quality assessment and adjustments were conducted, and thereafter, the monthly district data were aggregated to obtain annual regional data for this analysis.

National level survey data were also used for assessment of the denominators of the health facility data derived coverage statistics and for external comparison of the coverage statistics. The main surveys conducted from 2016 were TDHS 2016, TPHIA 2017 (HIV), TMIS 2017 (malaria), TNNS 2018 (nutrition) and TDHS 2022. The last census was conducted in 2022, with data still in progress, the population projections used in this analysis were from the 2012 census data. Further details on the data description are presented in Table 3.1 below.

Table 3.1. Health facility data summary

Indicator	
Administrative organization	
Number of regions	26
Number of districts/councils	184
Health facilities	
Number of health facilities in the country (mainland Tanzania)	12,359
Facility data analysis period	
First month and year with health facility data	1st January 2018
Last month and year with health facility data	31st December 2022
Indicators with facility data included in this analysis	
<p>Maternal health indicators: Antenatal care for 1st & 4th visit, IPT 2nd dose, Institutional deliveries (livebirths), Caesarean Section, Postnatal care within 48hrs</p> <p>Child health indicators: BCG vaccination, Penta 1 & 3 vaccination, Measles vaccination</p> <p>Mortality (maternal & perinatal) indicators: Maternal deaths in health facilities, Stillbirths (fresh / macerated)</p> <p>Curative service utilization indicators: OPD visits children under 5 years, IPD admissions children under 5 years</p>	

4 Findings

4.1 Health facility data quality assessment and adjustments

4.1.1 Numerators

The data quality score card shows that the overall quality of the DHIS2 health facility data was above 85% (Table 4.1). The completeness of reporting was high at a rate of at least 90% across the years for six indicators: ANC, Institution deliveries, OPD, IPD, PNC and child vaccinations. Percent of districts with low reporting rates (below 81%) was small for all indicators (Figure 4:1). Extreme outliers were few, only 2% of monthly values were extreme outliers and less than 11% of districts had extreme outliers over time.

Consistency between ANC1 and Penta1 numbers was modest and decreased with time, proportion of districts with adequate ANC1/Penta 1 ratio (1.0-1.5) decreased to 52.5% by 2022, suggesting underreporting of ANC1 numbers in some districts as compared to Penta1 numbers. Consistency between Penta1/Penta 3 numbers was modest over time (Figure 4:2).

Table 4.1. Summary of the health facility data quality assessment (2018-2022)

			2018	2019	2020	2021	2022
1	Completeness of monthly facility reporting, for ANC, deliveries, immunization, OPD and IPD						
1a	% of expected monthly facility reports (mean for ANC, deliveries, immunization and OPD reports, national)		96.0	97.0	97.0	97.0	99.0
1b	% of districts with completeness of facility reporting (mean for the 4 reports) \geq 90%		94.0	96.0	97.0	98.0	100.0
1c	% of districts with no missing monthly values in the year for any of the 4 reports		87.5	94.0	93.7	93.2	93.7
2	Extreme outliers for ANC, deliveries, immunization and OPD						
2a	% of monthly values that are not extreme outliers (mean for ANC, deliveries, immunization, OPD reports, national)		98.4	99.0	98.7	98.1	97.9
2b	% of districts with no monthly extreme outliers in any of the 4 reports in the year		89.9	92.5	90.9	89.2	88.9
3	Consistency of annual reports of ANC1 and penta1, and of penta1 and penta3						
3a	% of districts with ANC1-penta1 ratio between 1.0 and 1.5		69.6	62.5	62.5	57.1	52.7
3b	% of districts with penta1-penta3 ratio between 1.0 and 1.5		81.5	73.4	76.1	81.5	68.5
4	Annual data quality score (mean of the indicators 1a to 3b)						
			88.0	87.0	87.0	87.0	85.0

An adjustment was made for incomplete reporting by assuming that the non-reporting facilities provided some services ($k=0.25$, i.e., a quarter of the service volume compared to those facilities that did report). Extreme outliers in the monthly values were corrected by imputing a value based on the median value of the calendar year (Table 4.2).

Figure 4:1. Percent of district with low reporting rate (below 81%) by service and year (2018-2022)

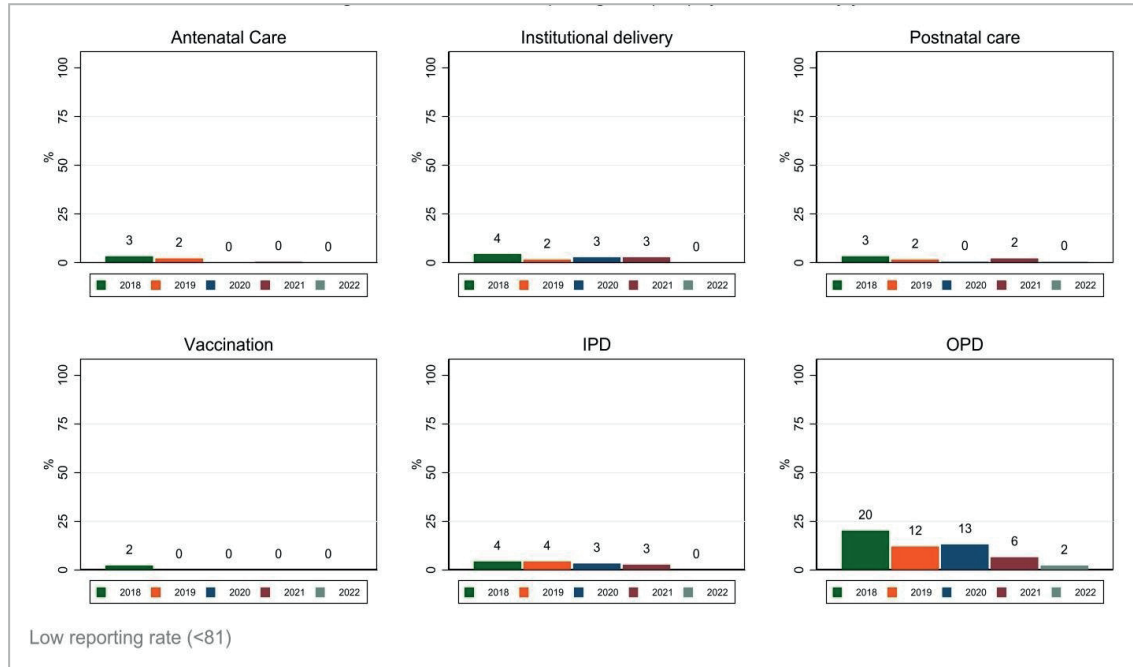


Figure 4:2. Comparison of ANC1 and Penta 1 numbers by year (2018-2022)

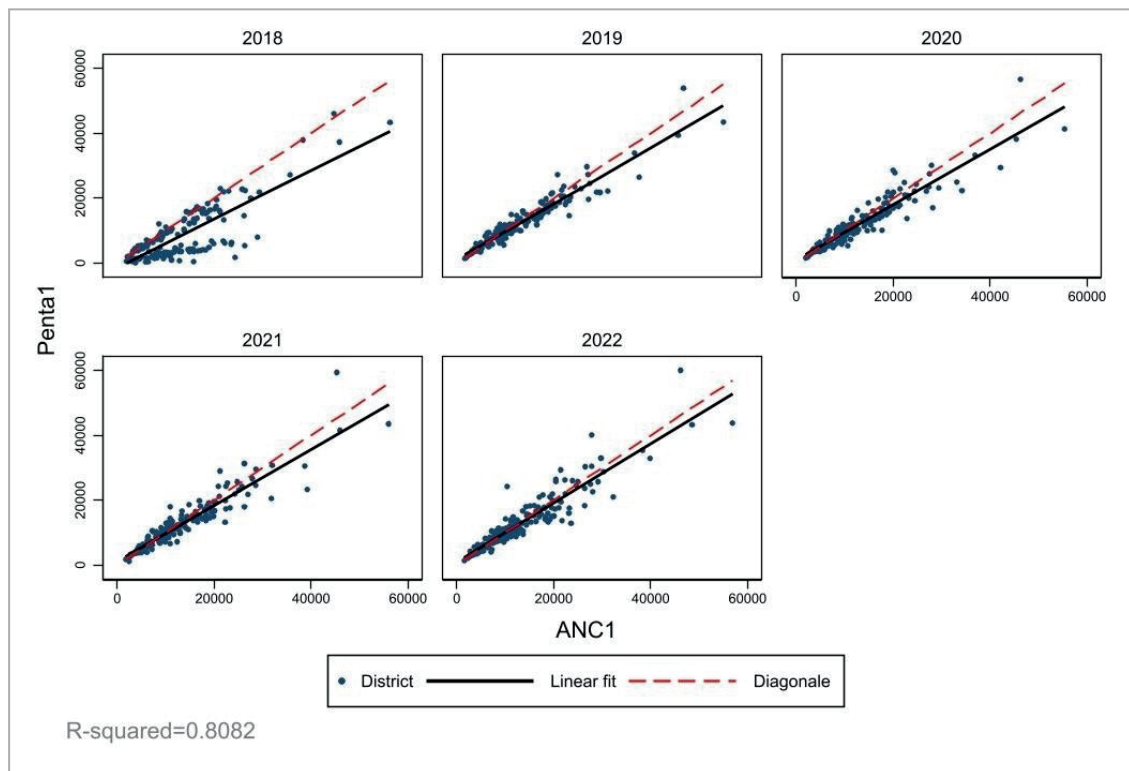


Table 4.2. Summary of adjustments made to the raw health facility data in preparation of a clean data set for the endline analysis

Problem	Action	Adjustment
Low reporting rates: identifying low rates that were adjusted	If below 81%, data were imputed	Median monthly value for the year was imputed for the month with low reporting
Incomplete reporting by districts, services over time, affecting trend assessment	If reporting rates were <81% an assumption was made about the volume of services provided by the non-reporting facilities	Adjustment factor k value was used to adjust for incomplete reporting (k value= 0.25) assuming that the non-reporting facilities provided a quarter of the service volume compared to those facilities that did report
Extreme outliers affecting coverage trend assessments	If a monthly value was greater or smaller than 5 times the median absolute deviation (MAD) from monthly median value, an adjustment was made	Extreme monthly outliers were corrected and given the median value for the same year
Missing values	If there was a missing value, data were imputed	Median monthly value for the year was imputed for the month with missing value

4.1.2 Denominators

In order to assess the coverage of interventions, a population denominator or target population is needed, this includes total population in need of the service, live births, pregnancies and children eligible for immunization. A systematic assessment of appropriate denominator to estimate the coverage of intervention is important.

Denominators considered for the estimation of target population in this analysis were:

- Projected live births available in DHIS2.
- Projected live births from UN estimates at a national level.
- Adjusted facility data denominators using indicators with near-universal coverage adjusted for non-facility use (ANC-1 (89.7%), DPT-1 (97%)).

Denominator assessment methods:

- Coverage of selected indicators (institutional livebirths, Penta3) at national and subnational levels was computed using the 3 denominator options.
- Coverage estimates were compared to survey estimates at national and subnational levels using standard error differences, a smaller number of standard errors difference from the survey coverage is indicative of better performance of the method.
- Coverage estimates from the most plausible denominator option were used to describe trends in the selected maternal and newborn health indicators.

