

**Mid-Term Review of the
Zambia National Health Sector Plan 2017-2021:
Analytical Report (workstream 1)**

Executive Summary

Ministry of Health,
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Countdown to 2030 for Women's, Children's
and Adolescents' Health and University of Manitoba,
and World Health Organization

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Executive summary

This stand-alone executive summary of the analytical report to inform the midterm review of Zambia NHSP 2017-2021 includes highlights from the program-specific analyses, summarizes the progress towards the targets for the NHSP key indicators, and synthesizes the results on progress towards the NHSP legacy goals.

The analytical report is based on a desk review and further analysis of all data from multiple data sources including those made available by the Ministry of Health, to inform the midterm review of the National Health Sector Plan 2017-2021. Extensive use was made of the Zambia Demographic and Health Surveys in 2013/14 and 2018, other national surveys, as well as data from the national health management information system. The analyses focused on the extent of progress towards the targets for the national health plan, the levels and trends in inequalities by place of residence, province and socioeconomic characteristics.

The analyses show an overall positive picture in the first half of the NHSP, as there has been progress in improving many maternal and child health outcomes, coverage of preventive interventions, and prevalence of communicable diseases, as well as strengthening health sector performance. In particular, life expectancy among men and women has increased. Mortality rates among children under-five and adults (including pregnancy-related deaths) reduced noticeably by 2018, except among newborn infants. Fertility rates declined over time, and coverage of modern family planning methods increased, fastest among people in rural areas and lower socioeconomic groups.

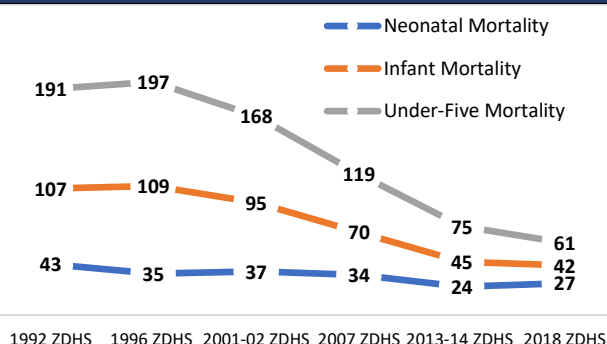
There were notable increases in coverage of 4 or more antenatal care visits, skilled birth attendance, and postnatal care visits within 48 hours after birth, with the greatest improvements occurring among lower socioeconomic groups. Immunization rates among children were high, and there was continued improvement in childhood nutritional status. The rates of adolescent marriage and childbearing did not change, but there was some reduction in HIV prevalence among those aged 15-19. Malaria prevalence and incidence reduced overall, and coverage of preventive interventions improved most in higher prevalence provinces. HIV prevalence remained high, particularly among women, but declined slightly. ART coverage was over 80%, while effective coverage (i.e. viral load suppression among all people living with HIV) was around 70%. TB incidence declined, and there were high treatment success rates, but case detection rates were still below 60%. Prevalence of neglected tropical diseases and risk factors for non-communicable diseases were not found to decline.

There were some improvements in health system governance and domestic health financing, as well as health workforce and infrastructure, and information systems. Compared to other countries in the region, Zambia had an intermediate position on child mortality, child stunting and fertility levels, and was among the top three countries with the lowest maternal mortality ratio and highest coverage of RMNCAH interventions by 2018.

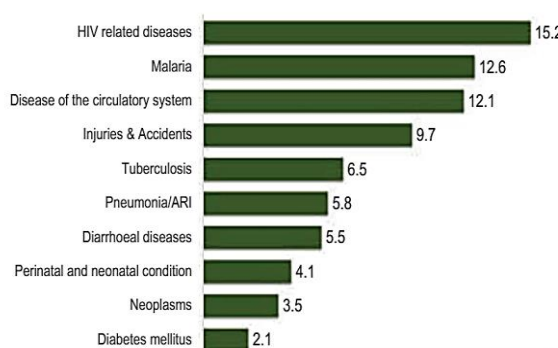
Summary of results in the Mid-Term Review Analytical Report

MORTALITY: child mortality continues to decline but at a slower pace, because neonatal mortality is stagnant at a low level; adult mortality declined strongly

- According to ZDHS 2018, under-five mortality declined from 74 in 2013/14 to 61 per 1,000 live births, but the pace of decline was slowing, and the target was not met.
- Neonatal mortality was higher in the ZDHS 2018 than in ZDHS 2013/14 (from 24 to 27 per 1,000 live births, though not statistically significant) and is now 44% of all under-five deaths.
- The adult mortality rate 15-49 years declined by 43% for women and 29% for men between the last two ZDHS surveys in 2013/14 and 2018.
- The cause of death data from the Ministry of Home Affairs using the ICD codes for 2018, and the verbal autopsy results for 2015/16 (SAVVY), show that major infectious diseases (malaria, TB and especially HIV) were still leading causes of death. NCDs were also prominent in the top 10 causes, especially diseases of the circulatory system.
- Perinatal-related issues of prematurity, low birth weight, birth asphyxia and trauma, and other conditions caused the most child deaths, together with malnutrition and infectious diseases.

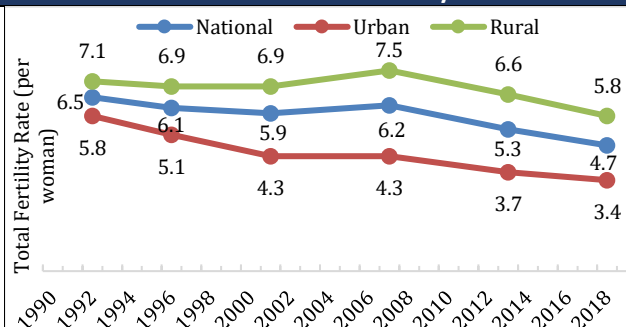


Top 10 causes of death, all ages, both sexes, SAVVY 2015/16

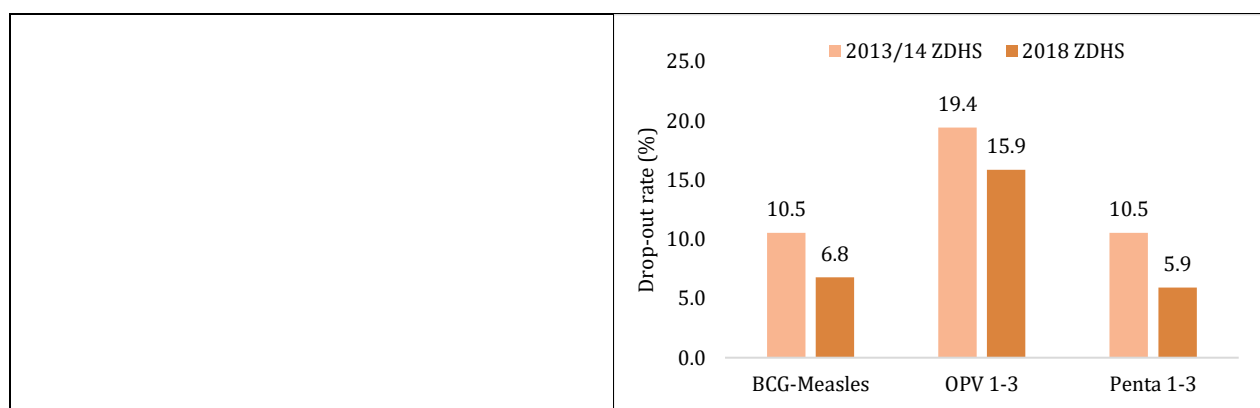


FERTILITY AND FAMILY PLANNING: fertility continued a gradual decline since 2007 to 4.7 children per woman and the demand for modern family planning methods increased to 69% of married women by 2018

- Total fertility declined from 5.3 to 4.7 children per woman between ZDHS 2013/14 and 2018. Rural fertility declined faster (from 6.6 to 5.8 children), but the gap with urban fertility (3.3 children) was still large.
- Adolescent fertility declined only modestly and well short of the target; 29% of adolescent girls 15-19 years had begun childbearing or were pregnant.
- Modern contraceptive use continued to increase from 45 to 48% and the demand satisfied from 64% to 69%, among married women between 2013/14 and 2018 (ZDHS). Injectables were consistently the most popular method, followed by implants.
- Inequalities in family planning coverage decreased: there were greater increases in modern contraceptive use among women living in rural areas and in poorer households or having less education, and in most provinces with lower coverage at baseline.

