



REPUBLIC OF BOTSWANA

STATUS OF SELECTED HEALTH SECTOR INDICATORS, 2015 - 2019

MINISTRY OF HEALTH AND WELLNESS

FEBRUARY 2020



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Foreword

The Ministry of Health and Wellness recognizes the importance of a well-functioning Health Information management system, and in this regard has developed a set of strategic documents which clearly articulate the strategic vision for Health Information system and Monitoring and Evaluation for the country. In place is the Integrated Health Services Plan for 2010-2020 (IHSP) which guides the health sector strategic priorities and operationalizes the National Health Policy. The progress, achievements and performance of the IHSP is measured by the National Health Monitoring and Evaluation Plan.

As we approach the end of the IHSP 2010 – 2020, it was necessary to assess progress made in the attainment of targets as set out in the IHSP and the M&E framework. The Status of Selected Health Sector Indicators report 2015 – 2019, falls within the planning period of the Integrated Health Service Plan (IHSP) 2010 – 2020, and it presents critical areas where we are doing well as the health sector, as well as those that needs to be improved .

Furthermore, this review came at the right time, when the Ministry of Health and Wellness is in the process of establishing and launching Botswana Health Data collaborative with an aim of bringing together all Health sector stakeholders for a more harmonized approach in implementation of Health Information system and M/E in the country.

Lastly, it is our hope as the Ministry of Health and Wellness as we implement recommendations of this document, they shall be ownership and accountability as well as commitment by all stakeholders to improve the country's Health Information System as well as the Monitoring and Evaluation system.



Dr. Lemogang Kwape

Minister of Health and Wellness

Acknowledgement

The compilation of this health sector indicators report was made possible through the technical support of WHO. The exercise involved data collection, as well as key informant interviews with selected Departmental leadership and Programme officers.

The Ministry of Health and Wellness would like to thank all the individuals who participated in putting together the report and made it possible to meet the targeted plans. Acknowledgements and special thanks goes to the following:

- Programme officers from various programmes within the Ministry for providing a list of key indicators for this exercise as well as participating in providing data for the performance of these key indicators
- Key Informant Interviewees for their willingness to answer questions and providing valuable inputs to the review exercise. Their contribution on challenges, achievements under different programme priority areas are gratefully acknowledged.

Sincere appreciation goes to the Department of Monitoring and Evaluation, Quality Assurance (HSMEQA) for facilitating the entire exercise; especially the following people:

- Deputy Permanent Secretary – Ms B. Moagi for her overall leadership throughout the entire exercise;
- Director – Dr K. Kalenga and the departmental technical officers for their exceptional coordination of the assessment meetings and logistics. Their role in this process cannot be overemphasized.

Special thanks goes to WHO consultants, Dr Peter Hangoma and Dr Joseph Mung'atu for their technical support and guidance to the Ministry in putting together the document and compiling the final report.

Lastly, Special thanks goes to World Health Organization (WHO) for overall support (both the technical and financial) and partnership throughout the entire exercise

Many thanks.



Mr. Solomon Sekwakwa.

Permanent Secretary
Ministry of Health and Wellness

Abbreviations and Acronyms

ART	Antiretroviral therapy
ARV	Antiretroviral
BITRI	Botswana Institute for Technology Research and Innovation
CATTEM	Community acting together to eliminate malaria
CDC	Centers for Disease Control and Prevention
CMS	Central Medical Services
CPR	Contraceptive prevalence rate
CRVS	Civil registration and vital statistics
CVR	Civil and Vital Registration
DHIS	District Health Information Software
DHMT	District Health Management teams
DPS	Deputy Permanent Secretaries
EPI	Expanded Programme on Immunization
GCP	Good Clinical Practice
HDC	Health Data Collaborative
HIV	Human immunodeficiency virus
HMIS	Health Management Information Systems
HR	Human Resource
HTS	HIV Testing Services
ICT	Information and Communications Technology
IDSR	Integrated Disease Surveillance and Response
IHSP	Integrated Health Service Plan
IMCI	Integrated Management of Childhood Illness
IPMS	Integrated Patient Management System
IRM	Insecticide resistance management
IRS	indoor residual spraying
IVM	Integrated Vector Management
LAN	Local area network
M&E	Monitoring and Evaluation
MDR	Multi-drug-resistant tuberculosis
MMR	Maternal mortality ratio
MMRI	Maternal mortality ratio indicators
MOHW	Ministry of Health and Wellness
MRS	Medical Record System
NCD	Non-Communicable Diseases
NDP11	National Development Plan 11
NGO	Non-Governmental Organization
ORS	Oral Rehydration Salts
PIMS	Patient Information Management System
PIU	Performance Improvement Unit
PMTCT	Prevention of mother-to-child transmission
QA/QC	Quality Assurance and quality control
SADC	Southern African Development Community
SDG	Sustainable Development Goals
SRH	Sexual and Reproductive Health
STEPS	STEPwise approach to surveillance
TFR	Total Fertility Rate
UHC	universal health coverage
UHP	Universal Health Care Programme
WHO	World Health Organization

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Executive Summary

1. Introduction

This development of this health sector status review report (2015-2019) is informed by the Integrated Health Service Plan (IHSP) 2010 - 2020. A list of indicators was compiled based on the IHSP and the M&E framework and discussed with stakeholders. Data was collected and analysed on these indicators. A score card for each indicator was prepared. Four colours were used based on how the gap between target and actual was reduced overtime. Green indicated attainment of target or substantial progress, yellow good progress, brown some progress, and red little or no progress.