4.1.3 National population projections as denominator

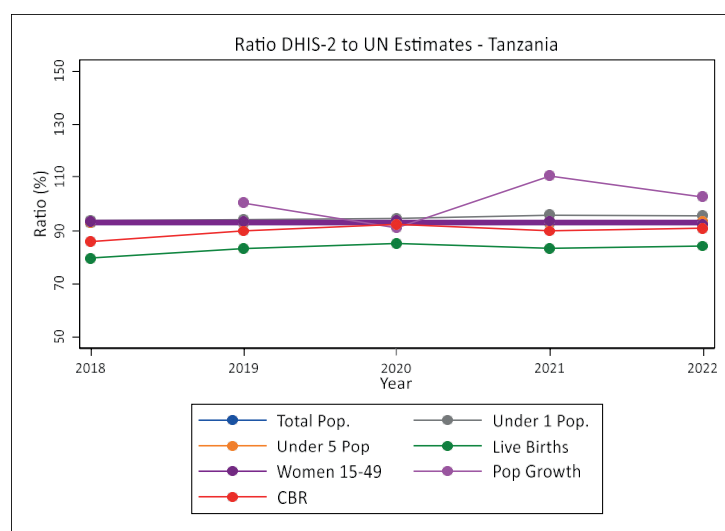
The comparison of the DHIS2 demographic indicators with the UN Population projections show the deviations across the years for livebirths and Crude birth rates (Figure 3, if the ratio is 100 the two values are the same). The implication of this is having the coverage rates for maternal and newborn health interventions (ANC1, BCG and first pentavalent vaccination) being all well over 100% for all years, which is not possible.

Important for the RMNCH analyses is the number of (live) births. The ratio of DHIS2 to UN estimates of livebirths was below 100% across all years indicating an underestimation of livebirths from DHIS2 (Figure 4:3 & Table 4.3). The CDR from Table 4.3 suggests that DHIS2 underestimates the mortality rates. Crude death rates were usually between 5 and 10 per 1,000 population for a country like Tanzania. (Table 4.3).

Table 4.3. Assessment of the national population projection figures in DHIS2 (2018-2022)

Demographic Parameter	2018	2019	2020	2021	2022
Total population in DHIS2 (x1,000)	53,755	55,400	56,945	58,858	60,651
Total population in UN estimates (*1,000)	58,090	59,872	61,704	63,588	65,497
Ratio total population in DHIS2 to UN population					
Annual population growth rate (%), according to DHIS2 population figures	3.0	3.0	2.7	3.3	3.0
Annual population growth rate (%), according to UN estimates	3.0	3.0	3.0	3.0	2.9
Population composition					
% of population who are under 1 year, DHIS2	3.6	3.6	3.6	3.6	3.6
% of population who are under 1 year, UN estimates	3.6	3.6	3.5	3.5	3.5
% of population who are under 5 years, DHIS2	17.0	16.9	16.8	16.7	16.6
% of population who are under 5 years, UN estimates	16.9	16.8	16.7	16.6	16.4
% of population who are women 15-49 years, DHIS2	23.9	23.8	24.0	24.1	24.2
% of population who are women 15-49 years, UN estimates	23.7	23.8	24.0	24.1	24.2
Consistency birth and death rates					
Total live births in DHIS2 projections	1,730	1,845	1,923	1,914	1,971
Crude Birth Rate (per 1,000 population) (CBR), in DHIS2	32.2	33.3	33.8	32.5	32.5
Crude Birth Rate (per 1,000 population) (CBR), in UN estimates	37.5	37.1	36.7	36.2	35.8
Crude Death Rate (per 1,000 population) (CDR), in DHIS2	2.2	3.2	6.3	-0.5	2.5
Crude Death Rate (per 1,000 population) (CDR), in UN estimates	7.5	7.1	6.7	6.2	6.8

Figure 4:3. Comparison of the population indicators in DHIS2 with the UN (ratio 100 means the same)



4.1.4 Facility data derived denominators

According to the TDHS 2016 and TDHS 2022, the coverage of selected interventions is close to 100%, for example, ANC1 was 89.7% (TDHS 2022), penta1 was 97% (TDHS 2016). Coverage of Pentavalent vaccination, 3rd dose is high in most of the regions of the mainland, however, institutional live births show some variations among the regions (Table 4.4 & Table 4.5). This means that the number of reported ANC1 visits to the facilities reported in the DHIS2 should be close to the number of pregnant women at about 4-5 months (the timing of the 1st visit) in the population. And that the reported number of immunizations (penta1) should be close to the number of infants eligible for first vaccinations (at birth and at 6 weeks of age).

In this method, the denominators or target populations were derived from the reported numbers in the facility data. We added those who did not use the services (10% for ANC1 and 3% for penta1). To obtain live births from these denominators, we subtract pregnancy loss (5% abortion, 1.8% stillbirths) and add twins (1.5%) from the total number of women pregnant at 4-5 months obtained from ANC1 numbers. To obtain live births from the immunization numbers, we used penta1, and added the percent that never used the services (3%) and added 2.4% for neonatal deaths and 0.9% for post-neonatal deaths. BCG is also possible, but the numbers seem to be too high in Tanzania, probably due to recording of revaccination of infants in case the BCG scar is not visible.

Table 4.4. Regional comparison of institutional live birth coverage for survey and facility estimates using ANC1 and DPT1-derived denominators

Institutional live birth coverage	Survey		Facility data					
	Period for coverage estimate		Period for coverage estimate (Institutional deliveries)					
			DHIS-2 projection as denominator		ANC1-Derived denominator		DPT1-derived denominator	
	Coverage	Standard error (SE)	Coverage	N of SE difference	Coverage	N of SE difference	Coverage	N of SE difference
Arusha	0.55	0.10	1.02	4.78	0.71	1.56	0.81	2.61
Dar Es Salaam	0.94	0.01	1.00	4.96	0.67	23.42	0.76	15.42
Dodoma	0.69	0.07	1.01	4.65	0.70	0.15	0.75	0.91
Geita	0.47	0.05	1.01	10.84	0.68	4.24	0.81	6.86
Iringa	0.93	0.04	1.01	2.10	0.85	1.96	0.87	1.58
Kagera	0.45	0.06	1.01	9.24	0.76	5.08	0.80	5.68
Katavi	0.46	0.06	1.00	9.81	0.54	1.51	0.62	2.97
Kigoma	0.46	0.09	1.00	6.35	0.82	4.20	0.91	5.29
Kilimanjaro	0.91	0.02	1.02	5.06	0.88	1.82	1.15	11.38
Lindi	0.81	0.07	1.01	3.02	0.78	0.35	0.78	0.41
Manyara	0.48	0.07	1.01	7.97	0.55	1.05	0.58	1.61
Mara	0.50	0.06	1.00	8.47	0.66	2.66	0.64	2.34
Mbeya	0.65	0.07	1.01	5.29	0.75	1.52	0.81	2.28
Morogoro	0.75	0.05	1.01	4.75	0.68	1.27	0.82	1.21
Mtwara	0.81	0.04	1.01	4.68	0.78	0.75	0.80	0.40
Mwanza	0.53	0.06	1.00	8.05	0.79	4.41	0.92	6.61
Njombe	0.86	0.05	1.02	3.29	0.88	0.33	0.96	1.95
Pwani	0.83	0.04	1.01	4.33	0.82	0.33	1.02	4.63
Rukwa	0.64	0.07	1.00	4.99	0.69	0.67	0.82	2.51
Ruvuma	0.86	0.05	1.00	2.80	0.80	1.07	0.87	0.22
Shinyanga	0.61	0.04	1.01	9.91	0.76	3.78	0.91	7.45
Simiyu	0.40	0.05	1.01	13.16	0.61	4.45	0.67	5.91
Singida	0.62	0.06	1.01	7.09	0.64	0.43	0.73	1.97
Tabora	0.52	0.06	1.00	7.79	0.63	1.76	0.93	6.67
Tanga	0.67	0.07	1.00	4.68	0.65	0.24	1.84	16.36

Table 4.5. Regional comparison of Pentavalent vaccination, 3rd dose coverage for survey and facility estimates using ANC1 and DPT1-derived denominators

Pentavalent vaccination, 3rd dose	Survey		Facility data					
	Period for coverage estimate		Period for coverage estimate (Institutional deliveries)					
			DHIS-2 projection as denominator		ANC1-Derived denominator		DPT1-derived denominator	
	Coverage	Standard error (SE)	Coverage	N of SE difference	Coverage	N of SE difference	Coverage	N of SE difference
Arusha	0.97	0.02	1.16	8.03	0.81	7.36	0.92	2.46
Dar Es Salaam	0.95	0.02	1.23	14.77	0.83	6.59	0.94	0.74
Dodoma	0.99	0.01	1.22	17.03	0.86	9.47	0.91	5.37
Geita	0.80	0.06	1.08	4.68	0.74	1.05	0.87	1.19
Iringa	0.96	0.03	1.07	4.20	0.91	1.84	0.92	1.50
Kagera	0.97	0.02	1.20	11.56	0.91	3.04	0.95	1.20
Katavi	0.68	0.07	1.40	11.01	0.76	1.35	0.87	2.99
Kigoma	0.90	0.04	1.00	2.50	0.82	2.12	0.91	0.19
Kilimanjaro	0.98	0.02	0.80	7.83	0.70	12.45	0.91	3.15
Lindi	0.88	0.07	1.23	5.30	0.97	1.27	0.96	1.09
Manyara	0.97	0.03	1.65	26.27	0.90	2.86	0.95	0.72
Mara	0.92	0.04	1.43	14.15	0.95	0.85	0.92	0.10
Mbeya	0.96	0.03	1.18	7.88	0.89	2.27	0.95	0.39
Morogoro	0.91	0.04	1.13	6.17	0.78	3.78	0.92	0.26
Mtwara	0.92	0.04	1.21	7.25	0.95	0.68	0.96	0.94
Mwanza	0.87	0.03	1.06	5.62	0.84	0.73	0.97	3.11
Njombe	0.98	0.02	1.01	1.65	0.88	4.18	0.95	1.02
Pwani	0.92	0.04	0.87	1.16	0.72	4.87	0.89	0.84
Rukwa	0.85	0.05	1.06	4.02	0.74	2.04	0.87	0.51
Ruvuma	0.97	0.02	1.02	2.33	0.82	6.71	0.89	3.83
Shinyanga	0.72	0.08	0.96	3.15	0.73	0.12	0.87	1.93
Simiyu	0.85	0.05	1.36	10.97	0.83	0.55	0.91	1.28
Singida	0.92	0.06	1.24	5.76	0.80	2.12	0.90	0.36
Tabora	0.70	0.10	0.87	1.65	0.55	1.46	0.81	1.09
Tanga	0.92	0.04	0.52	9.77	0.34	14.21	0.96	1.05

4.1.5 Assessment and selection of plausible denominators

The choice of the best denominator was guided by the assessment of both the national and subnational coverage by comparing standard error differences from the survey coverage. A smaller number of standard errors difference from the survey coverage was indicative of better performance of the method. Based on this evaluation, the most plausible denominator was DPT1 derived denominator for both maternity-related indicators and for child immunization indicators at a national and subnational level (Table 4.6).