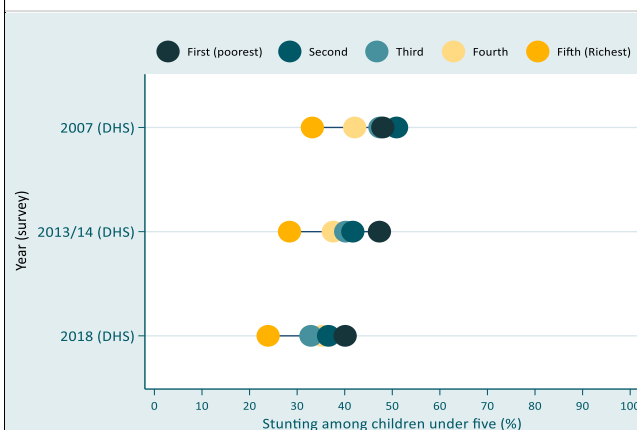
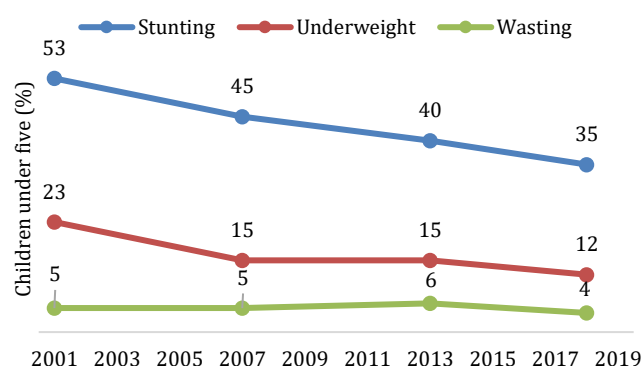


	<p>Proportion of demand satisfied by modern methods among married women (%)</p> <p>ZDHS 2018</p> <p>Lower baseline coverage Higher baseline coverage</p>
MATERNAL AND NEWBORN CARE: continued decline in maternal mortality but not newborn mortality; increases in coverage for skilled birth attendance (80%), 4 or more ANC visits (64%) and PNC visits within 48 hours (70%) with reduced socioeconomic inequalities	
<ul style="list-style-type: none"> Pregnancy-related mortality ratio reduced from 398 to 278 between 2013/14 and 2018 ZDHS. During 2014–2018, having 4 or more ANC visits increased from 56 to 64%. However, too few pregnant women had their first ANC visit during the first trimester (37%). There are few good indicators of quality of care, but the DHIS2 data showed small improvements in anaemia testing (85 to 89%) and syphilis testing (44 to 56%) among women attending ANC. Delivery and postnatal care reached the 2018 targets: skilled birth attendance care went from 64 to 80%, and postnatal visits within 48 hours after delivery from 63% to 70%. The increases occurred in all regions. Socioeconomic inequities also reduced, as an increasing number of women in the poorest wealth quintile reported skilled birth attendance and postnatal care visits within 48 hours. 	<p>Maternal deaths per 100,000 live births</p> <p>2001-02 ZDHS 2007 ZDHS 2013-14 ZDHS 2018 ZDHS</p> <p>Percentage of live births (%)</p> <p>2001/2 2007 2013/4 2018</p> <p>■ Institutional deliveries ■ Deliveries attended by a skilled provider</p>
IMMUNIZATION COVERAGE: Sustained high levels of child immunization coverage	
<ul style="list-style-type: none"> Immunization coverage levels among infants remained high, with 9 out of 10 children receiving the recommended vaccines. Full immunization coverage increased from 68% to 75% by 2018 (ZDHS) but did not reach the target of 79%. Drop-out rates for BCG-Measles, OPV and Penta declined overall. 	<p>Percentage of children aged 12-23 months (%)</p> <p>2013/14 ZDHS 2018 ZDHS</p> <p>BCG OPV3 Penta3 PCV MR1 Rota Fully...</p>



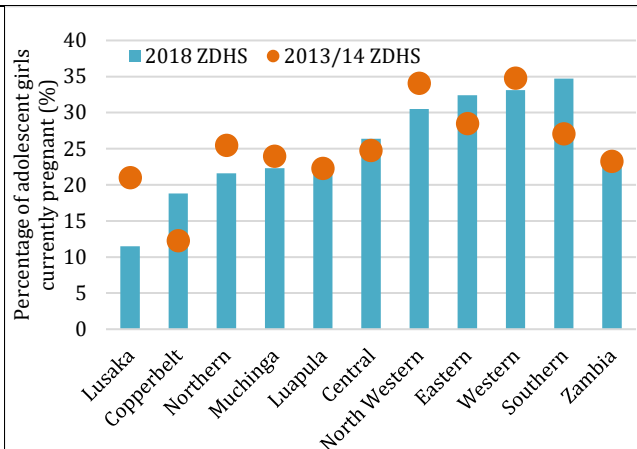
CHILD NUTRITION: continued gradual improvement in child anthropometric status but still 35% of children under-five were stunted by 2018, and little change in infant and young child feeding practices

- Child nutritional status indicators improved during 2013/14 at the same pace as in the preceding decade. Stunting reduced at a 1% absolute, or 2.4% relative, decline per year but was still 35% in 2018.
- Inequalities in child stunting by wealth quintiles remained the same between 2007 and 2018 ZDHS: the poorest group had a 15-percentage point higher rate than the richest group.
- Early initiation of breastfeeding within one hour after birth steadily increased, from 66% in 2013/14 to 76% in ZDHS 2018. Exclusive breastfeeding for six months remained around 70% in 2018 (ZDHS), similar to the previous survey in 2013/14.
- Less than 1 in 4 children under-five received a minimally adequate diet (22%), with no improvement over time.



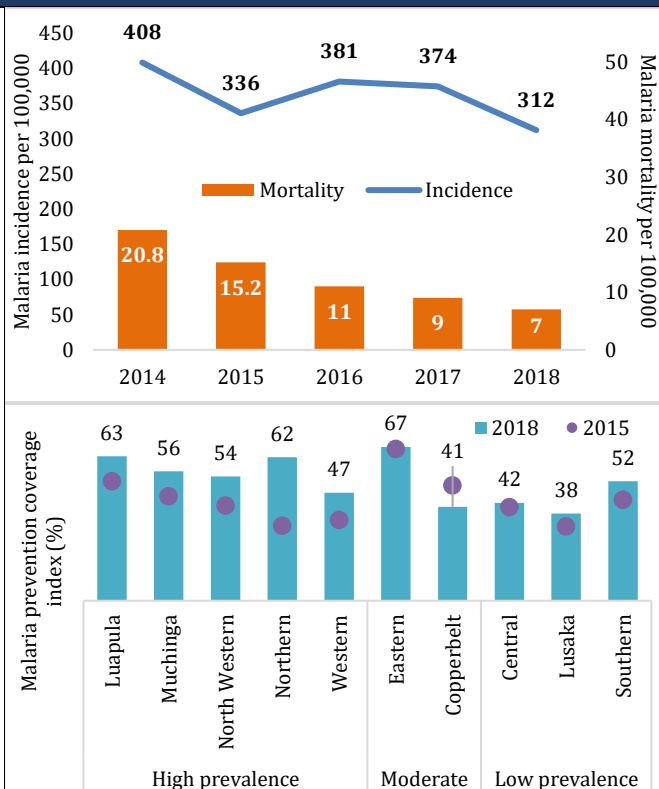
ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH: little change in the reduction in adolescent childbearing or child marriage, but slight decline in HIV prevalence among adolescents

- Childbearing before age 20 remained common (29% of girls 15–19 years), and was 37% in rural Zambia
- HIV prevalence reduced slightly and remained higher among girls (2.6%) than boys (1.2%) (ZDHS 2018).
- Comprehensive right knowledge of HIV prevention did not improve between 2013/14 and 2018 ZDHS among boys or girls aged 15-19 years.