Colour code				
Reduction in gap between target and actual	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

A validation workshop was also conducted to the data that were collected from the routine HMIS system (DHIS2), programme records, Survey reports, and other key national documents. In addition, qualitative information on key achievements, challenges and priorities, and was collected from key informants. Below is a highlight of selected indicators and findings.

2. Performance of Selected Health Sector Indicators

Health Sector impacts: Mortality	Score
1. Life expectancy has increased from 54 in 2006 to 66.2 in 2017, on course to hitting the target of increasing life expectancy at birth to at least 67.7 by 2030	
2. Crude death rate has reduced substantially, reducing from 11.2 in 2006 to 6.7 in 2017, below the National Population Policy (NPP) target of 9 by 2020.	
3. Maternal Mortality Ratio per 100,000 live births increased from 127 in 2015 to 133.7 in 2018, far above the period target of 94.	
4. Under-5 mortality has increased from 28 in 2011 to 56 in 2017 , above the NPP target of below 29 by 2020	
5. Infant mortality in 2011 was at 17, below the NPP 2020 target of 23, but the rate has since increased to 38 in 2017.	
Fertility, Family Planning, and Adolescent Health	Score
6. Total fertility rate has remained relatively unchanged between 2006 (3.2) and 2017 (3.1) and remains below the NPP target of 3.4.	
7. Teenage fertility rate has increased from 17.8 per 1,000 girls to 27.1, higher than the NPP target of less than 25 by 2020.	
8. Number of adolescents seeking post-abortion care increased almost three-fold, from 132 in 2016 to 386 in 2018.	
9. Total contraceptive prevalence rate in the general population increased slightly from 17.8% in 2016 to 19.7% in 2018. At this rate of increase, the target of 80% is unlikely to be reached.	

Maternal and Newborn Care	Score
10. Number of neonatal deaths increased from 55 in 2016 to 67 in 2019	
11. Proportion of low birthweight infants more than doubled, from 30% in 2016 to 61% in 2019.	
12. Caesarean section as a proportion of all deliveries has moved within the normal range (10-15%), reducing from 20% in 2016 to 15% in 2019 .	
13. Postnatal care within 2 days defined as the proportion of mothers who are visited in their homes (domiciliary) within 2 days after delivery has remained low, at 11% in 2018 from 10% in 2015.	
Immunization	Score
14. BCG, Hep B3, DPT 3, Hib 3, MCV 2, and Rotavirus last dose either reduced or did not change much, staying between 70-79% in 2019, which is below the target of 90%	
15. Tetanus Toxoid containing vaccine coverage is far lower, but there was an improvement in coverage from 45% in 2015 to 58% in 2018 and 2019.	
Child Health and Nutrition	Score
16. Childhood underweight increased from 5.3% in 2016 to 9.8% in 2018, which is further away from the NDP 11 2016 target of below 4%.	
17. Malnutrition rates remained relatively unchanged, increasing slightly from 3.1% in 2015 to 3.2% in 2018.	
18. Diarrhoea rates increased more than four-fold, from 5% in 2015 to 23% in 2018.	
19. The proportion of health facilities with at least 60% of workers managing children trained in IMCI increased from 18% in 2012 to 34.8% in 2017 but this is below the target of having all facilities with at least 60% of staff trained in IMCI.	
20. Proportion of children correctly treated for pneumonia remained the same in 2012 and 2017, at 43%.	
21. Growth Monitoring and Promotion (GMP) attendance fell from 90% in 2015 to 77.6% in 2018.	
22. Vitamin A supplementation coverage increased from 83.8% to 87%, close to the target of 90% .	
Malaria	Score
23. Malaria incidence reduced slightly from 0.15 per 1,000 population in 2015 to 0.12 in 2019, remaining within the target of less than 1 per 1,000 population.	
24. Number of malaria cases reduced from 326 in 2015 to 272 in 2019. The target is zero malaria cases.	
25. Number of malaria deaths increased from 5 in 2015 to 7 in 2019.	
26. Indoor Residual Spraying coverage reduced from 77.7% in 2015 to 74% in 2018, moving away from the target of 100%.	
27. Almost all suspected malaria cases undergo a parasitological test , either using RDTs or blood slides.	