Table 4.6. Assessment and selection of plausible denominators

Indicator	Survey		Facility data								
	Period for coverage estimates										
			DHIS2 projections as denominator		ANC1-derived denominator		DPT1 derived denominator		UN projections denominator		
	Coverage	SE	Coverage	N of SE difference	Coverage	N of SE difference	Coverage	N of SE difference	Coverage	N of SE difference	
Indicator Institutional live births coverage											
National	0.812	0.006	1.01	34.018	0.71	17.524	0.83	3.093	0.80	2.062	
Regional*	0.64	0.055	1.01	5.058	0.71	1.523	0.81	2.609			
Indicator Pentavalent vaccination, 3rd dose											
National	0.893	0.012	1.10	16.747	0.79	8.318	0.91	1.384	0.88	1.041	
Regional*	0.92	0.036	1.13	6.169	0.83	2.119	0.92	1.092			

*Median

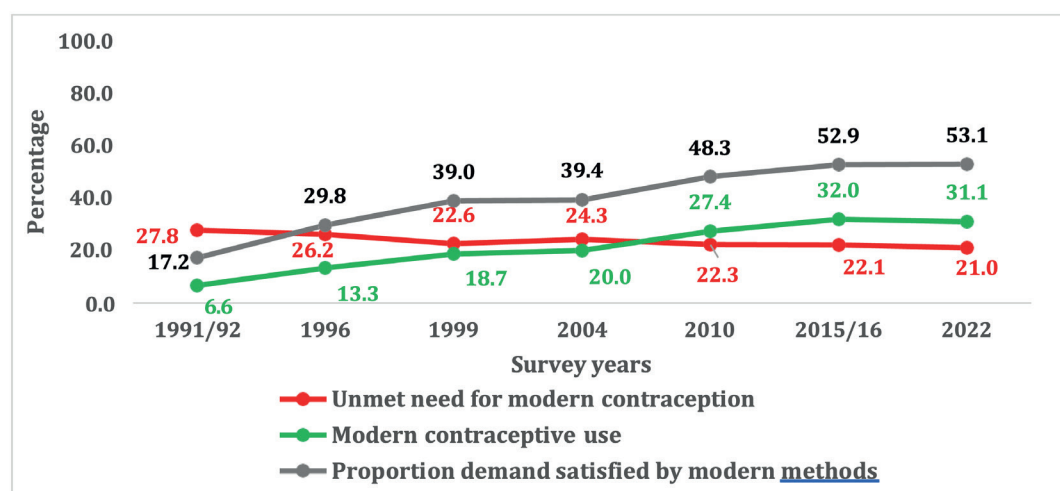
4.2 National service coverage trends

4.2.1 Family planning

Trends in unmet need for family planning (FP), modern contraceptive use and demand for family planning satisfied by modern methods among currently married women 15-49 in Tanzania. Modern contraceptive use increased over time from 6.6% (1991/92) to 32% in 2015/16 survey, however, there has been stagnation between the period from 2015/16 to 2022 surveys. Unmet need for FP shows poor improvement, remaining at 22% for a 10-year period from 2010 to 2022 survey.

Proportion demand satisfied by modern methods increased overtime from 17% (1991/92) to 53% (2015/16), there was no change in 2022 survey. This could be explained by the stagnation observed in modern contraceptive use (Figure 4:4)

Figure 4:4. Trends in unmet need for family planning, modern contraceptive use and demand satisfied by modern methods among currently married women 15-49 from TDHS



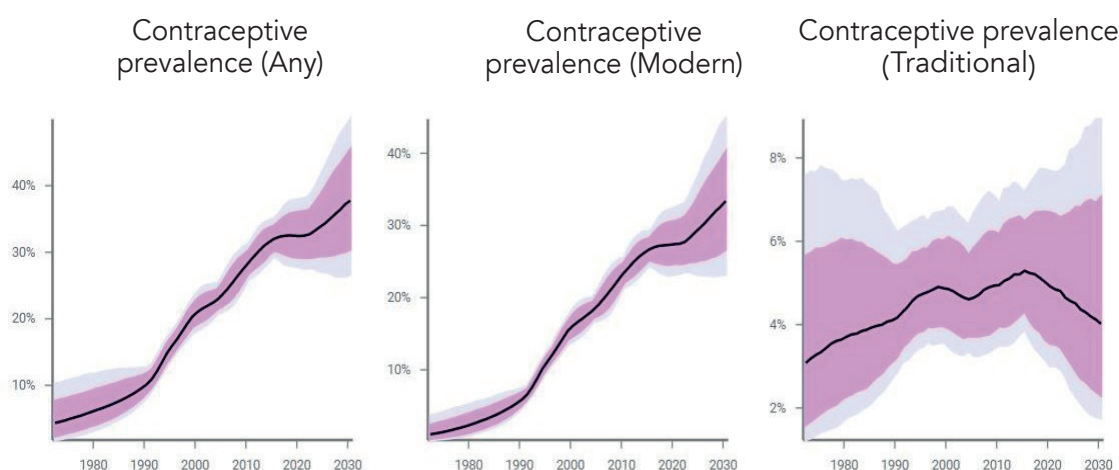
4.2.1.1 Family Planning Estimation Tool (FPET)³

Family planning trends and projections using Family Planning Estimation Tool (FPET) from Track 20³. The FPET generates annual estimates of contraceptive prevalence (mCPR), the percentage of women with an unmet need for contraception and demand for family planning satisfied by modern methods, based on all available survey data and service statistics data, where available. For the current report service statistics/health facility data were not used for the estimation of FP coverage. The FPET tool fits a statistical model that estimates the likelihood of a given result based on prior observed values from surveys and project beyond the date of the last survey and into the future. Having such estimates gives countries the information to better monitor progress, estimate how mCPR and unmet need are changing in response to current programming, and make necessary adjustments to accelerate progress toward reaching FP goals.

4.2.1.1.1 FPET estimates on Contraceptive Prevalence

The FPET estimates on total contraceptive prevalence (any method) shows an increase in the proportion of all women in reproductive age who are currently using or whose sexual partner is currently using at least one method either traditional or modern. The estimates for all women were derived from survey values of married and un-married women. It is projected that by 2030 the percentage of contraceptive users will increase to 39.5% (Figure 4:5).

Figure 4:5. FPET estimates of the proportion of all women using contraceptive, any method, modern and Traditional. [Source: FPET tool]

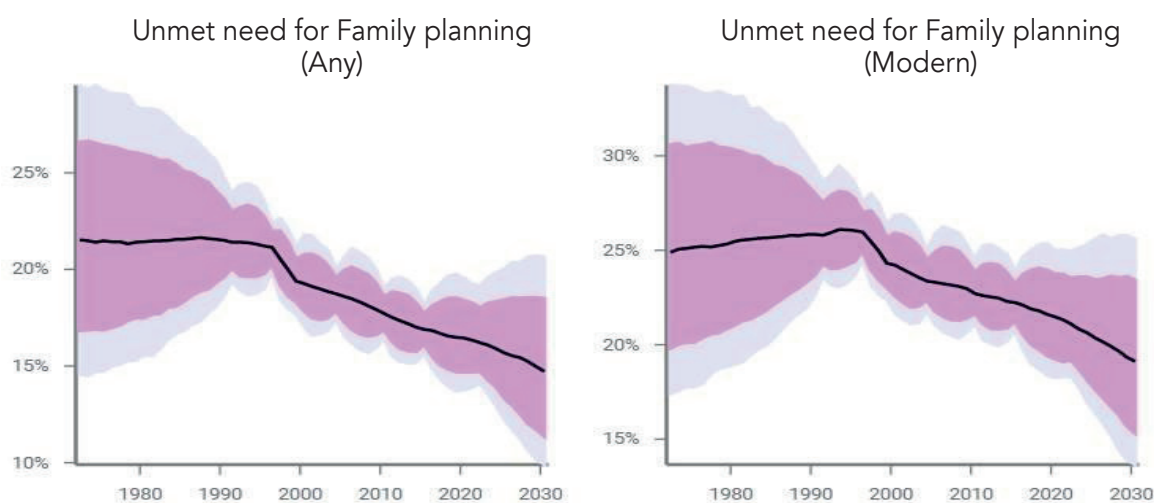


4.2.1.2 FPET estimates on unmet need for family planning

The FPET estimates highlights that there will be a decline in the percentage of currently married women of reproductive age who have unmet need for family planning. By 2030, unmet need for family planning is projected to decline to about 17% (Figure 4:6).

3 Track 20. Family Planning Estimation Tool (FPET) [Internet]. [cited 2023 Aug 1]. Available from: https://track20.org/pages/track20_tools/FPET.php

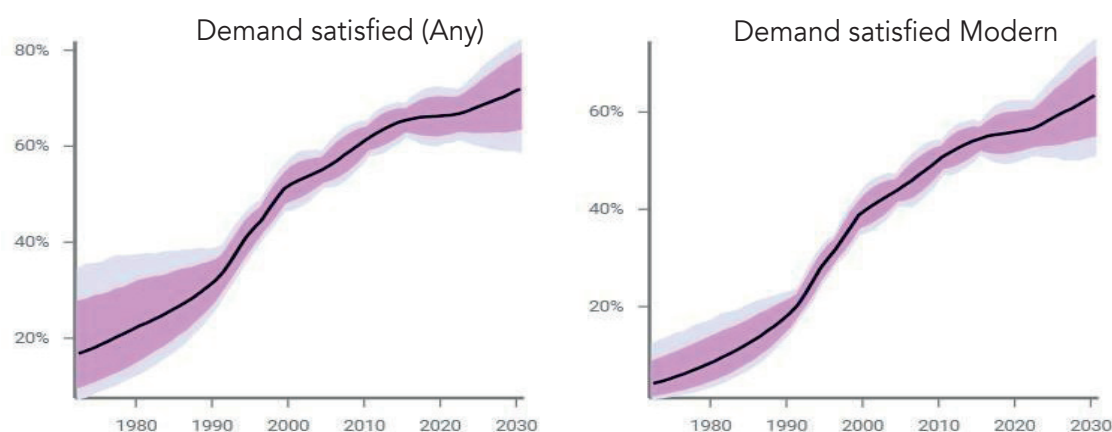
Figure 4:6. FPET estimates of the proportion of all women with unmet need for family planning (any method and modern only) [Source: FPET tool]



4.2.1.3 FPET estimates on demand for family planning satisfied.

FPET estimates (Figure 4:7) shows that the percentage of women of reproductive age who are sexually active and who have their need for family planning satisfied by contraceptives will continue to increase gradually to more than 60% by 2030. Given the current trends in modern contraceptive use, the target set in Tanzania’s HSSP V to achieve proportion demand satisfied by modern methods to 60% by 2025 is unlikely.

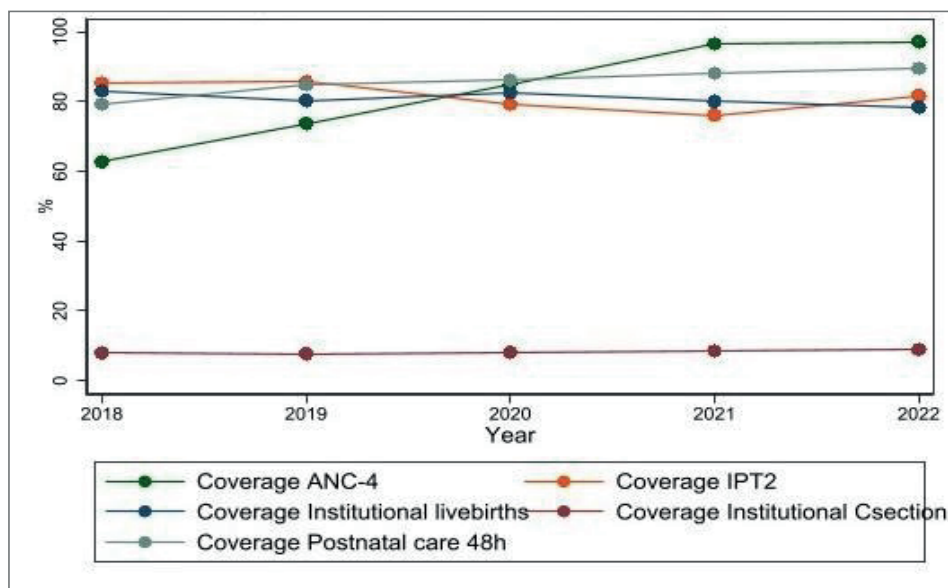
Figure 4:7. FPET estimates of the proportion of all women of reproductive age who are sexually active and who have their need for family planning satisfied by contraceptives (any method and modern only)



4.2.2 Maternal and newborn service indicators coverage – national

According to Tanzania health facility data, ANC4 coverage increased by 55% from 63% in 2018 to 97% in 2022 (Figure 4:8). Rates of institutional livebirths coverage decreased by 6% during the five-year period from 83% in 2018 to 79% in 2022. IPT2 coverage showed a fluctuating trend increasing from 85% in 2018 declining to 76% in 2021 and further increase to 82% in 2022. C-section rates remained unchanged from 2018 to 2020 (8%) then increase to 9% in 2021 and 2022 (Figure 8).