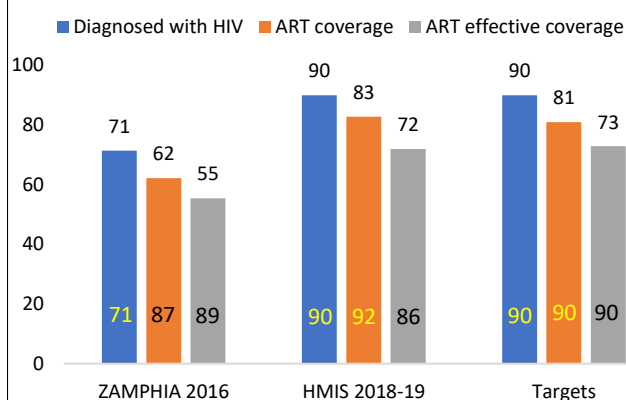
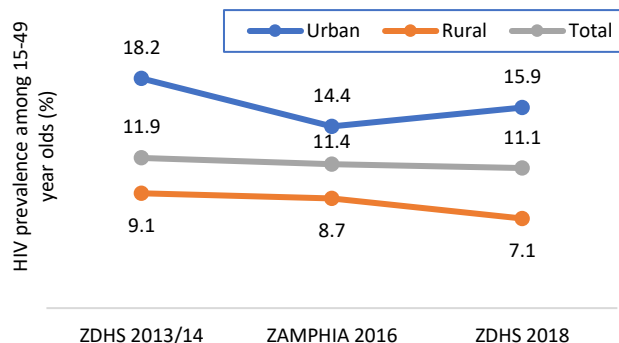
MALARIA: decline in malaria prevalence and increasing intervention coverage, focused on higher prevalence provinces

- Malaria has declined in Zambia between 2015-2018, most prominently shown by a halving of the parasite prevalence rate in children from 15.5 to 7%, but major provincial differences remained.
- All malaria intervention coverage indicators showed positive trends, and several reached the 2018 NHSP targets. There were increases for use of LLITN, IPT3 and IRS, as well as diagnostic testing by blood slide or rapid test in children and use of ACT for treatment of malaria.
- Intervention coverage increased in provinces with higher prevalence between 2015-2018 (ZMIS), and generally reached lower socio-economic groups as much or more than higher socio-economic groups.



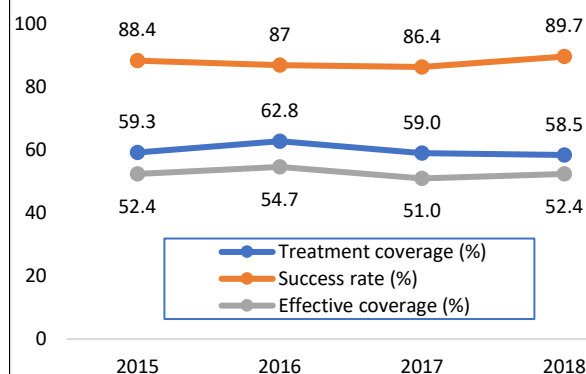
HIV/AIDS: HIV prevalence still high but declining slightly; increasing and high ART coverage but effective coverage still only 59%

- There has been a long-term trend towards reduction in HIV/AIDS mortality (by 37 percentage points since 2010) and to a lesser extent HIV incidence (by 13 percentage points since 2010). However, HIV incidence still significant, with nearly 50,000 new infections per year and 1.2 million living with HIV in 2018.
- Coverage of ART has increased to 78% in 2018, due to more widespread HIV testing since 2017 and more rapid initiation of treatment. However, effective coverage (i.e. viral load suppression among all people living with HIV) was still 59% in 2018.
- PMTCT is universal and almost 9,000 new infections are averted every year.
- The indicators on sexual behaviour related to the prevention of HIV and STI showed little progress (except male circumcision).



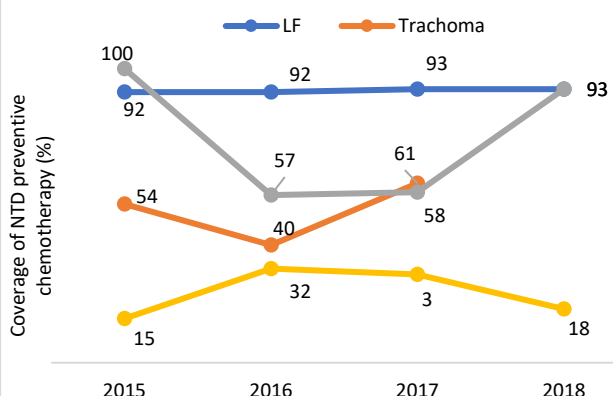
TUBERCULOSIS: declining TB incidence and high treatment success rates, but case detection rates still below 60%

- Most TB indicators progressed during NHSP, including declining TB incidence and notification rates, high TB treatment success rates (90%), increasing treatment success rates among MDR-TB patients and nearly all TB/HIV patients on ART.
- Yet, effective coverage of TB treatment remained low (52%) as TB case detection / treatment initiation rates did not increase and were still below 60%.



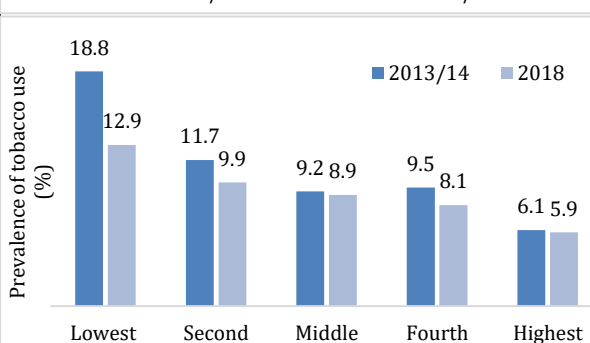
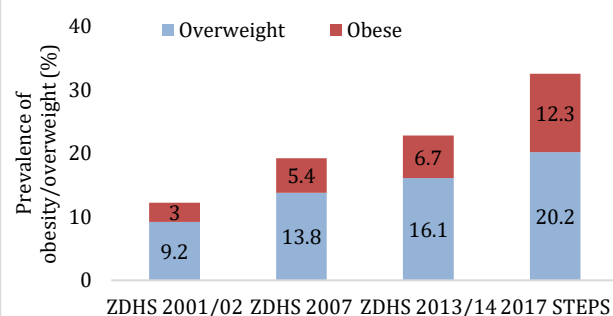
NEGLECTED TROPICAL DISEASES: still endemic in most districts and no strong increase in preventive chemotherapy

- Neglected tropical diseases (NTDs) are endemic in many of the 117 districts in Zambia: lymphatic filariasis (LF) in 85 districts, soil-transmitted helminths (STH) in 103, schistosomiasis (SCH) also in 103, and trachoma in 50 districts.
- Cases of human African trypanosomiasis rhodesiense declined from over 700 cases in 2005 to 53 cases in 2016.
- Coverage of preventive chemotherapy for applicable NTDs varied greatly, being high for lymphatic filariasis and soil-transmitted helminths, moderate for trachoma, but low for schistosomiasis.