HIV	Score
28. HIV Incidence reduced from 8.3 per 1,000 population in 2016 to 7.4 in 2018.	Green
29. HIV prevalence reduced from 21.2% in 2016 to 20.3% in 2018, although this reduction remains far higher than the target of 10%.	Red
30. Mother to child transmission (MTCT) of HIV reduced from 1.4% in 2015 to 0.64% in 2018, attaining the target of less than 1% MTCT.	Green
31. Early infant diagnosis (EID) increased from 69% in 2015 to 77% in 2018, although lower than the target of 85%.	Yellow
32. Proportion of male partners tested for HIV has remained low, at just below 20% against the target of 24%.	Red
33. Testing for pregnant women increased from 95% in 2015 to nearly hitting the target at 99%.	Green
34. Treatment coverage with ART among people living with HIV/AIDS (PLHIV) increased from 73.8% in 2016 to 84.5% in 2018. This is good progress but remains below the target of 90%.	Yellow
35. Proportion of PLHIV who are virally suppressed among those on treatment remained strong at 93.9% in 2018, which is higher than the target of 90%.	Green
36. Proportion of HIV positive pregnant women on ART increased from 95% in 2015 to 99% in 2019.	Green
Tuberculosis	Score
37. Tuberculosis incidence reduced from 356 per 100,000 population to 300, against the 2015 NDP target of 200 per 100,000 population.	Yellow
38. Deaths from Tuberculosis reduced slightly from 4% in 2015 to 3% in 2017	Yellow
39. Multi-drug Resistance tuberculosis remains high, despite some progress in reducing it from 96 per 100,000 population in 2015 to 91 in 2017.	Red
40. TB case notification reduced from 277 per 100,000 population in 2015 to 240 in 2017, which is less than the NDP target of 270 per 100,000 population.	Red
41. Tuberculosis treatment success reduced from 85% in 2015 to 82% in 2017, moving away from the target of 90%.	Red
42. Tuberculosis cure rate also reduced from 40% in 2015 to 32% in 2017, against a target of 85%	Red
43. Tuberculosis bacteriological coverage reduced from 42% to 32%. This is further away from the target of 90%.	Red
Non-Communicable Diseases, Mental Health and Injuries	Score
44. Hypertension prevalence was 29.4% in 2014 based on the STEPS survey. DHIS2 data, which underestimates prevalence due to underreporting and not being population based, shows an increase in number of cases (prevalence) from 366,264 (17.2%) in 2016 to 565,528 (24.6%) in 2018.	Red
45. Diabetes Prevalence was 5.8% in 2014. DHIS2 data, which underestimates prevalence due to underreporting and not being population based, shows an increase in number of cases (prevalence) from 27,354 in 2014 (1%) to 47,470 (2%) in 2018.	Red
46. Road injuries increased almost two-fold, from 7,193 in 2016 to 13,239 in 2018. Other injuries also increased from 71,843 to 91,020.	Red
47. Number of people with mental disorders increased from 33,598 in 2016 to 46,154 in 2016, an increase of more than 37%.	Red
48. Reported number of suicides reduced slightly from 331 in 2016 to 286 in 2018.	Yellow

Health Financing and Governance	Score
49. Budget absorption/execution rate for the capital budget increased slightly from 62.2% in 2015/16 to 66.5% in 2017/18, but this is still very low.	
50. The share of government spending in total current expenditure has increased from 73% in 2014/15 to 79% in 2017/18.	
51. The share of household health expenditure in total health expenditure has remained low, reducing slightly from 5% in 2014/15 to 4% in 2017/18.	
52. The share of external financing reduced from 7% in 2014/15 to 6% in 2017/18.	
53. The share of spending on primary care has been lower than secondary and tertiary care. Further, share of primary care spending has reduced substantially, from 43% in 2014/15 to 14% in 2017/18	
54. The share of expenditure on health system administration was higher than that of service deliver (60% vs 40%) in 2014/15, but these shares were equal at 50% in 2017/18.	
Human Resources for Health	Score
1. In 2017, Botswana had 39.6 doctors (1.76 specialists) per 100,000 population, which translates to 0.4 doctors per 1,000 population; lower than the WHO benchmark of 1 doctor per 1,000 population	
55. The nursing profession was at 321.8 per 100,000 population or 3.2 per 1,000 population in 2017.	
56. In 2017, Pharmacist were at 6.9 per 100,000 population or 0.069 per 1,000 population while pharmacy technicians were 0.157 per 1,000 population.	
57. Botswana had 4.4 dentists per 100,000 population or 0.04 per 1,000 population and 0.029 medical records officers/clerks in 2017.	
58. There were 75.3 (0.753) health care assistants per 100,000 (1,000) population and 25.6 (0.256) personnel in administration and management in 2017.	
Health Information System and Research	Score
59. Completeness of facility reporting in DHIS2 has generally been low, but substantially improved from 41.4% in 2016 to 71.4% in 2018.	
60. Although most facilities have an electronic patient management system (IPMS or PIMS), only a few facilities (all the 28 public hospitals, 3 Reference Labs, 23 Clinics) had an electronic patient management system that is linked with other facilities (IPMS).	
61. An assessment of data quality at the district/ facility level for immunization programmes revealed a 45%/50% data quality score in 2015.	
Health Infrastructure, Medicines and Medical products	Score
62. Availability of necessary, vital, and essential drugs has reduced from 72% in 2015 to 52% in 2018.	
63. Timely reporting in the logistic management information system increased from 42.6% in 2015 to 55.8%, which is little progress since it is a 23% reduction in the gap between status and target.	
64. Overall reporting rates in the logistic management information system increased significantly from 60.7% in 2015 to 81.2% in 2018.	
65. Compliance to national health quality standards has remained below the target of 60%, increasing slightly by 1 percentage point from 43% in 2015 to 44% in 2018.	