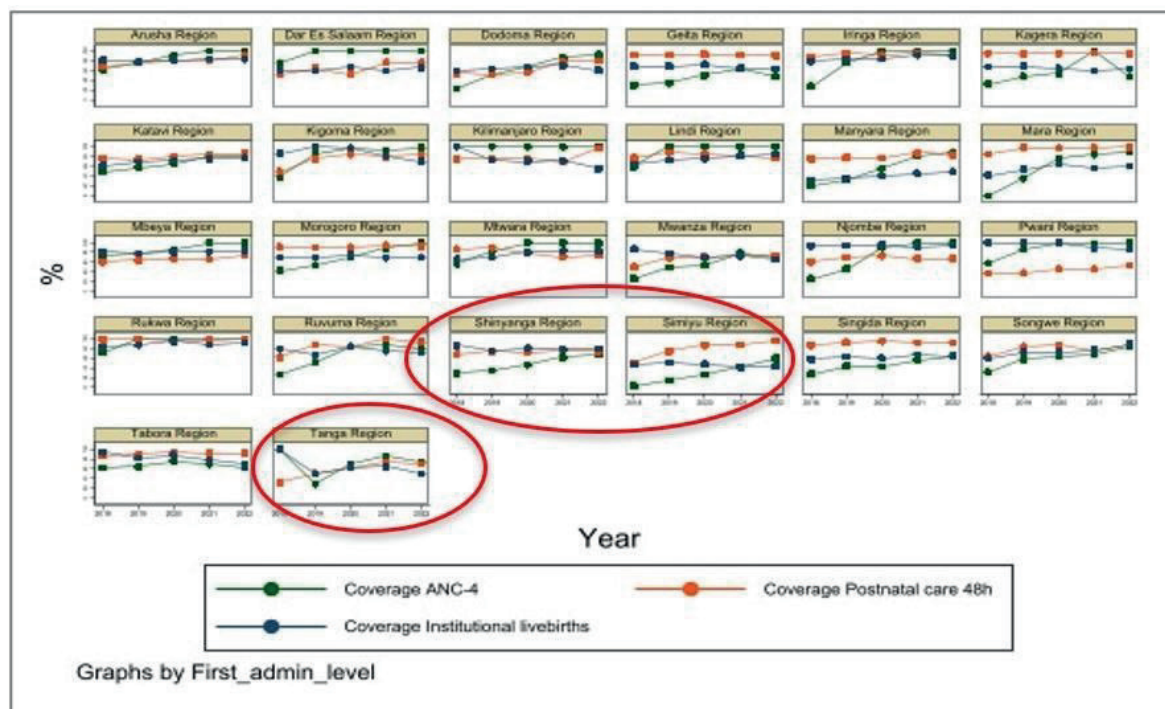
Figure 4:8. National trends in coverage of maternal and newborn health indicators based on DPT1-derived denominator (2018-2022)



4.2.3 Maternal and newborn service indicators coverage by regions

Looking at three indicators closely by regions: coverage of ANC4, institutional livebirths and postnatal care for the woman within 48 hours, regions lagging behind in coverage include Tanga, Shinyanga and Simiyu regions, with coverage below 60% in majority of these indicators (Figure 4:9). There was a change in reporting forms for ANC, postnatal care and labor and delivery. Training and implementation happened in phases and hence caused overreporting for regions like Dar-es-salaam from 2020.

Figure 4:9. Regional trends in coverage of maternal and newborn health indicators on DPT1 derived denominator (2018-2022)



4.2.4 Immunization coverage by different sources

Different data sources were assessed for immunization coverage. The results from UN estimates and HMIS showed that the coverage of DPT3 from 2018 to 2021 was above 80% (Table 4.7). Similarly, measles vaccination coverage for UN estimates were below 80% in 2021, while for HMIS the coverage was 90% (Table 4.7). BCG coverage is above 100% from 2018-2022 while for UN estimates the coverage was decreasing progressively.

Table 4.7. Child health indicators- immunization

	2015	2016	2017	2018	2019	2020	2021	2022
Immunization: three doses of DTP / pentavalent vaccine coverage								
Surveys	97							
HMIS				91	94	93	93	94
UN estimates	96	92	90	89	89	86	81	
Measles vaccination (MCV1) coverage								
Surveys								
HMIS				93	92	92	90	96
UN estimates	95	83	90	88	88	84	76	
BCG vaccination coverage								
Surveys	96							
HMIS				119	113	114	113	117
UN estimates	97.0	95.0	93.0	91.0	91.0	87.0	75.0	

Figure 4:11. DPT/Pentavalent coverage

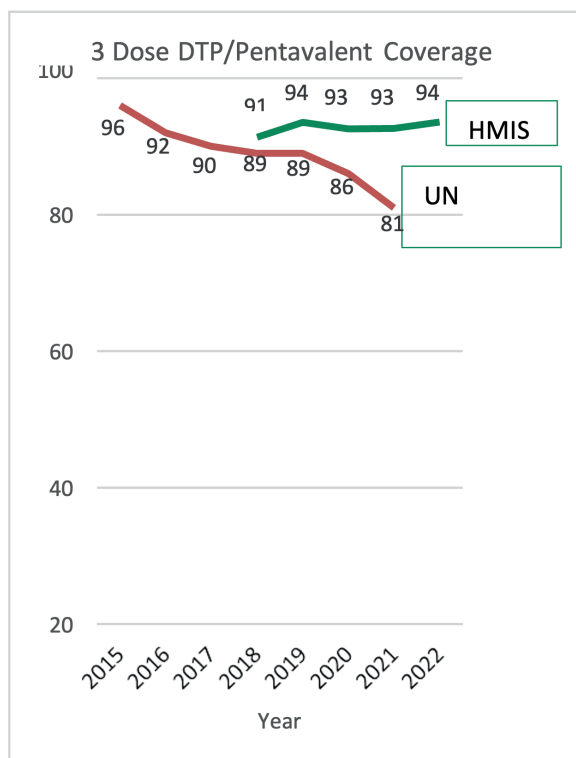
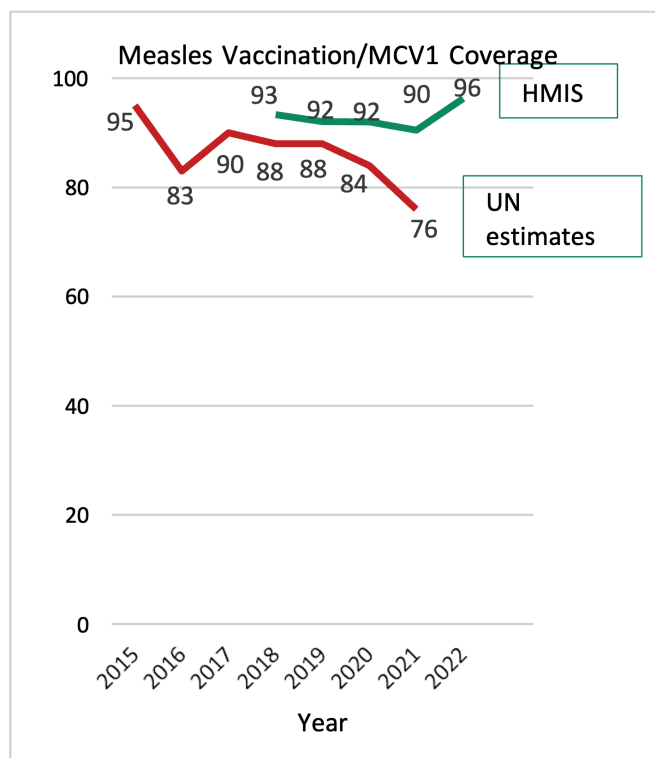


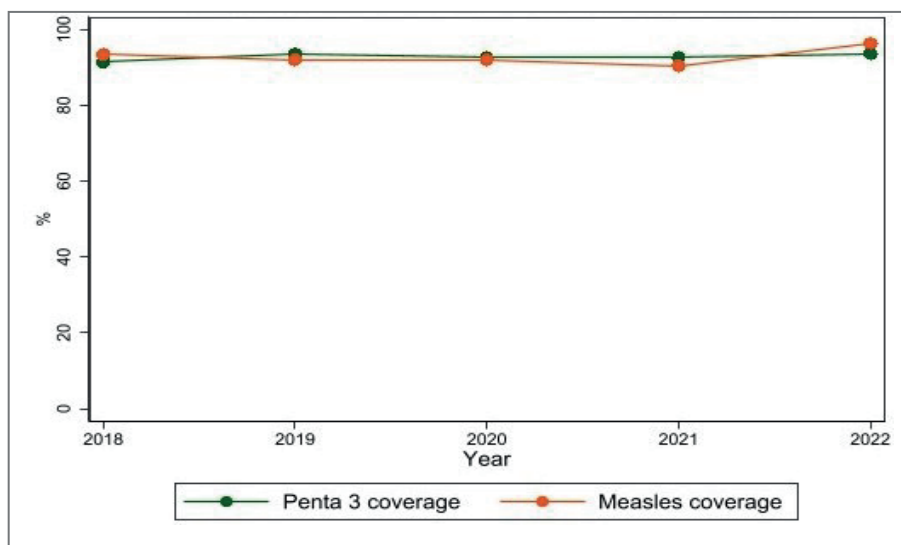
Figure 4:10. Measles vacc./MCV1 coverage



4.2.5 Child immunization coverage at national level

Overall, coverage of child vaccination indicators (Pentavalent 3rd dose, Measles 1) at a national level was universal from 2018 to 2022 with levels above 90% (Figure 4:11). A similar phenomenon appears to occur for BCG although coverage rates for BCG are over 100% in the DHIS2. There are more BCG vaccinations than for instance penta1 vaccination, while the surveys indicate that coverage of both vaccines should be the same and between 95% and 100%. This can be explained by revaccinations which are given frequently and included in the reported numbers of BCG vaccinations (in the absence of local reaction to the subcutaneous BCG vaccine).

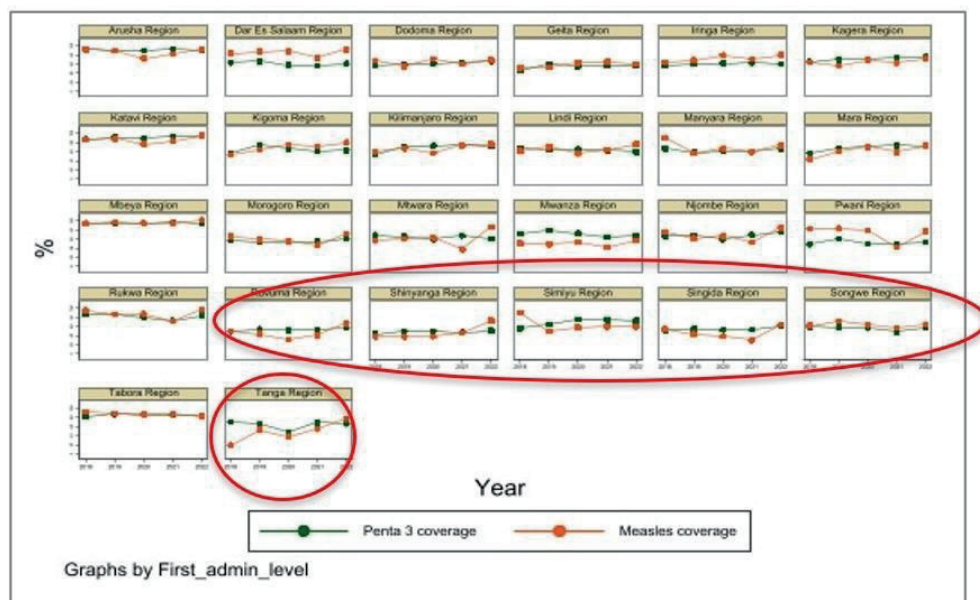
Figure 4:12. National trends in coverage of child vaccination indicators on DPT1 derived denominator (2018-2022)



4.2.6 Child immunization coverage by regions

The coverage of child vaccination indicators at a regional level shows some major inequalities, with most regions having coverage of below 60% despite the national coverage trends showing universal coverage. Regions with coverage below 60% in at least one of the child vaccination indicators over time are: Ruvuma, Simiyu, Singida, Songwe and Tanga (Figure 4:13).