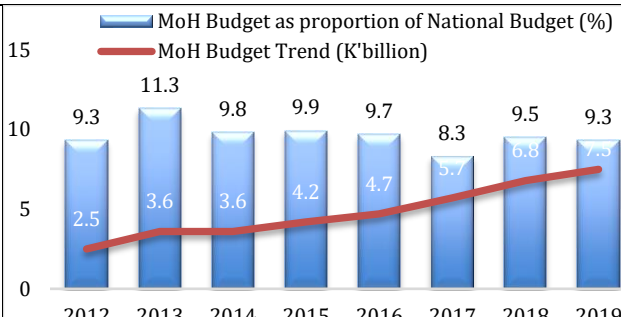
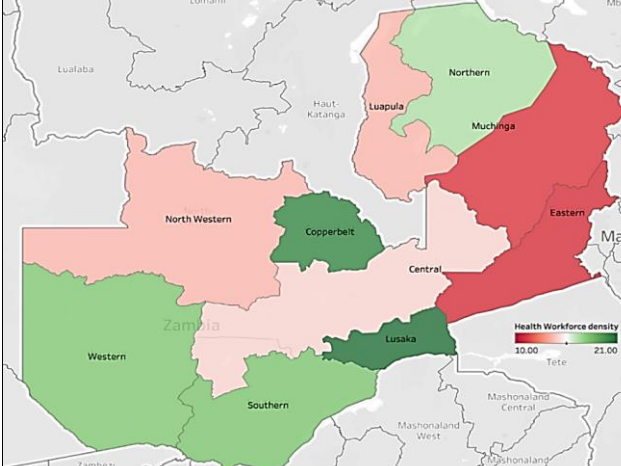
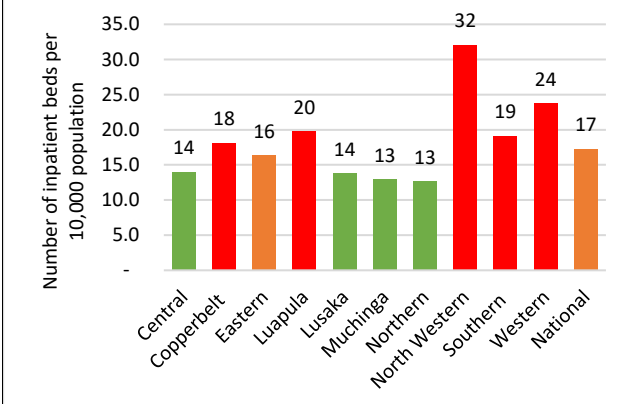
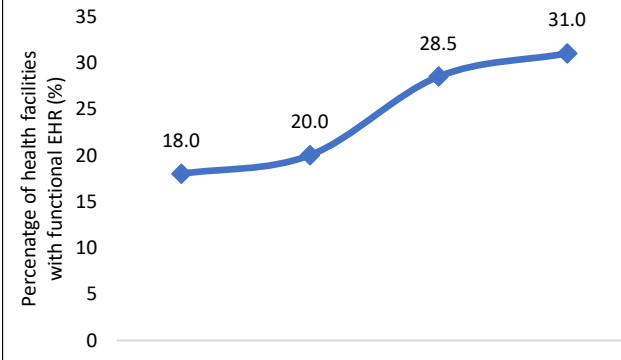
NON-COMMUNICABLE DISEASES: rises or elevated levels in NCD and its risk factors such as obesity, diabetes, high blood pressure, alcohol use (men), high salt intake, and tobacco use (men, steady at 20%)

- Numerous risk factors for NCDs had high levels and unfavourable trends, particularly among urban residents.
- Obesity and overweight prevalence among women increased from 23% in 2014 (15-49 years, ZDHS) to 33% in 2017 (18-69 years, STEPS survey). Long term trends accelerated rapidly. Among children under-five, there was almost no overweight and no increase over time.
- One-tenth of adults did not engage in adequate physical activity in 2017, especially urban women.
- Alcohol use was high among regular users (one-third of men and one-ninth of women).
- Tobacco use was low for women (1%), and remained fairly constant among males (20.2% to 19.6%), but lower than the targets for 2018.
- About 6% of adults in 2017 reported having raised blood glucose levels or were currently on medication for diabetes.



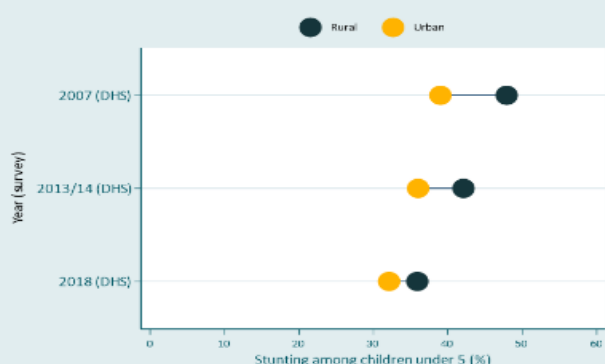
- The prevalence of raised blood pressure among males and females in 2017 was 20.5% and 17.6%, respectively.
- Average daily salt intake of 9.5 grams in 2017 was almost two times higher than the WHO threshold of 5 grams per day.
- Only 21% of women 18-69 years had ever been screened for cervical cancer.

HEALTH SYSTEM: some improvements in governance and domestic health financing, as well as health workforce and infrastructure and information system

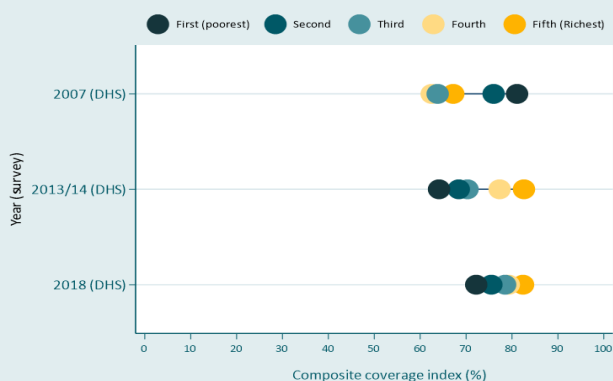
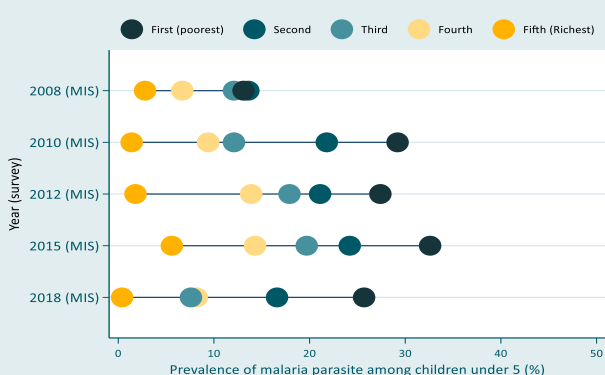
<ul style="list-style-type: none">● Financing: The coordination and implementation management structures for NHSP are in place and functioning. Program-specific plans are generally well-aligned with NHSP. The health sector budget has increased during NHSP but the percent of government remained the same at just under 10%. Health care financing for public health institutions has been largely tax based, the implementation of the National Health Insurance Scheme commenced in October 2019.	 <p>MoH Budget as proportion of National Budget (%)</p> <p>MoH Budget Trend (K'billions)</p> <table><tr><th>Year</th><th>MoH Budget as proportion of National Budget (%)</th><th>MoH Budget Trend (K'billions)</th></tr><tr><td>2012</td><td>9.3</td><td>2.5</td></tr><tr><td>2013</td><td>11.3</td><td>3.6</td></tr><tr><td>2014</td><td>9.8</td><td>3.6</td></tr><tr><td>2015</td><td>9.9</td><td>4.2</td></tr><tr><td>2016</td><td>9.7</td><td>4.7</td></tr><tr><td>2017</td><td>8.3</td><td>5.7</td></tr><tr><td>2018</td><td>9.5</td><td>6.8</td></tr><tr><td>2019</td><td>9.3</td><td>7.3</td></tr></table>	Year	MoH Budget as proportion of National Budget (%)	MoH Budget Trend (K'billions)	2012	9.3	2.5	2013	11.3	3.6	2014	9.8	3.6	2015	9.9	4.2	2016	9.7	4.7	2017	8.3	5.7	2018	9.5	6.8	2019	9.3	7.3
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<ul style="list-style-type: none">● Workforce: The total health workforce requirement in the country as per the established positions at the end of 2019 was 126,389, however the filled positions were 60,332 (a gap of 52%). The core health workforce density (medical officers, nurses, midwives, clinical officers) increased to 16.5/10,000 in 2019 but still well short of the target. There was variation across the provinces. All facilities had 80% of professional staff at all levels of health care.	 <p>Health Workforce density</p> <p>10.00 21.00</p>																											
<ul style="list-style-type: none">● Utilization and infrastructure: The facility density was surpassed with 15 public health facilities per 100,000 population. Bed density per 10,000 population in Zambia declined by 15% from 20 in 2015 to 17 in 2018, but beds in the private sector are heavily underrepresented, and were less dense in less populated rural provinces. The average number of outpatient visits was 1.3 visits per year with little change between 2015-2018. The blood donation rate declined from 7.8 to 7.4, well below the target of 10 per 1000 persons.	 <p>Number of inpatient beds per 10,000 population</p> <table><tr><th>Province</th><th>Number of inpatient beds per 10,000 population</th></tr><tr><td>Central</td><td>14</td></tr><tr><td>Copperbelt</td><td>18</td></tr><tr><td>Eastern</td><td>16</td></tr><tr><td>Luapula</td><td>20</td></tr><tr><td>Lusaka</td><td>14</td></tr><tr><td>Muchinga</td><td>13</td></tr><tr><td>Northern</td><td>13</td></tr><tr><td>North Western</td><td>32</td></tr><tr><td>Southern</td><td>19</td></tr><tr><td>Western</td><td>24</td></tr><tr><td>National</td><td>17</td></tr></table>	Province	Number of inpatient beds per 10,000 population	Central	14	Copperbelt	18	Eastern	16	Luapula	20	Lusaka	14	Muchinga	13	Northern	13	North Western	32	Southern	19	Western	24	National	17			
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North Western	32																											
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Western	24																											
National	17																											
<ul style="list-style-type: none">● Health information system: Regular surveys are conducted including DHS every five years, malaria and HIV surveys and a recent NCD survey, as well as a national health facility census in 2017 (public sector). Completeness of reporting in HMIS, using a single form for each facility, is high (> 90%), but data element completeness could not be assessed. Private sector reporting is very poor and also larger health facilities tend to underreported.	 <p>Percentage of health facilities with functional EHR (%)</p> <table><tr><th>Year</th><th>Percentage of health facilities with functional EHR (%)</th></tr><tr><td>2015</td><td>18.0</td></tr><tr><td>2016</td><td>20.0</td></tr><tr><td>2017</td><td>28.5</td></tr><tr><td>2018</td><td>31.0</td></tr></table>	Year	Percentage of health facilities with functional EHR (%)	2015	18.0	2016	20.0	2017	28.5	2018	31.0																	
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SOCIOECONOMIC AND REGIONAL COMPARISONS: reductions in the urban rural coverage gaps, gaps between rich and poor, but substantial gaps between better-off more urbanized provinces and poorer provinces remained; Zambia is an intermediate performer compared to other countries in the region