3. Qualitative findings and Conclusions

- Botswana has achieved high levels of performance in key health sector indicators, but there has been little or no progress or change on many key indicators in the past few years, except for HIV indicators which have mostly recorded substantial progress.
- Despite some marginal reduction in incidence, most TB indicators show little or no progress in the past few years. Some reasons given for poor TB indicators include inconsistencies in maintaining equipment and machinery for TB, e.g., GeneXpert machines.
- Teenage pregnancy rates are increasing and it is not clear what could be contributing to this trend.
- Immunization rates have reduced. Challenges in immunization include inadequacies in maintaining the cold chain system, inadequate transport for outreach activities, and data quality challenges that hamper forecasting of vaccine needs.
- There has been little or no progress in reducing Maternal and child mortality and key maternal, child health, and nutritional indicators have not improved as planned. Inadequate progress in reducing childhood malnutrition household has partly been linked to food insecurity, which may affect the effectiveness of the nutritional intervention with key informants indicating that rations provided to children may be consumed by adults.
- There is progress in reducing malaria but outbreaks, coinciding with rainfall patterns, have been observed.
- Although data on NCDs is limited and not of good quality, there appears to be an increase in the trends of hypertension and diabetes. Physical inactivity and unhealthy diet have been highlighted as contributing factors.
- Road injuries have substantially increased and this has been partly attributed to increases in reckless or drunken driving. It is crucial to investigate exactly what may be behind this increase in road injuries, is it road infrastructure, reckless and drunken driven, e.t.c,
- Mental health disorders are also on the increase, and suicide rates remain high.
- For all NCDs, Mental Health and Injuries, the biggest challenge highlighted was the low funding levels as well as under-staffing.
- In terms of health financing, government health expenditure remains the biggest source of health expenditure
- Botswana's expenditure on health is close to the average of upper middle-income countries, although it has comparatively worse health indicators.
- Biggest challenge with financing is inefficiencies including wastages, low budget absorption rates, and leakages.

- The proportion of investment in primary health care services has been on the decline. Low primary health care directly impacts on preventive health care hence a resurgence in clinical cases.
- Stockout rates and low availability of drugs is also a concern. Some of the reasons given for low availability include challenges in procurement, which results in suppliers or manufacturers renegeing on their commitment to supply drugs to Botswana when they find bigger orders, lack of timely feedback of consumption of drugs from health facilities, and staffing shortages at CMS. Inadequate feedback on consumption data from the health facilities was found to hinder forecasting and procurement of medical product, for instance, CMS was not in a position to accurately quantify medical supplies.
- There is a high level of attritions among health workers and health workers to population ratios remain lower than conventional or international standards.
- The existing information systems are underutilized and there are data quality issues. This is as a result of officers not entering their operations data at the point of service, for clinicians not entering data into IPMS. This has led to very low reporting rates whose data does not reflect the level of the services provided.
- The master facility list is outdated. The last time it was updated was in 2016, and it does not capture the new developments of facilities in both the public and private sectors. Updating the master facility list will see inclusivity in the number of health facilities reporting into the systems.
- Awareness of strategy documents like the IHSP was lacking to a section of officers. This implied that it was not in use at those points as a guiding document.

4. Recommendations

- Strategies of improving primary health care should be implemented.
- A mechanism for compulsory submission of consumption data from the health facilities should be enforced. This may include linking restocking with the health products consumption reports.
- Put mechanisms in place for staff retention in order to address the high levels of attrition. It is also highly recommended that this should be followed from an employee satisfaction and work environment survey.
- In order solve the problem of staff placements, the HRH strategy should be implemented.
- Under the health financing, there should be a well outlined prioritization of needs mechanism and stringent audit processes in order to minimize the inefficiencies.
- The current data management systems should be interlinked in a manner that will allow flow and aggregation of data at the higher level which should be available on real time basis. This will entail the investment in the requisite infrastructure, manpower and leadership.
- Health facility mapping should be done in order to update the master facility list. This will net in more data as well as, partly, solving denominator problems.

- An orientation package should be developed for the purpose of inducting new members joining the sector on the guiding documents.
- Legislations governing the operations in the health sector should be exhaustive. This can be packaged through drafting and implementation of Health Act.

1 Introduction

1.1 Background Information

This report presents a review of selected health sector indicators for the years 2015 to 2019. The status review falls within the planning period of the Integrated Health Service Plan (IHSP) 2010 - 2020. The IHSP presents the vision for the improvement of health status and care of the population in the Republic of Botswana up to 2020. The progress of the interventions as well as investments under the IHSP was set to be measured by the National Health Monitoring and Evaluation Plan. This M&E plan outlined measurable indicators for the strategic objectives under the following six pillars of the IHSP:

- i. Service Delivery
- ii. Human Resources
- iii. Health Financing
- iv. Procurement and Logistics
- v. Health Information and Research
- vi. Leadership and Management

However, the M&E framework focuses on a few indicators that are thought to address the strategic objectives of the IHSP. This report expands on these indicators to address operational objectives as well.