Figure 4:13. Regional trends in coverage of child vaccination indicators on DPT1 derived denominator (2018-2022)



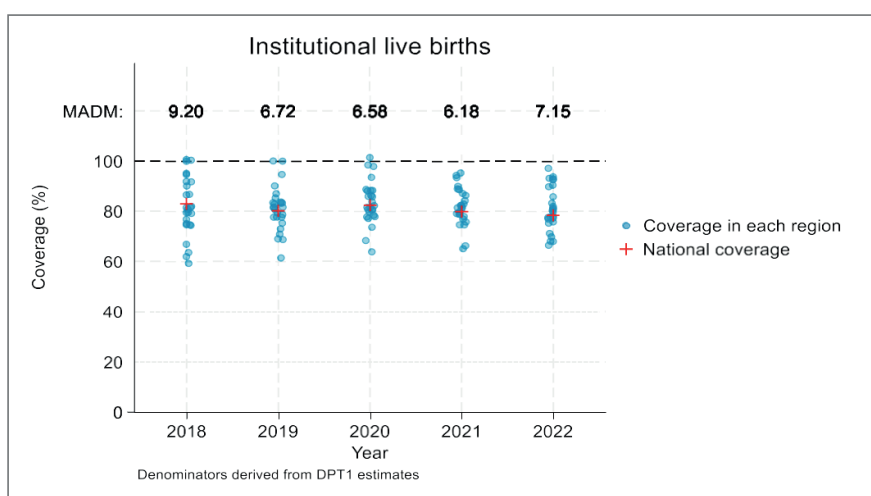
4.3 Subnational variation in service coverage

This section presents variation in coverage of maternal indicators (Institutional livebirths, ANC4, IPT2, PNC48h) and child vaccination indicators (DPT3, Measles) across regions over time. We presented the findings in figures, but further details with individual values are presented in Annex 1.

4.3.1 Coverage inequality for institutional livebirths

There is a high change (decrease) in institutional live births mainly for Kigoma, Kilimanjaro, Mwanza, Tabora and Tanga between 2018-2022. Figure 4:14 shows institutional live births in each region and the national coverage. The results show there is a small gap in inequality between regions over time. The national coverage is between 79% to 82% between 2018-2022. National target was 76% for the year 2018.

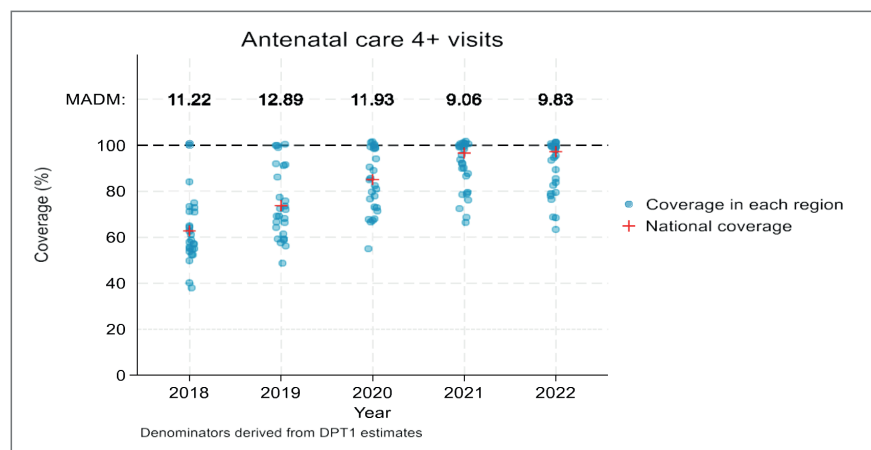
Figure 4:14. Coverage of institutional livebirths



4.3.2 Coverage inequality for ANC4+

High variability observed for the ANC4+ coverage between regions, that decreases with time (MADM 11.2 in 2018 to 9.8 in 2022) (Figure 4:15). In 2022, coverage ranges from as high as 100% in Kilimanjaro and Dar es salaam to 68% in Geita and Kagera and 63% in Tabora, while the national coverage was 97% possible reason could be change of ANC policy guideline from 4 visits to 8 visits.

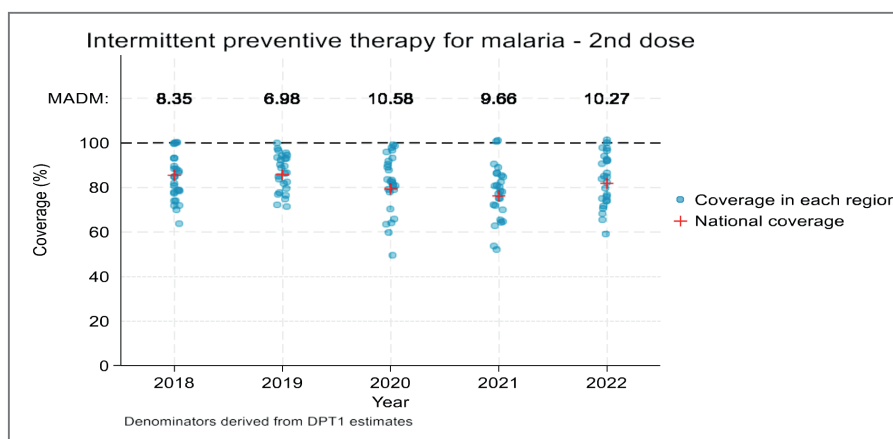
Figure 4:15. Coverage of Antenatal care 4+ visits



4.3.3 Coverage inequality for IPT2

Coverage of IPT2 is increasing over time however, variability and inequality is also increasing over time (Figure 4:16). The reason might be the issue of variability in commodity availability. Dar-es-salaam region tends to have a high coverage of 100% in 2021 and 2022.

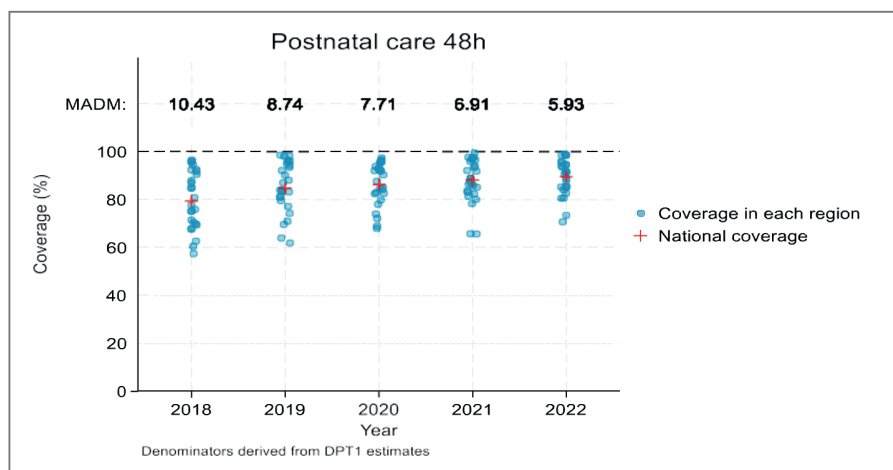
Figure 4:16. Coverage of Intermittent preventive therapy for malaria- 2nd dose



4.3.4 Coverage inequality for postnatal care in 48 hours

Figure 4:17 shows the coverage of the postnatal care within 48 hours, the results reveal that the coverage is increasing over time however, variability and inequality is also increasing over time. Geita, Iringa, Kagera, Mara, Morogoro, Rukwa and Singida tend to have coverage of above 90% for the year 2018-2022.

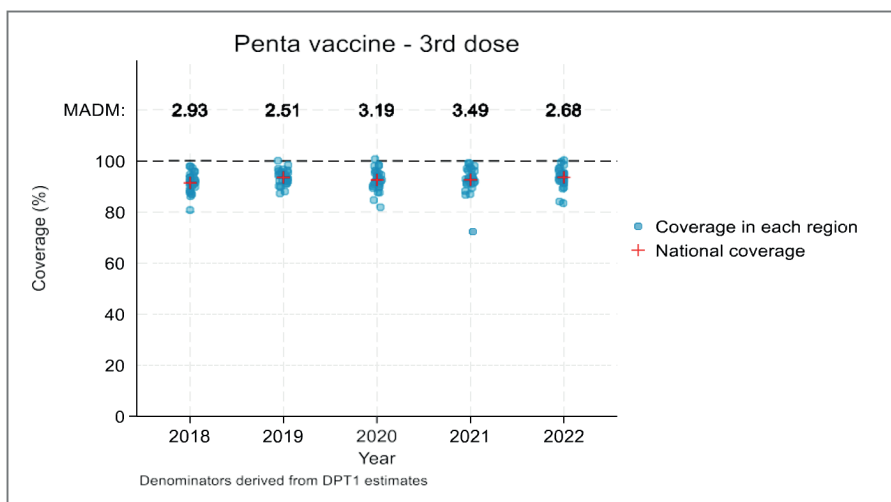
Figure 4:17. Coverage of Postnatal care within 48 hours



4.3.5 Coverage inequality for pentavalent 3rd dose

There is a decrease in coverage of DPT3/ pentavalent 3rd dose among infants for Arusha, Lindi, Mtwara and Rukwa. Figure 4:18 shows Penta vaccine-3rd dose in each region and the national coverage. The results reveal that there is a small range of inequality between regions over time. The national coverage of Penta vaccine-3rd dose is between 90% to 91% between 2018 and 2022.

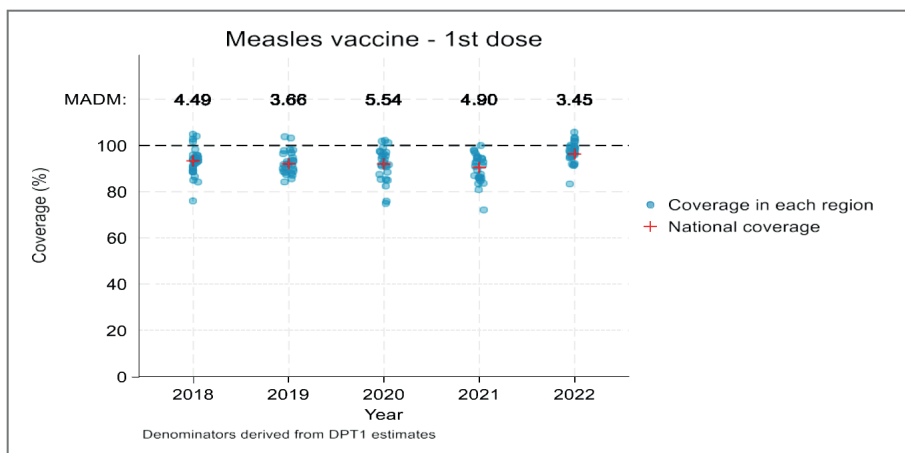
Figure 4:18. Coverage of Penta Vaccine - 3rd dose



4.3.6 Coverage inequality for measles

Figure 4:19 shows coverage of Measles vaccine-1st dose in each region and the national coverage. The result shows that there is an increase over time however, variability and inequality is also increasing over time. The coverage in Dar es Salaam region tends to be above 100% except for the year 2021 (98.05%) the possible reason could be campaigns and different programs in 2021.