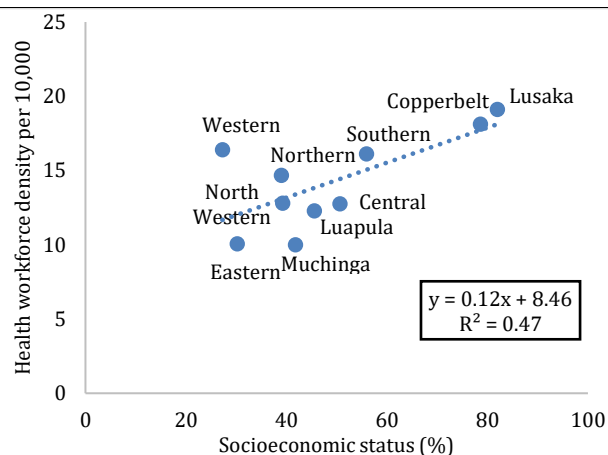
- **Rural-urban residence:** The urban-rural gap in Zambia remained for under 5 mortality, stunting in childhood and coverage of RMNCH interventions, but there is some evidence of a reduction of the gap between the ZDHS 2013/14 and ZDHS 2018. For malaria interventions the urban-rural gap increased.



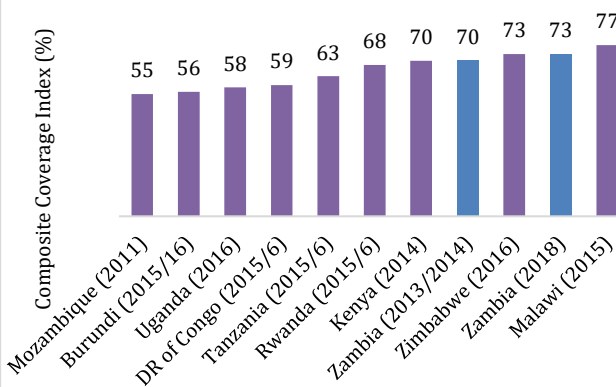
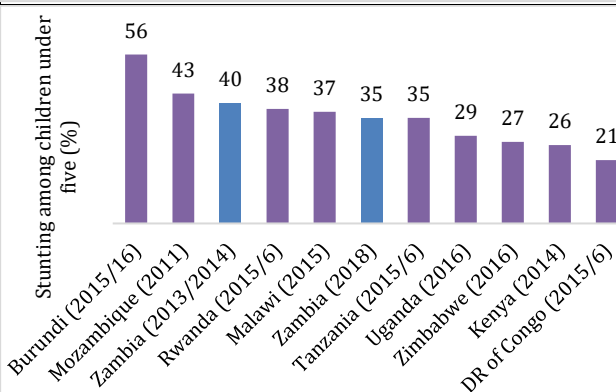
- **Socioeconomic status:** Comparing women and children in the poorest and richest households, there was a smaller gap in neonatal and under-five mortality in 2018 than 2013/14, but a consistently large gap in stunting. Surprisingly, stunting was not evidently correlated with provinces' level of socioeconomic development.
- The malaria parasite prevalence remained persistently higher among the poorest children, while the richest continued to have higher prevalence of HIV prevalence.
- RMNCAH intervention coverage improved more among the poorest wealth groups. Still, the greatest improvements occurred in the more socioeconomically developed provinces of Lusaka and Copperbelt, as well as Eastern.



- **Health system strength by province:** OPD utilization rates generally improved in provinces with lower socioeconomic status (Western and Eastern, but also Southern with a higher socioeconomic status). Conversely, health workforce density was higher in provinces with higher socioeconomic status (Lusaka and Copperbelt), except Western province with lower socioeconomic status.
- Infrastructure strength (density of beds and facilities) was higher in provinces with higher population density and socioeconomic development (Lusaka and Copperbelt).



- **Comparison to countries in Eastern and Southern Africa sub-region:** Zambia had an intermediate position on child mortality, child stunting and fertility levels and was in the top three for lowest maternal mortality and highest coverage (using composite coverage index) of RMNCAH interventions.



Summary of NHSP targets and indicators

Indicator	Baseline (year, source)	Target 2018	Achievement (source)	Comments
Life expectancy and Mortality				
Life expectancy at birth (years)	Males: 49.2 (2010 Census) Females: 53.7 (2010 census)	52.2 56.8	Males: 60.2 (WHO estimates 2018) Females: 64.4 (WHO estimates 2018)	Life expectancy at birth has increased significantly for both males and females.
Under-5 mortality rate per 1000 live births	75 (ZDHS 2013/14)	59	61 (ZDHS 2018)	Estimate based on the previous five years. Good progress, still below target.
Neonatal mortality rate per 1000 live births	24 (ZDHS 2013/14)	18	27 (ZDHS 2018)	Mortality has increased though not statistically significant.
Infant mortality rate per 1000 live births	45 (ZDHS 2013/14)	30	42 (ZDHS 2018)	Modest decline.
Maternal mortality ratio per 100,000 live births	398 (2013/14 ZDHS)	250	278 (2018 ZDHS)	Estimate based on the previous 7 years. Good progress; however, still above target. The maternal mortality ratio was estimated at 252 per 100,000 live births.
Adult mortality rate 15-49 years per 1000 population	8.4 (ZDHS 2013/14)	8.1	5.1 (ZDHS 2018)	Large decline, below target. Age-adjusted mortality rate is 4.3 for women, 5.9 for men, and 5.1 for both women and men, aged 15-49.
Morbidity				
Morbidity burden contributed by the 10 top causes ill-health (%)	N/A	N/A		Indicator had no baseline or targets set.
RMNCAH				
Reproductive health				
Total fertility rate (per woman)	5.3 (ZDHS 2-13/14)		4.7 (ZDHS 2018)	Larger decline in rural areas.
Fertility rate (per 1000 women 15-49)	152 (2014)	132	134 (ZDHS 2018)	Fertility rate declined by 18 points, nearly reaching the target.
Fertility rate among adolescents (per 1000 girls 15-19)	141 (2014)	121	135 (ZDHS 2018)	Rate among adolescents declined less, not quite halfway to the target.
Married women with FP need satisfied with modern methods (%)	63.8 (ZDHS 2013/14)	76	68.5 (ZDHS 2018)	5 percentage point increase-steady progress.
Contraceptive prevalence rate (% modern)	32.5 (ZDHS 2013/14)	56	34.1 (ZDHS 2018)	Far below the target for all women. Modern contraceptive prevalence rate among married women was 47.5%.