1.2 Demography and Population set up

Botswana's population growth has been declining sharply over the years, driven primarily by a reduction in total fertility rate, Table 1. The latest population projection as at 2019 puts the total population at 2,332,817. The life expectancy was estimated at 69.2 years. With 72% of the population living in urban areas, Botswana is among the top five urbanized countries in Sub-Saharan Africa.

Table 1: Trends in selected demographic indicators in Botswana, 1971-2019*

Indicator	1971	1981	1991	2001	2011	2019*
Population	574,094	941,027	1,326,796	1,680,863	2,024,904	2,332,817
Population density per square kilometer	1.0	1.6	2.3	2.9	3.5	4.0
% of population in urban areas	9.0	17.7	45.7	54.2	64.1	72.0
Crude Birth Rate (per 1,000)	45.3	47.7	39.3	28.9	25.7	23.1
Crude Death Rate (per 1,000)	13.7	13.9	11.5	12.4	6.3	1.4
Population Growth Rate		4.7	3.5	2.4	1.9	1.5
Total Fertility Rate	6.5	6.6	4.2	3.3	2.7	2.3
Under 5 mortality Rate (per 1,000 live births)	152.0	105.0	63.0	74.0	28.0	41.6
Infant Mortality Rate per 1000 live births	97.0	71.0	48.0	56.0	17.0	23.6
Life expectancy at birth	55.5	56.5	65.3	55.6	68.0	69.2
Source: Population and Housing Census	*Projected					

Source: Population and Housing Census
*Projected

1.3 Organization of Botswana's Health System

Health care in Botswana is predominantly provided by the Government, constituting 98% of all the health facilities. The country has a health care system with 27 Health Districts. At the national level, the MOHW provides oversight of health services, formulating policies, regulations and norms, standards and guidelines, engages in advocacy and resource mobilization and supervises the overall health care service delivery and management at the district level. Senior leadership of the Ministry is constituted by: the Minister, Assistant Minister, Permanent Secretary, Deputy Permanent Secretaries and Directors. Deputy Permanent Secretaries (DPS) head the departments; with technical support from the Directors. In general, the MOHW comprises five departments:

- i. Health Services Management
- ii. Health Services Monitoring and Evaluation Quality Assurance
- iii. Health Policy, Research and Development
- iv. Health Inspectorate
- v. Corporate Services.

Performance Improvement Unit (PIU) is one of the Ministry's units under Corporate Services which carries out additional monitoring and evaluation functions. Statistics Botswana is a parastatal body responsible for the development and management of official statistics including vital statistics. At the district level, District Health Management Teams (DHMTs) are headed by different cadres of officers. The health districts perform three main functions: administering curative care, delivering preventive care, and providing corporate services. They also carry out supervision of health services in the district. The head of curative services oversees the delivery of health care services in all facilities in the district; the head of preventive services coordinates public health related activities, while the head of corporate services is responsible for managing all resources.

Health services are delivered at four levels; community, health facility, district and the National levels. At the community level, there are 973 mobile stops, while health facilities constitute 318 clinics and 347 health posts. At the district level, there are 7 district hospitals and 16 primary hospitals. At the highest level are 3 national referral hospitals (see Master Health facility list 2016).

Health sector planning in Botswana is aligned with the country's development plans and aspirations. The principal blue print is the National Vision 2036, which is structured on a series of medium-term plans. The National Development Plan 11 (NDP11) that feeds into the vision 2036, and integrates with the Sustainable Development Goals, has a number of health sector priorities, namely: strengthening health promotion interventions; household food security and nutrition; prevention and management (in case already having the disease) of non-communicable diseases; universal coverage of essential health services; and promotion of mental health. In the health sector, we have the Integrated Health Services Plan for 2010-2020 (IHSP) which guides the health sector strategic priorities and operationalizes the National Health Policy. The programmes have also cascaded their planning into programme specific strategic plans. Policies have been formulated to guide the operationalization of these strategies.

1.4 Objectives

1.4.1 The main objective

The overall objective of the health sector status review of selected indicators is to assess progress in the attainment of targets as set out in the IHSP and the M&E framework. The task includes identifying and mapping out the selected health indicators for the period 2015 to 2019.

1.4.2 Specific Objectives

The specific objectives of the task were:

- To review the data available against the indicators in the M&E framework.
- To review the quality of the data
- To carry out systematic analysis of the data available from the different sources (DHIS2, Disease control programs, surveys, etc)
- To prepare score cards for the indicators set out in the M&E framework detailing their levels of performance for the period 2015 to 2019
- To give recommendations on the appropriateness of the set indicator levels given the 10-year experience, and where applicable provide revisions
- To prepare key priority areas of investment, based on the performance of the indicators, for the next planning period

1.5 The approach

This report was developed as a concerted effort between the Ministry of Health and Wellness (MoHW) and the World Health Organization (WHO) through a multistage process. First, a comprehensive list of indicators was assembled and agreed upon by various program officers in the ministry. A meeting was held to review the completeness of the indicator set. Then data collection commenced with MoHW departments, divisions and programmes being involved in providing data on agreed indicators. Officers also provided information on challenges, achievements, and priority areas of investment as key informants. The officers interviewed were from the following departments/ Programmes and units:

1. Health Services Management:

- Malaria programme; Sexual and Reproductive Health (SRH) Programme; Maternal health and new born care programmes; Child health and the Expanded Programme on Immunization (EPI); TB Program; IDSR; NCDs; Nutrition; Mental health; HIV related programmes - Testing Services (HTS) and ART

- Central Medical Services (CMS); Clinical services
2. Health Services Monitoring and Evaluation Quality Assurance
 - Health informatics; Health Statistics Unit; Monitoring and Evaluation
 3. Health Policy, Research and Development
 - Health financing and Research units,
 4. Corporate Services:
 - Health accounts and HR units,
 5. Health Inspectorate

In general, data were collected from the routine HMIS system (DHIS2), programme records, Survey reports, and other key national documents. The DHIS2 data were provided in raw form and required organization (checking for completeness, accuracy and consistency) and tabulations before analysis. Data from the program records was already aggregated and summarized, which limited the scope for quality checks. A preliminary summary of indicators was then presented to the key stakeholders for feedback, which allowed for call backs.

A score card for each indicator was prepared which showed how much the gap between target and actual has been reduced over the review period. If the indicator worsened or the reduction in the gap between actual and target from baseline to the current status is less than 25%, then the indicator performance was coded red, showing little or no progress. The brownish color shows reduction in the gap of between 26 to 50%, indicating some progress. Good progress was good yellow and this was if the gap was reduced by 51 to 75%. A reduction in the gap of more than 76% showed substantial progress or attainment of the target.

Table 2: Score card key

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

After scoring and compilation of the report, a validation workshop was conducted where all stakeholders went through the indicators to check that they reflect what is on the ground.

2 Health Investment Achievements and Performance

2.1 Overview of Health Sector impacts

Main points

- Botswana is on course to achieving its target of increasing life expectancy at birth to at least **67.7 by 2030**; Life expectancy has **increased from 54 in 2006 to 66.2 in 2017**.
- Crude death rate has reduced substantially, reducing **from 11.2 in 2006 to 6.7 in 2017**, below the National Population Policy (**NPP**) **target of 9 by 2020**.
- However, maternal and child mortality has either worsened or not reduced much to attain the targets.
- Maternal Mortality Ratio per 100,000 live births **increased from 127 in 2015 to 133.7 in 2018**, far above the period **target of 94**.
- Under-5 mortality had hit the NPP target of below 29 by 2020 as measured by the 2011 census; it stood at 28. However, the rate has since increased from **28 in 2011 to 56 in 2017**
- Infant mortality in **2011 was at 17**, below the NPP 2020 target of 23, but the rate has since increased to **38 in 2017**.
- Lower measured mortality in the 2011 census has partly been attributed to changes in traditional formula for measuring mortality.

Table 3: Performance of selected demographic indicators in Botswana s

Indicator	Baseline (year, source)	Target (year, source)	Status (year, source)	Comments
Life expectancy at birth (years)	54(2006, BDS)	67.7 (2020, NPP)	66.2 (BDS, 2017)	Achievement in the last 11 years implies target is achievable
Crude Death Rate	11.2 (2006, BDS)	9 (2020, NPP)	6.7 (BDS, 2017)	Target met. Shape decline in crude death rate
Maternal mortality ratio per 100,000 live births	127 (2015, Statistics Botswana)	94 (2015--2020, Statitsics Botswana)	133.7 (2018 Statistics Botswana)	Increase in MMR from baseline. Target has not been met.
Under-5 mortality per 1000 live births***	28 (2011, Popn Census)	29 (2020, National Population Policy)	56 (BDS 2017)	The under five mortality rate risen above target
Infant mortality per 1000 live births***	17(2011, Popn Census)	23 (2020, National Population Policy/ NDP-see BDS)	38 (BDS 2017)	The infant mortality rate has risen above target
Neonatal mortality per 1000 live births	N/A	N/A	N/A	Not collected. Could not be computed from DHS2 due to concerns of underreporting

*** Note that the census is used as baseline while BDS is used for status. This is not ideal given different methodological approaches of census and BDS.

Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

Although Botswana has attained its target of increasing life expectancy and reducing crude death rates, maternal, newborn and child mortality rates have either worsened or not reduced much. The 2011 census shows that the child mortality targets may have been met but they rebounded again in 2017. The Botswana Demographic survey however mentions that the lower mortality rates in the 2011 census may have been partly due to changes in the traditional method of computation. Thus, it is likely that the mortality may not have been lower than target even in 2011.

2.2 HMIS Data quality

Botswana uses DHIS2 as a health management information system (HMIS). The DHIS involves health facilities filling information in various tools for reporting to districts, and the districts to the national level through the DHIS2 software.

Reporting rates in the DHIS2 have been very low, although gradually improving over time, Figure 1. Except for the HIV programme which had higher reporting rates most of the programs facility reporting rates between 2015 and 2019 ranged from 10% to 70%. This implies that data from DHIS2 was not up to the desirable levels of completeness, and so there was triangulation of data from other source, that were available within the Ministry of Health and Wellness. Future reporting using DHIS2 data will have to apply methods that attempt to correct for underreporting by for example looking at coverage rates in surveys.