Figure 4:19. Coverage of Measles vaccine – 1st dose



4.4 Maternal and perinatal mortality

The assessment of the data quality for maternal mortality and stillbirth rates in the health facility data in Tanzania was conducted based on five metrics shown below in Table 4.8.

Table 4.8: Data quality metrics for maternal mortality and stillbirth rates in facility data

Metric	Subject	Quality statistic	Acceptable	Questionable	Problematic
1	Completeness of monthly health facility reporting	Percent of monthly facility reports received out total expected numbers in a year	>90%	75-90%	< 75%
2	Consistency overtime of annual numbers for deliveries (2a), maternal deaths (2b) and stillbirths (2c) in health facilities	Relative difference between annual number and median for the 5-year period*100	< 25%	25-49%	>=50%
3	Consistency of institutional mortality results with global estimates	Ratio of number of stillbirths to maternal deaths as reported by health facilities	Ration >=4 and < 10	Ratio 10-14 or 3	Ration >=15 or <3
4	Consistency of institutional mortality results with global estimates	Ratio of community to institutional mortality, based on UN population estimate and institutional rate	0-3	4-5	7 or higher
5	Intrapartum stillbirths as percent of total stillbirths	Percent of total stillbirths that were reported as fresh intrapartum	35-60%	25-34% or 60-69%	>70% or <25%
6	External comparison with studies that included mortality estimates in the same countries	Difference between facility institutional mortality and to studies in selected (research) facilities	Limited	Moderate	High

The overall data quality in Tanzania was good. Completeness reporting and consistency of annual numbers for livebirths, stillbirths & maternal deaths were within an acceptable range. However, the ratio of estimated community to Institutional maternal mortality ratios and stillbirths was questionable suggesting underreporting of maternal deaths & stillbirths in Tanzania (Table 4.9).

Table 4.9. Systematic assessment of health facility data quality for maternal mortality and stillbirth rates

Input data DHIS2		2018	2019	2020	2021	2022	
	Livebirths (N)	1,758,396	1,867,012	1,934,289	1,943,917	1,974,987	
	Stillbirths, total (N)	20,241	19,546	18,795	17,833	16,287	
	Stillbirths, fresh (N)	8,635	8,201	7,915	7,265	6,635	
	Stillbirths, macerated (N)	11,295	11,064	10,614	10,231	9,313	
	Maternal deaths (N)	2,028	2,218	2,212	2,265	2,176	
	Completeness reporting delivery forms (%)	96	97	97	97	99	
Other data inputs: UN estimates of population mortality and livebirth coverage		2018	2019	2020	2021	2022	
	Population stillbirth rate, UN estimate (per 1000 births)	19.2	18.9	18.6	18.3		
	Population MMR estimate, UN (per 100,000 live births)	266.8	261.9	238.3			
	Coverage of live births by health facilities (from survey or DHIS2 estimate) (%)	71	74	74	74	75	
Institutional mortality		2018	2019	2020	2021	2022	Median
	Stillbirths per 1,000 births (institutional)	11.4	10.4	9.6	9.1		
	Maternal mortality per 100,000 live births (MMR) (institutional)	115.3	118.8	114.4	116.5		
Data quality metrics		2018	2019	2020	2021	2022	Median
1	Completeness reporting delivery forms (%)	96	97	97	97		97
2	Consistency: annual numbers (relative difference to median, %)						
2a	Livebirths	9.1	3.5	0.0	0.5		2.0
2b	Stillbirths	7.7	4.0	0.0	5.1		4.6
2c	Maternal deaths	9.1	3.6	0.0	8.2		5.9
3	Ratio: Stillbirths to maternal deaths (reported)	10.0	8.8	8.5	7.9	7.5	8.5
4a	Ratio: Community (estimated) to institutional stillbirth rate	3.3	4.1	4.5	4.8		
4b	Ratio: Community (estimated) to institutional MMR	5.5	5.4	5.1			
5	Percentage of stillbirths that are fresh/intrapartum	42.7	42.0	42.1	40.7	40.7	42.0

The results indicate that reporting of stillbirths is lower than expected on the basis of UN estimates for the whole population and that maternal deaths are also underreported and most likely more underreported than stillbirths.

4.5 Curative health service utilization: children and all ages (2018-2022)

Table 4.10 below shows the outpatient and inpatient utilization for children and all ages from health facility data in Tanzania from 2018 to 2022. Completeness reporting for both outpatient and inpatient services is greater than 90%. For outpatient services, mean OPD visits per a child under-five per year is higher compared to mean OPD visits for those aged 5+ years (3.4 vs 0.8 in 2022). Mean OPD visits among children under-five was observed to increase by 88% during the five-year period from 1.8 visits per child per year in 2018 to 3.4 visits per child per year in 2022. The proportion of OPD visits that are under five have declined by 36% from 11% in 2018 to 7% in 2022. This might be contributed by child health interventions. Mean admissions per 100 children under-five per year, are almost twice compared to the mean admissions per 100 persons aged 5 years and above (4.5 vs 2.4 in 2022). More than a quarter of admissions in health facilities in Tanzania mainland are among children under-five (ranging from 28% in 2018 to 27% in 2022).

Table 4.10: Outpatient and inpatient service utilization for children and all ages, 2018-2022

	2018	2019	2020	2021	2022	Relative change 2018-2022
Total population, all ages (DHIS2 proj.)	53,755	55,401	56,945	58,858	60,651	
Total population under-5 (DHIS2 proj.)	9,139,198	9,359,154	9,554,996	9,810,624	10,044,378	
Total population 5+ years	44,616,298	46,041,381	47,390,172	49,047,728	50,606,638	
Outpatient services						
Completeness reporting OPD (%)	95	95	95	95	98	
N of OPD visits per year among under-5	5,022,991	4,288,183	3,449,035	3,147,444	2,942,214	-2,080,777
N of OPD visits per year among 5+ years	39,803,697	42,953,109	40,002,993	38,738,220	38,566,486	
N of OPD visits per year, all ages	44,826,688	47,241,292	43,452,028	41,885,664	41,508,700	
Indicators - OPD						
Mean OPD visits per child under-5 per year	1.8	2.2	2.8	3.1	3.4	88%
Mean OPD visits per person 5+ years	0.9	0.9	0.8	0.8	0.8	
Mean OPD visits per person per year, all ages	1.2	1.2	1.3	1.4	1.5	
Percent of OPD visits that are under-5	11.0	9.0	8.0	8.0	7.0	-36%
Inpatient services						
Completeness reporting IPD (%)	92	94	93	95	97	5%
N of admissions per year among under-5	486,010	528,518	492,907	446,273	448,085	-8%
N of admission per year among 5+ years	1,248,250	1,303,920	1,270,320	1,229,945	1,190,322	
N of admissions per year, all ages	1,734,260	1,832,438	1,763,227	1,676,218	1,638,407	
Indicators - admissions						
Mean admissions per 100 children under-5, per year	5.3	5.6	5.2	4.5	4.5	
Mean admissions per 100 persons 5+ years	2.8	2.8	2.7	2.5	2.4	
Mean admissions per 100 persons, all ages	3.2	3.3	3.1	2.8	2.7	-16%
Percent of IPD admissions that are under-5	28.0	29.0	28.0	27.0	27.0	-4%

Source: DHIS2

4.6 Subnational progress and health system performance

In order to assess the health sector performance in Tanzania, we accounted for regional level system in Tanzania. This involved a comparison between the coverage of institutional livebirths as a health system output and the health facility density in the regions (health facility/population ratio) as a health system input. The HSSP V has specified some targets by 2026 for these output and inputs: Institutional livebirth coverage target at 75%; and health facility/population ratio target at 2.5 facilities/10,000 population.

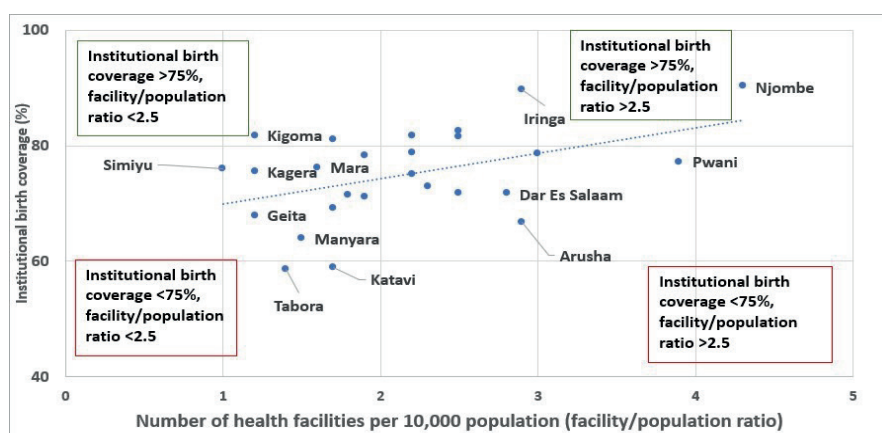
Also, 9 out of 26 regions are lagging behind with low institutional livebirth coverage below the target and the health facility to population ratio below the target, these are: Tabora, Katavi, Geita, Manyara, Morogoro, Rukwa, Shinyanga, Singida and Tanga (Table 4.11 & Figure 4:20)

Table 4.11. Health system input indicators and coverage using institutional livebirths as a denominator

National / Region	Population	Facilities per 10,000	Ratio facility to population	Institutional livebirth coverage 2022
National	60,651,016	12359	2.0	73.0
Arusha	2,259,468	645	2.9	66.8
Dar Es Salaam	5,779,700	1614	2.8	71.6
Dodoma	2,865,590	622	2.2	78.7
Geita	2,667,532	333	1.2	67.9
Iringa	1,237,768	365	2.9	89.7
Kagera	3,515,066	416	1.2	75.4
Katavi	884,910	151	1.7	58.9
Kigoma	3,064,084	360	1.2	81.8
Kilimanjaro	2,093,362	523	2.5	81.6
Lindi	1,106,380	330	3.0	78.6
Manyara	1,994,064	307	1.5	63.9
Mara	2,650,262	430	1.6	76.3
Mbeya	2,411,262	534	2.2	75.0
Morogoro	2,906,504	723	2.5	71.7
Mtwara	1,605,094	348	2.2	81.8
Mwanza	4,197,730	701	1.7	81.0
Njombe	910,972	390	4.3	90.2
Pwani	1,413,112	552	3.9	77.3
Rukwa	1,380,822	264	1.9	71.1
Ruvuma	1,777,488	447	2.5	82.5
Shinyanga	2,148,400	371	1.7	69.2
Simiyu	2,596,636	265	1.0	76.0
Singida	1,822,348	334	1.8	71.5
Songwe	1,399,284	261	1.9	78.2
Tabora	3,330,058	474	1.4	58.6
Tanga	2,633,118	599	2.3	72.8

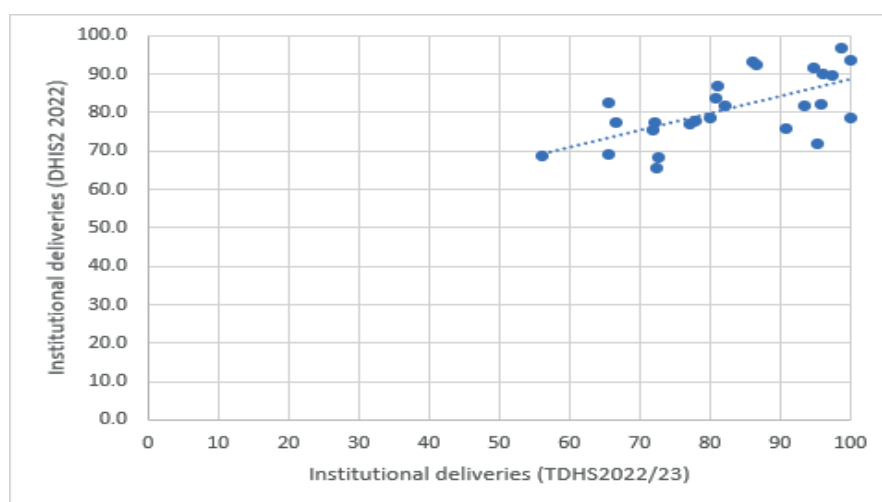
Overall, at a national level, the coverage of institutional livebirths in 2022 was below the target (73%) and the facility to population ratio was also below the target (2) (Table 4.11). Data shows that 5/26 regions have achieved the target of institutional livebirth coverage >75% and facility/population ratio >2.5: Iringa, Lindi, Njombe, Pwani and Ruvuma.