Indicator	Baseline (year, source)	Target 2018	Achievement (source)	Comments
Contraceptive prevalence among adolescents (% modern)	10.2 (2013/14)	38	12.0 (ZDHS 2018)	Target not reached.
Percentage of clients accessing Long Acting Reversible Contraceptives	4 (2016, HMIS HIA 2)	N/A	4.5 (HMIS, HIA 2)	Indicator not available in the NHSP and M&E framework.
Couple Years of Protection Rate (CYP)	33.3 (2016, HMIS HIA 2; 2018 CSO Pop. Proj.)	N/A	35.6 (2018, HMIS HIA 2; 2018 CSO Pop. Proj.)	Indicator not available in the NHSP and M&E framework.
Maternal and Newborn Care				
<i>Pregnancy outcomes</i>				
Pregnancy-related Mortality Ratio (per 100,000 live births)	398 for 2007-2014 (ZDHS 2013/14)	250	278 for 2012-2018 (ZDHS 2018)	Estimate based on the previous 7 years. Good progress; however, still above target. The maternal mortality ratio was estimated at 252 per 100,000 live births.
Low Birth Weight (% of live births)	9.7 (HMIS, 2016)	7.8	11.4 (HMIS 2018)	Low birth weight has increased in health facility births.
<i>Antenatal care</i>				
First ANC Coverage (Total 1 st Antenatal visits) (%)	95.7 (2013/14 ZDHS)	97	97 (ZDHS 2018), near 100% (HMIS 2018)	Decline in First ANC. Might be due to the incompleteness of the data in routine data collected.
1 st Antenatal Visit before 14 weeks (%)	24.4 (2013/14 ZDHS) 12 (HMIS 2016)	45	36.7 (ZDHS 2018) 22 (HMIS 2018)	Increase during 2016-2018, but short of target.
4+ Antenatal visits before delivery (%)	55.5 (2013/14 ZDHS) 42 (HMIS 2016)	65	63.5 (ZDHS 2018); 52 (HMIS 2018)	Inconsistencies between HMIS and ZDHS but increase in both.
Syphilis screening coverage of 1 st ANC clients (%)	44 (HMIS 2013)		56.3 (HMIS 2018)	Increase of about 12 percentage points.
Anaemia screening coverage of 1 st ANC clients (%)	85.2 (HMIS 2013)		89.5 (HMIS 2018)	Increase of 4 percentage points. No target set.
<i>Delivery and postnatal care</i>				
Percentage of institutional deliveries (%)	67.4 (ZDHS 2013/2014)	N/A	83.8 (2018 ZDHS)	Increase of 23%. No target set in the M and E plan.
Percentage of skilled deliveries (%)	64.2 2013/14 ZDHS	79	80.4 (2018 ZDHS)	Target has been achieved and surpassed by 1 percentage point.
Caesarean section rate (%)	3.5 (2015 HMIS) 4.4 (2013/14 ZDHS)	7.0	5.6 (2018 HMIS); 5.0 (2018 ZDHS)	Increased by over 2 percentage points but still lower than target.
Postnatal care visit within 48 hours after delivery (%)	63.4 (2013/14 ZDHS)	74	69.7 (2018 ZDHS)	

Indicator	Baseline (year, source)	Target 2018	Achievement (source)	Comments
Child health and nutrition				
<i>Nutritional status and treatment of childhood illnesses</i>				
Percentage of children underweight	15 (2013/14 ZDHS)	9.8	12 (2018 ZDHS)	Important reduction but ambitious target not reached
Percentage of children stunted	40 (2013/14 ZDHS)	29.6	35 (2018 ZDHS)	Long term reduction since 2001 continuing.
Percentage of children wasted	6 (2013/14 ZDHS)	4	4 (2018 ZDHS)	Target achieved.
Percentage of children with minimum dietary diversity	22 (2013/14 ZDHS)	N/A	23 (2018 ZDHS)	Minimum dietary diversity did not increase in the past five years.
Exclusive breastfeeding 0-6 months	72.5 (2013/14 ZDHS)	75.8	69.9 (2018 ZDHS)	Target not met.
Breastfeeding initiated within 1 hour of birth (%)	65.8 (2013/14 ZDHS)	79	76.6% (2018 ZDHS)	Target almost reached.
Percentage of children with diarrhoea receiving Oral Rehydration Solution (ORS, and Zinc supplements) (%)	64.1 (2013/14 ZDHS)	79	66.8 (2018 ZDHS)	Zinc was not offered previously, thus ratios compared were for ORS only.
Percentage of caregivers with appropriate care-seeking for symptoms of pneumonia (%)	71.9 (2013/14 ZDHS)	82	74.5 (2018 ZDHS)	No major change over time.
<i>Immunization of children</i>				
BCG coverage (%)	94.9 (2013/14 ZDHS)	90	97.5 (2018 ZDHS)	Target achieved.
BCG to Measles 1 dose dropout rate (new) (%)	10.5 (2013/14 ZDHS)	N/A	6.8 (2018 ZDHS)	Reduced by three points.
OPV coverage, 3 rd dose (%)	77.6 (2013/14 ZDHS)	90	81.2 (2018 ZDHS)	Target achieved.
OPV1 to OPV3 doses drop-out rate (%)	19.4 (2013/14 ZDHS)	N/A	15.9 (2018 ZDHS)	Reduction by nearly 5 percentage points.
Pentavalent vaccine, 3 rd dose (%)	85.8 (2013/14 ZDHS)	90	92.1 (2018 ZDHS)	Target achieved.
Penta 1 to Penta 3 drop-out rate	10.5 (2013/14 ZDHS)	N/A	5.9 (2018 ZDHS)	Reduced by almost 5 points.
PCV 3 coverage rate	92.9 (2016, HIA 2)	90	90.6 (2018, HIA 2) 89.8 (2018 ZDHS)	Newly introduced vaccines following ZDHS 2013/14.
Rota 2 coverage rate	N/A	90	90.6 (2018 ZDHS)	Newly introduced vaccines following ZDHS 2013/14.
Measles- Rubella first dose coverage rate (%)	84.9 (2013/14 ZDHS)	90	90.9 (2018 ZDHS)	Target achieved.
Full immunization coverage (%)	68.3 (2013/14 ZDHS)	79	75 (2018 ZDHS)	Improved noticeably but not quite reached the target.