Figure 4:20. Comparison of institutional birth coverage to facility population ratio by regions in Tanzania mainland



Estimated population coverage of institutional deliveries shows good consistency with the levels and trends observed in national surveys, where the latest preliminary findings from DHS2022 suggest that 81% of births take place in facilities in 2020 and 2021. Comparing the regional institutional deliveries for 2022 with the DHS 2022 and 2022 data from DHIS2, indicate reasonable correlation (Figure 4:20). The analysis provides important up-to-date information on the recent preferences of the place of childbirth care. The Tanzanian policy of upgrading health centres to every ward and provision of dispensary at village level is likely to have led to the increase in utilization during 2016-2022.

Figure 4:21. Regional institutional deliveries (%) comparing DHIS2(2022) and DHS 2022/23 data



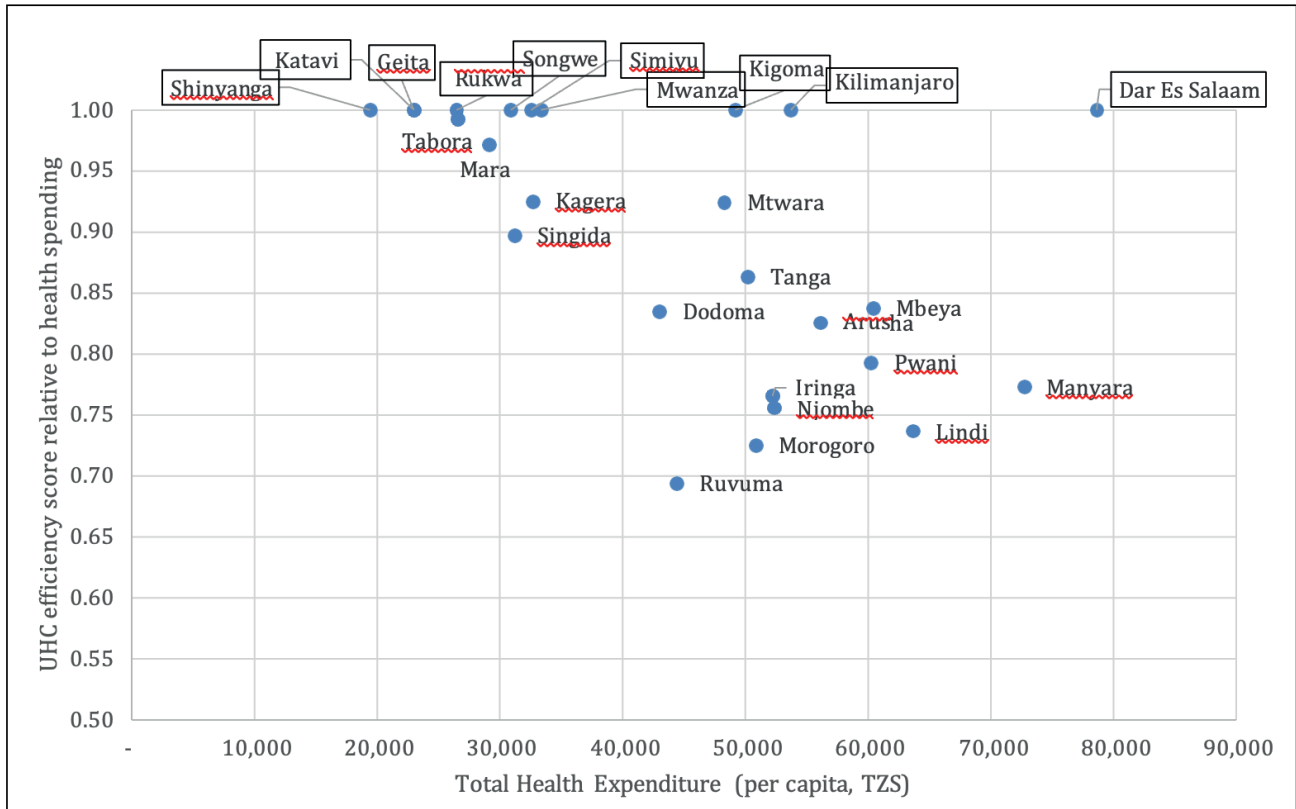
Health financing is a key building block of health system. In attempt to assess regional performance, we estimated regional efficiency scores of health financing relative to universal health coverage (UHC) performance for financial year 2017/18. This analysis used four financing inputs (regional level government and health basket funding, health insurance contributions and out-of-pocket payments) and two UHC outputs (regional level service coverage and financial protection indices)⁴.

Data shows that the average efficiency score of four financing inputs relative to UHC performance was 90%. This reflects that 90% of the funding from four financing inputs were optimally used on average to achieve UHC outputs. Approximately 10% of the resources were either wasted, underutilised or misallocated. Regions could have improved UHC outputs by 10% using similar levels of funding.

4 The service coverage outputs included regional level coverage of three maternal health services (antenatal care 4+ visits, skilled delivery assistance, and postnatal care in 48 hours after childbirth). The financial protection output was measured as the absence of catastrophic and impoverishing health expenditure.

Ten regions (39%) out of 26 regions were efficient or best performing with 100% efficiency score (Figure 4:21), these included regions with higher overall per capita total spending like Dar es Salaam (TZS 87,272), and regions with lower per capita total spending like Shinyanga (TZS 21,555). Three regions with the lowest efficiency scores include Lindi (74%), Morogoro (72%) and Ruvuma (69%). The level of inputs, outputs and efficiency scores of all 26 regions are presented in Annex 2.

Figure 4:22. UHC performance relative to per capita total health spending in 26 regions (2017/18)



5 Conclusion and recommendations

5.1 Conclusion

- DHIS 2 data quality is reliable as its quality was above 85% and its rate of completeness of reporting across the years for analysed indicators is 90%.
- Modern contraceptive use stagnated from 2015 to 2022.
- Institutional livebirths have shown a small gap in inequalities between regions over time between 2018-2022. The decrease observed for Kigoma, Kilimanjaro, Mwanza, Tabora and Tanga.
- There are under reporting of maternal deaths and stillbirths in health facility data.

5.2 Recommendations

- National projection of denominators using DHIS 2 indicators for coverage of health intervention needs to be re-looked into.
 - Strengthen CRVS to be able to have a sound denominators to determine coverage.
 - For regions which are not performing on some indicators further studies need to be carried out.
-

Annex 1. Subnational coverage of institutional livebirths

Regions	Year				
	2018	2019	2020	2021	2022
Arusha	81.0	78.0	80.8	83.1	82.6
Dar Es Salaam	76.0	75.0	80.3	75.3	78.7
Dodoma	75.2	77.7	79.5	81.4	75.8
Geita	81.1	81.0	83.0	78.6	77.3
Iringa	86.7	90.0	89.8	94.4	93.6
Kagera	79.6	80.8	78.1	75.3	77.0
Katavi	62.3	69.1	72.0	75.0	77.5
Kigoma	91.6	100.0	97.8	88.2	81.7
Kilimanjaro	100.0	83.1	81.7	82.6	72.0
Lindi	78.2	83.6	84.9	89.4	90.3
Manyara	58.6	60.2	63.3	66.6	68.8
Mara	64.3	71.8	78.0	72.9	75.3
Mbeya	80.6	78.1	80.3	80.9	83.8
Morogoro	81.6	81.0	85.2	80.8	81.8
Mtwara	79.7	82.0	87.8	89.6	89.8
Mwanza	92.0	86.6	81.4	83.4	78.7
Njombe	95.7	96.1	97.3	94.5	96.6
Pwani	100.0	100.0	100.0	93.1	92.6
Rukwa	82.3	86.5	93.8	86.7	91.8
Ruvuma	86.7	79.0	89.7	84.2	82.3
Shinyanga	91.3	85.1	87.9	86.5	86.9
Simiyu	67.7	70.0	68.0	63.6	65.7
Singida	73.5	77.1	75.5	79.9	77.9
Songwe	75.3	83.5	83.2	85.8	93.1
Tabora	93.7	82.0	87.7	78.7	68.2
Tanga	100.0	68.9	78.0	78.2	69.2
Mean absolute difference to the mean (MADM)	9.2	6.7	6.6	6.2	7.2
Weighted MADM	8.6	6.1	5.9	5.4	5.7
Mean relative difference to the mean (MRDM)	11.1	8.4	8.0	7.7	9.1
Weighted MRDM	10.3	7.6	7.1	6.8	7.2
% of districts above 80%	57.7	57.7	69.2	61.5	50.0
% of districts above 90%	30.8	11.5	15.4	11.5	23.1

Annex 2. Subnational coverage of ANC4

Regions	Year				
	2018	2019	2020	2021	2022
Arusha	61.3	75.1	89.7	100.0	100.0
Dar Es Salaam	85.3	100.0	100.0	100.0	100.0
Dodoma	52.8	70.6	79.4	91.4	95.5
Geita	56.6	59.5	68.8	78.2	68.2
Iringa	55.7	85.9	100.0	100.0	100.0
Kagera	58.6	68.2	71.5	100.0	67.9
Katavi	50.0	57.6	66.2	79.2	79.3
Kigoma	62.3	91.8	98.6	95.2	99.1
Kilimanjaro	100.0	100.0	100.0	100.0	100.0
Lindi	74.6	100.0	100.0	100.0	100.0
Manyara	51.7	57.9	72.5	87.9	93.6
Mara	38.7	60.1	85.2	90.2	93.4
Mbeya	72.1	77.7	85.2	100.0	100.0
Morogoro	64.9	71.3	81.7	93.0	100.0
Mtwara	73.2	89.8	100.0	100.0	100.0
Mwanza	55.1	68.6	72.0	87.0	82.6
Njombe	54.7	67.7	93.4	100.0	100.0
Pwani	74.4	91.4	100.0	98.7	100.0
Rukwa	71.1	100.0	100.0	100.0	100.0
Ruvuma	54.5	69.4	90.4	91.9	86.5
Shinyanga	56.2	60.1	66.8	76.2	80.4
Simiyu	41.0	47.7	54.6	64.8	75.6
Singida	56.1	66.0	64.9	73.2	78.3
Songwe	58.0	73.6	77.2	80.9	89.7
Tabora	62.7	64.6	76.1	69.2	63.4
Tanga	100.0	56.3	80.5	91.4	83.5
Mean absolute difference to the mean (MADM)	11.2	12.9	11.9	9.1	9.8
Weighted MADM	10.2	12.6	12.0	10.0	12.0
Mean relative difference to the mean (MRDM)	17.9	17.5	14.0	9.4	10.1
Weighted MRDM	16.2	17.1	14.1	10.4	12.4
% of districts above 80%	11.5	30.8	57.7	76.9	76.9
% of districts above 90%	7.7	23.1	38.5	65.4	57.7

Annex 3. Subnational coverage of IPT2

Regions	Year				
	2018	2019	2020	2021	2022
Arusha	86.4	91.5	91.3	71.1	92.4
Dar Es Salaam	93.9	96.8	99.2	100.0	100.0
Dodoma	90.4	89.7	80.3	79.4	75.4
Geita	83.1	80.8	48.8	51.3	64.6
Iringa	74.1	86.9	88.2	82.8	86.0
Kagera	72.2	76.0	65.2	63.3	75.1
Katavi	75.2	94.6	96.2	100.0	93.6
Kigoma	78.3	96.6	91.4	76.5	85.3
Kilimanjaro	100.0	92.5	83.3	80.7	93.0
Lindi	78.6	88.3	89.8	87.8	98.1
Manyara	84.3	81.7	78.3	80.0	75.1
Mara	63.7	72.0	65.3	64.7	74.3
Mbeya	99.5	94.2	77.6	85.7	96.8
Morogoro	93.0	93.8	81.7	89.6	95.0
Mtwara	80.9	84.7	82.6	84.2	78.5
Mwanza	75.7	77.7	68.7	72.3	68.1
Njombe	71.8	79.6	84.0	70.2	84.5
Pwani	86.0	96.8	100.0	79.3	84.1
Rukwa	100.0	100.0	97.7	84.7	100.0
Ruvuma	88.8	83.9	94.9	91.3	91.1
Shinyanga	79.1	78.7	63.0	63.9	83.1
Simiyu	69.1	71.3	58.0	53.2	72.4
Singida	78.8	85.9	78.2	74.6	72.8
Songwe	85.9	92.6	80.9	76.7	97.6
Tabora	87.5	84.8	83.7	64.9	59.4
Tanga	100.0	75.9	86.5	79.0	70.9
Mean absolute difference to the mean (MADM)	8.4	7.0	10.6	9.7	10.3
Weighted MADM	8.3	7.4	11.4	10.7	11.2
Mean relative difference to the mean (MRDM)	9.8	8.2	13.4	12.7	12.6
Weighted MRDM	9.7	8.7	14.4	14.0	13.7
% of districts above 80%	57.7	73.1	65.4	38.5	57.7
% of districts above 90%	26.9	38.5	26.9	11.5	38.5

Annex 4. Subnational coverage of postnatal care within 48hrs

Regions	Year				
	2018	2019	2020	2021	2022
Arusha	67.7	75.8	81.4	81.4	90.4
Dar Es Salaam	69.8	78.6	70.9	85.6	85.6
Dodoma	71.4	69.7	73.1	87.0	87.4
Geita	95.0	95.0	95.7	94.6	93.9
Iringa	91.8	97.3	95.2	97.4	93.8
Kagera	96.7	96.2	96.5	97.1	96.3
Katavi	76.2	74.2	79.1	84.5	86.1
Kigoma	69.0	84.4	90.2	86.9	89.6
Kilimanjaro	84.7	84.5	84.6	80.6	97.8
Lindi	86.3	93.5	91.2	88.7	86.3
Manyara	84.8	86.5	85.7	92.1	89.5
Mara	90.7	99.0	98.7	98.9	99.4
Mbeya	60.3	64.1	67.1	65.6	73.6
Morogoro	94.6	94.2	94.4	96.9	95.6
Mtwara	92.0	93.5	87.1	81.9	83.7
Mwanza	69.7	80.7	82.3	83.1	84.3
Njombe	75.9	81.1	83.4	80.1	79.9
Pwani	61.7	62.0	67.1	67.2	71.5
Rukwa	97.5	97.8	95.4	96.9	97.7
Ruvuma	76.3	92.4	89.3	99.9	95.8
Shinyanga	80.5	83.8	82.7	85.0	83.5
Simiyu	69.1	83.7	91.6	92.1	97.3
Singida	91.6	95.2	96.7	95.1	94.7
Songwe	77.9	90.2	92.1	85.5	92.1
Tabora	88.2	89.3	93.9	91.9	91.9
Tanga	58.0	69.9	77.7	83.8	81.6
Mean absolute difference to the mean (MADM)	10.4	8.7	7.7	6.9	5.9
Weighted MADM	10.8	8.4	8.2	6.5	5.6
Mean relative difference to the mean (MRDM)	13.2	10.3	9.0	7.8	6.6
Weighted MRDM	13.6	9.9	9.6	7.4	6.3
% of districts above 80%	50.0	73.1	76.9	92.3	88.5
% of districts above 90%	30.8	42.3	46.2	42.3	50.0

Annex 5. Subnational coverage of DPT3

Regions	Year				
	2018	2019	2020	2021	2022
Arusha	91.8	89.6	90.1	92.7	89.9
Dar Es Salaam	94.0	95.1	92.2	91.5	93.3
Dodoma	91.4	93.1	93.4	93.7	95.4
Geita	87.3	92.4	90.9	91.5	92.1
Iringa	91.9	93.2	93.6	94.1	92.9
Kagera	94.8	96.7	97.1	97.9	99.1
Katavi	87.2	91.9	89.0	93.3	93.9
Kigoma	90.9	98.5	95.3	92.9	93.8
Kilimanjaro	90.6	96.7	97.7	98.3	97.2
Lindi	95.5	94.8	94.7	93.9	92.4
Manyara	95.3	92.3	93.3	93.1	95.2
Mara	91.6	95.9	97.5	98.1	97.7
Mbeya	94.6	94.5	95.0	96.3	95.6
Morogoro	91.8	91.0	90.8	90.9	93.2
Mtwara	96.2	95.1	92.7	95.7	93.3
Mwanza	97.5	100.2	97.7	94.5	96.1
Njombe	95.3	95.4	92.6	96.3	99.0
Pwani	88.6	93.2	89.0	88.8	90.2
Rukwa	87.3	87.1	81.1	73.0	84.4
Ruvuma	88.6	90.6	89.7	90.3	91.7
Shinyanga	86.7	89.2	89.0	87.9	89.5
Simiyu	91.2	94.7	99.0	98.3	98.0
Singida	89.9	90.9	90.1	90.2	93.5
Songwe	92.7	92.3	91.5	88.3	92.4
Tabora	81.0	87.5	84.8	86.2	84.7
Tanga	96.5	94.8	88.4	96.1	95.1
Mean absolute difference to the mean (MADM)	2.9	2.5	3.2	3.5	2.7
Weighted MADM	3.1	2.8	3.5	3.4	2.8
Mean relative difference to the mean (MRDM)	3.2	2.7	3.4	3.8	2.9
Weighted MRDM	3.4	3.0	3.7	3.6	3.0
% of districts above 80%	100.0	100.0	100.0	96.2	100.0
% of districts above 90%	69.2	84.6	73.1	80.8	84.6

Annex 6. Subnational coverage of Measles 1

Regions	Year				
	2018	2019	2020	2021	2022
Arusha	92.2	89.8	73.1	82.4	92.5
Dar Es Salaam	102.0	103.5	103.6	98.1	105.0
Dodoma	95.9	91.1	97.4	93.0	96.3
Geita	89.6	90.1	93.7	94.9	93.0
Iringa	94.2	96.2	100.3	97.1	100.6
Kagera	94.2	91.4	96.3	94.0	97.6
Katavi	86.1	88.4	76.8	83.6	95.1
Kigoma	90.0	94.3	98.8	97.2	100.4
Kilimanjaro	92.8	95.4	91.8	98.2	99.3
Lindi	93.6	96.8	91.4	94.4	99.4
Manyara	104.5	91.7	95.2	92.7	98.0
Mara	86.5	92.9	96.6	92.5	97.8
Mbeya	94.7	97.2	94.8	95.1	102.2
Morogoro	95.2	92.4	91.2	87.8	97.5
Mtwara	91.5	93.3	94.1	84.3	103.0
Mwanza	89.4	88.5	90.2	86.0	91.8
Njombe	99.0	93.5	95.3	90.2	102.4
Pwani	101.6	101.9	100.1	86.2	99.4
Rukwa	95.1	86.8	87.7	71.5	97.0
Ruvuma	89.0	86.8	81.8	85.5	95.5
Shinyanga	84.3	84.3	84.5	87.7	97.9
Simiyu	104.5	89.0	92.3	92.7	92.8
Singida	90.7	86.5	84.7	81.5	94.6
Songwe	93.8	97.3	94.3	91.7	94.8
Tabora	92.4	89.2	87.1	87.4	82.7
Tanga	77.3	90.2	84.4	90.8	99.3
Mean absolute difference to the mean (MADM)	4.5	3.7	5.5	4.9	3.5
Weighted MADM	4.4	3.7	5.4	4.7	3.9
Mean relative difference to the mean (MRDM)	4.8	4.0	6.0	5.4	3.6
Weighted MRDM	4.8	4.0	5.9	5.2	4.1
% of districts above 80%	96.2	100.0	92.3	96.2	100.0
% of districts above 90%	73.1	65.4	69.2	57.7	96.2

Annex 7. Level of inputs, outputs and efficiency scores (2017/18)

REGION	Financing inputs (per capita TZS)				UHC outputs		Efficiency scores (by output type)		
	Government Health Expenditure	Healthm Basket Fund	Out-of-pocket payments	Insurance contribu-tions	Financial protection index	Service coverage index	UHC	Service coverage	Financial protec-tion
Ruvuma	26,826	2,472	14,291	5,671	98	71	0.69	0.68	0.69
Morogoro	29,120	2,308	22,605	2,462	97	71	0.72	0.72	0.72
Lindi	50,133	2,425	3,956	4,191	98	76	0.74	0.74	0.70
Njombe	27,218	2,287	1,252	7,371	98	75	0.76	0.76	0.73
Iringa	35,141	2,159	17,267	3,377	98	72	0.77	0.74	0.77
Manyara	25,531	2,175	49,228	3,775	98	49	0.77	0.53	0.77
Pwani	44,029	2,275	18,261	2,315	99	79	0.79	0.79	0.74
Arusha	38,854	2,014	16,485	4,958	99	59	0.83	0.64	0.83
Dodoma	25,677	2,038	13,658	6,355	99	62	0.83	0.70	0.83
Mbeya	47,884	2,030	12,291	4,834	99	69	0.84	0.79	0.84
Tanga	32,282	1,926	15,810	5,742	99	52	0.86	0.58	0.86
Singida	20,099	2,248	11,037	1,229	99	62	0.90	0.77	0.90
Mtwara	26,109	1,941	23,234	2,314	98	79	0.92	0.92	0.86
Kagera	18,072	2,014	13,918	2,279	98	75	0.92	0.92	0.86
Mara	13,093	1,834	13,997	3,434	99	59	0.97	0.82	0.97
Tabora	10,734	2,194	13,845	2,705	98	65	0.99	0.94	0.94
Kilimanjaro	32,631	1,754	18,402	6,815	98	86	1.00	1.00	0.93
Songwe	15,010	1,935	16,395	957	99	65	1.00	0.90	1.00
Simiyu	9,249	1,783	24,196	889	97	49	1.00	0.82	1.00
Mwanza	22,680	1,681	10,934	1,710	99	74	1.00	1.00	1.00
Dar Es Salaam	29,394	1,437	41,435	15,007	98	73	1.00	1.00	1.00
Katavi	9,493	2,657	11,875	1,512	98	56	1.00	0.91	1.00
Rukwa	11,862	2,220	14,785	525	98	77	1.00	1.00	1.00
Shinyanga	12,072	1,797	6,136	1,550	99	69	1.00	1.00	1.00
Geita	10,859	1,809	10,753	2,089	99	66	1.00	0.99	1.00
Kigoma	11,556	1,971	39,591	1,451	93	73	1.00	1.00	0.86