Indicator	Baseline (year, source)	Target 2018	Achievement (source)	Comments
Adolescent Health				
Adolescent birth rate per 1,000	141 (2013/14 ZDHS)	133	135 (2018 ZDHS)	Slight reduction.
HIV prevalence among adolescents (%)	0.9 (10-14 yrs, 2016 ZAMPHIA) Overall: 2.5 (15-19 yrs, 2016 ZAMPHIA) Male: 1.6; Female: 3.3 (15-19 yrs, ZAMPHIA 2016)	N/A	Overall: 1.9 (15-19 yrs, ZDHS 2018) Male: 1.2; Female: 2.6 (15-19 yrs, ZDHS 2018)	ZDHS 2018 shows slightly lower levels.
Percentage of districts with minimum adolescent health package	42 (Programme report)	N/A	48 (Programme report)	
Percentage of adolescents with comprehensive right knowledge of HIV Prevention	Male: 39 Female: 42 Overall: 39.5 (2013/14 ZDHS)	60	Male: 41 Female: 43 Overall: 42 (2018 ZDHS)	Young people age group used (15-24 years). Minimal progress made.
Percentage of women aged 20–24 who were married or in a union before age 15 and before age 18 (%)	Before 15: 5.9 Before 18: 31.4 (2013/14 ZDHS)	N/A	Before 15: 5.2 Before 18: 29 (2018 ZDHS)	Slight decline.
Gender-Based Violence and Child Sexual Abuse				
Proportion of individuals seeking PEP as a result of sexual assault		N/A	601 (2015, World Vision Zambia)	No baseline.
Number of children seeking health services as a result of sexual violence at a given period	3790 (HIA 2, 2016; UTH PCOE, 2016)	N/A	1565 (HIA 2, 2018; UTH PCOE, 2018)	Huge disparity in the figures from HIA 2 for 2018.
Malaria				
Malaria mortality rate per 100,000 population	15.5 (HMIS 2016)	13.3	7 (HMIS 2018)	Baseline was adjusted with new data; decline, target achieved based on health facility data.
Malaria incidence per 1,000 population	336 (HMIS 2015)	168	312 (2018 HMIS)	No major decline, large differences by province.
Prevalence of malaria parasitaemia (children 6–59 months) (%)	17 (ZMIS 2015)	9.0	9.1 (ZMIS 2018)	Major decline since 2018, in all provinces.
Slept under LLITN previous night: all pregnant women (PW) 15–49, children under 5 years (%)	All: 55.0 PW: 58.2 Under 5: 59.0 (ZMIS 2015)	All: 73.0 PW: 74.9 Under 5: 75.4	All: 63.6 PW: 71.1 Under-5: 69.0 (ZMIS 2018)	Good progress during 2015-2018, but short of 2018 target.

Indicator	Baseline (year)	Target 2018	Achievement (source)	Comments
Proportion of treated malaria cases that were lab confirmed (%)	83 (HMIS 2016)	N/A	96 (HMIS 2018)	Nearly all cases now lab confirmed.
IPT3 dose to pregnant women (%)	44.7 (ZMIS 2015)	N/A	67.3 (ZMIS 2018)	Major increase while IPT2 remained at about 80%.
IRS for households in past 12 months (%)	28 (2015 ZMIS)	57.4	35 (ZMIS 2018)	Increase in coverage by one-fifth, but far off 2018 target.
HIV/AIDS				
HIV deaths per 100,000 population	126 (HMIS, 2016)	110	N/A	
HIV incidence per 1,000 population	6.1 (2016, ZAMPHIA)	0.5	N/A	Only UNAIDS/Spectrum predicted estimates available.
HIV prevalence among 15-59 years (%)	12.0 (2016, ZAMPHIA)	10.0	11.1 (ZDHS 2018, 15-49 years)	15-59 is slightly higher than 15-49; no decline.
ART coverage among eligible persons living with HIV infection (M/F) (%)	85.1 86.2 (M) 84.4 (F) (ZAMPHIA 2016)	87.1 87.7 (M) 86.6 (F)	92 (HMIS Q2 2019) 84 (COP Q3 2018)	Indicator refers to those who have been diagnosed, not coverage; progress according to HMIS.
Viral load suppression among PLHIV (%)	89.2 87.7 (M) 90.1 (F)	89.5 88.6 (M) 90.1 (F)	86.3 (HMIS Oct18- Sep19) 88 (COP Q3 2018)	Only data for both sexes, just short of target and baseline.
ART retention at 12 months (%)	75 (HMIS 2015)	78	N/A	No data.
HIV-positive women receiving ART for PMTCT (%)	65 (NACP, 2012)	90 by 2017 (NACP)	>90 (UNAIDS) 88.5 (HMIS 2018)	
PMTCT: children testing positive within 18 months (%)	5.0 (HMIS 2016)	3.4	3.8 (HMIS 2018)	Good progress but short of target
Awareness of HIV positive status among 15-59 years (%)	71 69 (M) 73 (F) (ZAMPHIA 2016)	75.7 73.4 (M) 77.0 (F)	90 (HMIS, Q2 2019)	Baseline corrected with ZAMPHIA data. Target achieved by 2019.
Condom use at last sex among those with 2+ partners in last year (%)	27.4 (M, 15-59) 29.7 (F, 15-49) (ZDHS 2013/14)	50 (M) 50 (F)	26.5 (M) 38.2 (F) (ZDHS 2018)	No progress for men, not sufficient for women to reach target.
Knowledge of HIV among 15-19 years (%)	39.5 (ZDHS 2013/14)	60	42 (ZDHS 2018)	Knowledge of four prevention methods.
Tuberculosis				
TB incidence rate / TB cases per 100,000	391 (2015 WHO)	335	346 (WHO 2018)	Incidence rates estimated by WHO.
TB death rate per 100,000 population	115 (2015WHO)	115	102 (2018 WHO)	Death rates estimated by WHO.
TB notification rate (per 100,000 population)	231 (2015 TB prevalence survey)	N/A	202 (TB prevalence survey 2018)	Substantial decline.

Indicator	Baseline (year)	Target 2018	Achievement (source)	Comments
TB treatment coverage / case detection per 100 incidence cases	59.3 (2015 WHO)	N/A	58.5 (2018 WHO)	No progress, major impact on effective coverage.
TB treatment cure rate (success rate) (%)	84 (HMIS, 2015)	86	90 (2018 HMIS)	Target surpassed in 2018, but effective coverage not progressing.
Multi-drug resistance: successfully treated cases (%)	30 (2015 HMIS)	65 (2018)	71 (2016 cases)	Target surpassed.
TB/HIV patients on ART (%)	76 (2015 HMIS)	77	91 (2018)	Target surpassed.
Neglected tropical diseases				
Coverage of preventive chemotherapy for applicable NTDs (%)	92.6 (2015)	95.2	Ranging from 18 to over 90% (NTD programme, 2018)	LF and STH doing well, but schistosomiasis coverage is low.
Non-communicable diseases (NCD)				
Obesity and overweight prevalence among adults (M/F) (18–69 years) (%)	M: NA; F: 22.8 (15-49 years, 2013/14 ZDHS)	N/A	M: 16.2; F: 32.5 (18-69 yrs, STEPS 2017)	Prevalence of obesity and overweight has worsened among women.
Adults with insufficient physical activity (%)	N/A	17.8	10.4 (STEPS 2017)	Lower than the target for which the basis is not clear.
Prevalence or raised blood glucose among adults 25–64 years (%)	N/A		Male: 6; Female: 6 (2017 STEPS)	No baseline and target.
Age-standardized prevalence of current tobacco use among persons aged 15+ years (%)	Male: 20.2 (2013/14 ZDHS) Female: 1.6 (2013/14 ZDHS)	Male: 21 Female: 3	Male: 19.6 (ZDHS 2018) Female: 0.9 (ZDHS 2018)	Good progress among females. Tobacco use increasing among males.
Adults with raised BP (SBP \geq 140 and/or DBP \geq 90 mmHg), %	N/A	N/A	All: 19; M: 21; F: 18 (STEPS, 2017)	
Mean salt intake among adults (in grams)	N/A	<5 ¹	All: 9.5; F: 8.5; M: 10.5 (STEPS, 2017)	Salt intake in Zambia is almost two times higher than the recommended daily allowance.

¹ WHO recommendation for daily salt intake.

Indicator	Baseline (year)	Target 2018	Achievement (source)	Comments
Health system				
Governance & financing				
Service (HP, HC & Hospital) and management (province, district) units with functional governance structures for implementing, coordinating and monitoring NHSP 2017-21 (%)	(Administrative Reports, 2016)	100	100	Governance structures are virtually present in the institutions.
Service units with planning and reporting tools relevant to each level of care (policies, strategy, operational plans, M&E framework (%))	(Administrative Reports, 2016)	100	100	The target was achieved, although there is a need to better define the indicator.
Presence of functional coordination and partnership mechanism from community to national level	(Administrative Reports, 2016)	TBA	Yes	The target was achieved, although there is a need to better define the indicator.
Appropriate steward stability to implement policies				Field work results awaited.
Programmes implemented according to NHSP (annual reports, performance reports etc.) (number)				Field work results awaited.
Out of Pocket (OOP) health expenditure as percent of current expenditure on health	12.2 (2016 NHA report)	17.6	No Data	The target is higher than baseline; OOP estimates by WHO are much higher.
Total current expenditure on health (%) of gross domestic product	4.5 (2016 NHA report)	9.0	No Data	
Household Health Expenditure as percent of Total Health Expenditure (%)	11.5 (2016 NHA report)		No Data	
Government expenditure on health as percent of total current expenditure (%)	38.3 (2016 NHA report)	13.4	No Data	
External source of current spending on health as percent of current expenditure on health (%)	42.5 (2016 NHA report)	43.4	No Data	
Total capital expenditure on health as a percent of current plus capital expenditure on health (%)	5.1 (2016 NHA report)	8.8	No Data	
Population covered by health insurance (%)	4 (2016 NHA report)	50	4	The target was not met.

Indicator	Baseline (year, source)	Target 2018	Achievement (source)	Comments
Health workforce				
Health worker density (MO, CO, nurses, and midwives)	12 per 10,000 population	35	16.5 (2019)	Major increase but the 2018 target is still far.
Percent of approved posts filled by skilled personnel (doctors, medical licentiates, clinical officers, nurses, other) by the 6 levels of care (%)	69.2 (WHO AFRO)	73.5	47	This indicator was well below the target and baseline.
Health facilities with at least 80% of professional staff on establishment filled (by the 6 levels of care) (%)	73 (HRIS year)	85	100	Every facility in Zambia has qualified personnel.
Health facilities with at least one qualified health worker (%)	88	90	>95	Performance above target.
Health Workers trained annually as percent of total professional workforce gap	N/A	N/A		No data.
Proportion of health workers recruited annually as percent of the workforce gap (%)	N/A	N/A	16	Significant achievements were made during 2018-19 with deficits of 16% in 2018.
Health infrastructure, medicines, utilization				
Health facility density (by type and distribution) per 100,000 population	4.3 (2016, NHFC)	11.8	15.1 (NHFC, 2019)	Target achieved and exceeded. Significant variations across provinces.
Bed density and distribution (Inpatient, maternity, infant, isolation) per 10,000 population	20 (2015, WHO AFRO)	16	17.3 (NHFC, 2019)	Decline from the baseline value but density remains higher than the NHSP target.
Blood donation rate per 1,000 persons	7.8 (2015, WHO AFRO)	10.7	7.4 (2018 ZNBTS)	Indicator regressing.
OPD attendances by the catchment population in a period of time (outpatient)	4.2 (2016, HMIS)	3.5 (2018)	3.8 (2018 HMIS)	Given the uncertainty of catchment populations the indicator is difficult to interpret.
Health information system				
Coverage of birth registration (%)	14	20.4	14.8	Computed with the estimated births in 2018; need to strengthen the Civil registration system.
Coverage of death registration (%)	N/A	N/A	13	
Existence of a functional integrated data repository	N/A	N/A	Available	Data warehouse is not fully operational; other service areas not stored in data warehouse must be included.
Proportion of hospitals using correct ICD coding (%)	N/A	20	13	Inadequate ICT equipment has contributed to the low use of ICD10 coding.
Coverage of IDSR surveillance systems (%)	25	55	100	All districts are using IDSR for reporting weekly and monthly.

Indicator	Baseline (year, source)	Target 2018	Achievement (source)	Comments
Presence of comprehensive country health database for the past five years	N/A	N/A	Available	MoH implemented the DHIS2; other databases: HRIS, Logistimo, EMLIS, planning and budgeting tool, NAVISION for expenditure
Completeness levels of facility reporting (%)	80	84	90.3	The report completeness has shown improvement due to enhancement systems that monitor data entry; timeliness still remains a challenge.
Data accuracy levels of facility reporting (%)	50	54	N/A	
Proportion of health facilities with functional EHR (by level of care (%))	20	32	31	879/2698 are using EHR while 228/879 facilities are E-first facilities.

Summary of progress towards the 10 legacy goals of NHSP 2017-2021 by mid-2019 based on quantitative data analyses

Goal	Progress
1 Reduction in Maternal and Child Mortality	<ul style="list-style-type: none"> Maternal mortality is declining and estimated at 200/100,000 live births by 2018, on track to reach the 2021 target; this is supported by increases in service coverage such as antenatal care visits (64%) and skilled birth attendance (80%). Child mortality is declining but the pace of the decline is slowing down and falling behind the NHSP target. This is mainly due to stagnation in neonatal mortality, which now comprises 44% of all under-5 deaths. This is occurring in spite of increasing levels of institutional deliveries and postnatal care visits, as well as immunization coverage. Quality of care issues may play an important role.
2 Elimination of Malaria	<ul style="list-style-type: none"> Malaria has declined in Zambia between 2015-2018, most prominently shown by a halving of the parasite prevalence rate in children from 15.5 to 7%, but major provincial differences remained. Malaria mortality and incidence also declined according to health facility data but the elimination target is still far away, especially for incidence. All malaria intervention coverage indicators showed positive trends, and several reached the 2018 NHSP targets. There were increases for use of LLITN, IPT3 and IRS, as well as diagnostic testing by blood slide or rapid tests among children, and use of ACT for treatment of malaria. Intervention coverage increased in provinces with higher prevalence between 2015-2018 (ZMIS), and generally reached lower socio-economic groups as much or more than higher socio-economic groups.
3 Achieve HIV Epidemic Control, Reduce HIV new	<ul style="list-style-type: none"> There has been a long-term trend towards reduction in HIV/AIDS mortality (by 37% since 2010) and HIV incidence (13% lower since

	infections from 48,000 to less than 5,000	<p>2010), but HIV incidence is still significant with nearly 50,000 new infections every year and 1.2 million people living with HIV in 2018.</p> <ul style="list-style-type: none"> • PMTCT and ART for pregnant women is nearly universal, and almost 9,000 new infections are averted every year. • Coverage of ART has increased to 78% in 2018, due to more widespread HIV testing since 2017 and more rapid initiation of treatment. However, effective coverage, or viral load suppression among all people living with HIV, was still 59% in 2018. The indicators on sexual behavior related to the prevention of HIV and STI showed little progress (except male circumcision).
4	Reduce TB incidence towards elimination	<ul style="list-style-type: none"> • Most TB indicators progressed during NHSP, including declining TB incidence and notification rates, high TB treatment success rates (90%), increasing treatment success rates among MDR-TB patients and nearly all TB/HIV patients on ART. • Yet, effective coverage of TB treatment remained low (52%) as TB case detection / treatment initiation rates did not increase and were still below 60%. Elimination is still far from being achieved.
5	Halt and reduce Non-Communicable Diseases	<ul style="list-style-type: none"> • High-quality recent data on NCD mortality and incidence trends are lacking but the risk factors for NCD showed unfavourable levels and trends, especially among urban residents. • Obesity and overweight prevalence increased rapidly according to data for adult women, physical inactivity was very common, alcohol use was high among regular users (one-third of men and one-ninth of women), the prevalence of diabetes and hypertension were as high as one-fifth of the adult population, and salt intake was twice the recommended thresholds. • Only tobacco use declined slightly, but was still higher than the target for men in 2017. • NCD interventions appeared to have low coverage. For instance, only 21% of women 18-69 years had ever been screened for cervical cancer.
6	Recruitment of 30,000 health care workers	<ul style="list-style-type: none"> • In 2017 and 2018, over 13,000 new core health professionals (doctors, nurses, midwives, clinical officers) were recruited, significantly expanding the workforce.
7	Train 500 specialists by 2021	<ul style="list-style-type: none"> • 280 new physicians were recruited 2017-2018. • No data by specialization were analysed.
8	Construction of 6 new specialised hospitals and 500 health facilities in the next 5 years	<ul style="list-style-type: none"> • No facility specific data were analysed. • The target for 2018 was 12 facilities per 100,000 population by 2018. There are currently 15 public facilities per 100,000 population in Zambia or one facility for about 7,000 people.
9	Introduction of Health Care Insurance to increase coverage from 4 percent to 100 percent	<ul style="list-style-type: none"> • No new data on the coverage of health insurance were available at the time of this analysis.
10	Introduction of Alcohol and Drug Abuse Policy and Programme	<ul style="list-style-type: none"> • Not included in the qualitative analysis.