Figure 1: Facility reporting rates of selected indicators between 2015 and 2019



3 Performance of Selected Health Sector Indicators

3.1 Service Delivery

This section presents highlights of how key health indicators have performed compared to set targets, as per data availability. The outcome indicators of health service delivery are presented in terms of major programmes, starting with Reproductive, Maternal, Newborn, Child and Adolescent Health and Nutrition (RMNCAH&N), then moving on to communicable diseases, and lastly non-communicable diseases, mental health and injuries. A discussion of findings for key challenges and efforts or achievements is integrated in the presentation.

3.1.1. Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCAH) and Nutrition

a. Family planning and Adolescent health

Key points:

- Total Fertility Rate (TFR) has remained relatively unchanged between 2006 (3.2) and 2017 (3.1) and remains below the NPP target of 3.4.
- However, teenage fertility rate has increased from 17.8 per 1,000 girls to 27.1, higher than the national population policy target of keeping teen fertility rate at less than 25 by 2020.
- The number of adolescents seeking post-abortion care increased almost three-fold, from 132 in 2016 to 386 in 2018.
- Total contraceptive prevalence rate in the general population increased slightly from 17.8% in 2016 to 19.7% in 2018. At this rate of increase, the target of 80% is unlikely to be reached.
- Couple years of protection rate also increased between 2016 and 2018.

Table 4: Reproductive and Adolescent Health Indicator performance

Indicator	Baseline (year)	Target (year, source)	Status (year, source)	Comments
Reproductive and adolescent health outcomes				
Total Fertility Rate	3.2 (2006, BDS)	3.4 (2020, NPP 2010)	3.1 (2017, BDS)	Fertility rate unchanged but below target
Teenage fertility rate (pregnancies per 1,000 girls)	17.8 (2016, Programme data and population projections)	25 (2020, NPP 2010)	27.1 (2018, programme data and population projections)	Teenage fertility was below target of the NPP 2010 by 2016, by increased beyond the target in 2018.
Number of Adolescents seeking post-abortion care services	132 (2016, Programme data)		386 (2018, programme data)	Rate of increase implies target not achievable unless drastic measure are taken
Family planning interventions and knowledge				
Total Contraceptive Prevalence Rate (CPR)	17.8% (2016, Programme data)	80% (2030, NPP 2010)	19.7% (2018, Programme data)	Rate of increase implies target not achievable unless drastic measure are taken
Demand satisfied for modern methods (%)	N/A		N/A	BDS to collect this data
Knowledge of modern family planning	N/A	N/A	N/A	
Couple Years of Protection Rate (CYP)	109864 (2016, Programme data)	N/A	112961 (2018, Programme data)	Target not available in any document

Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

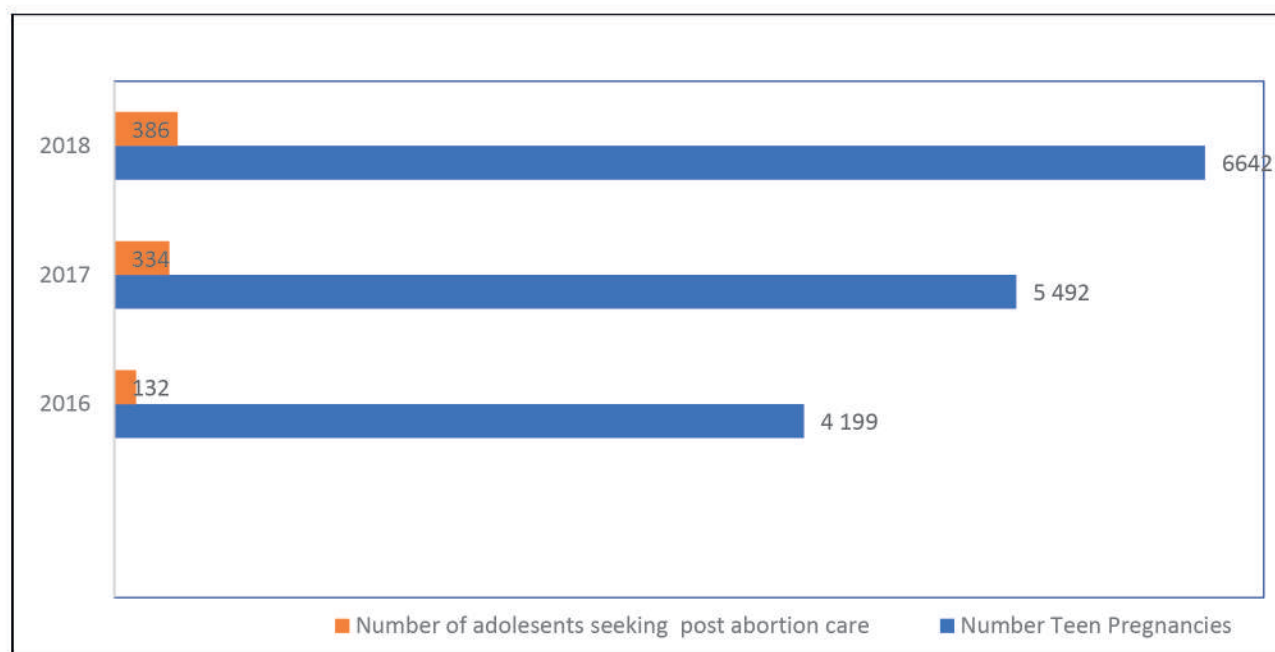
Total Fertility Rate

Total fertility rate (TFR) has declined steadily in Botswana over the past decades. The Population Policy 2010 emphasizes the importance of monitoring the TFR and to introduce appropriate measures to keep it at 3 children per woman, specifically 3.4. The rate remained relatively stable around the target, reducing slightly from 3.2 in 2006 to 3.1 in 2017. The policy highlights the importance of ensuring that fertility does not decline further below replacement given Botswana's low population and threats of population aging and childhood mortality.

Teenage Fertility

Teenage pregnancies are associated with a number of social and health problems including higher chances of pregnancy complications, low birthweight, prematurity, and unsafe abortions. Teenage fertility rate had dropped to below target of the 2010 National Population policy but they reverted to above target in 2018. In absolute terms, the number of teen pregnancies has increased substantially, rising from 4,199 in 2016, to 5,492 in 2017 and then to 6,642 in 2018 (Figure 3). This increase is far higher than the rate of population growth and cannot therefore be attributed to increases in population size over the same period.

Figure 2 Trends in Teen Pregnancies and adolescents seeking post-abortion care, 2016-2018



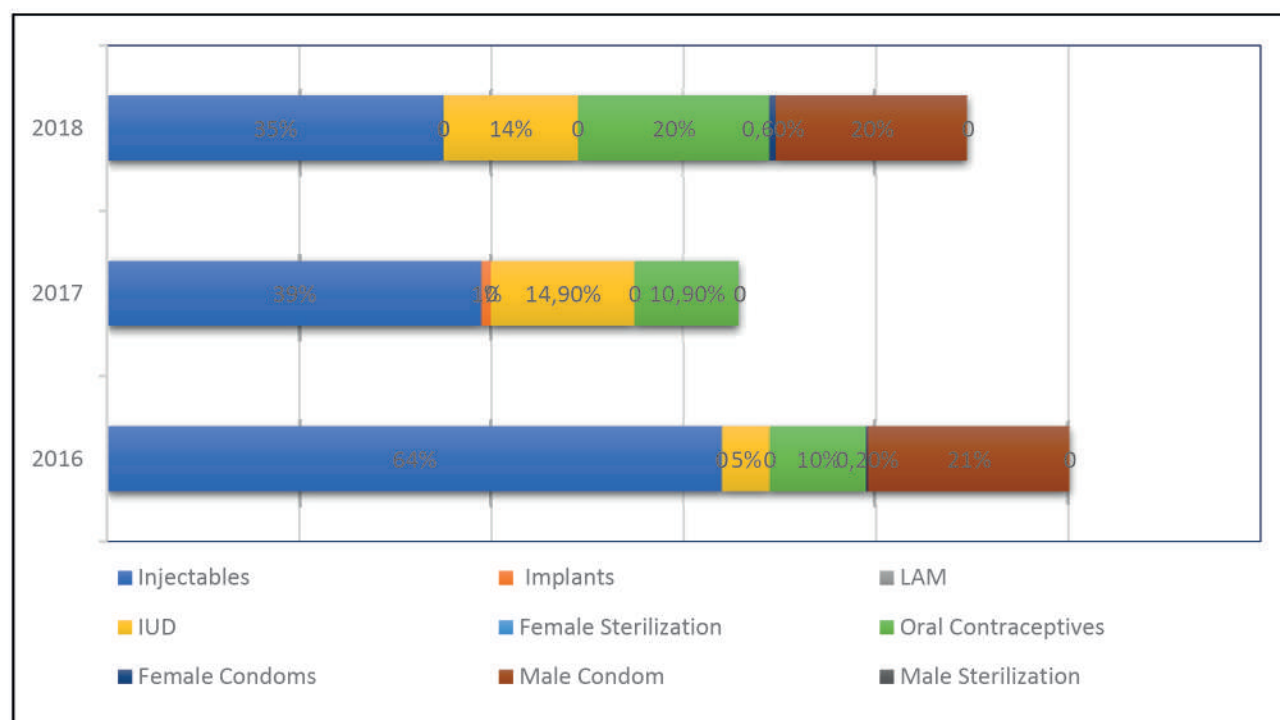
Source: Computed from programme data

Similarly, the number of adolescents seeking post abortion care has been increasing, from 132 in 2016, to 334 in 2017, and 386 in 2018.

Contraceptive use and method mix

With an increase from 17.8% in 2016 to 19.7% in 2018, the rate of increase in contraceptive prevalence rate is far too slow to attain the target of 80% by 2030 provided in the National Population Policy 2010, unless drastic measures are put in place. Access to contraception is important for family planning and prevention of sexually transmitted infections. In terms of method mix, injectables have historically been the most widely used contraceptive with oral contraceptives and IUDs occupying an important share beginning 2017.

Figure 3: Family planning method mix



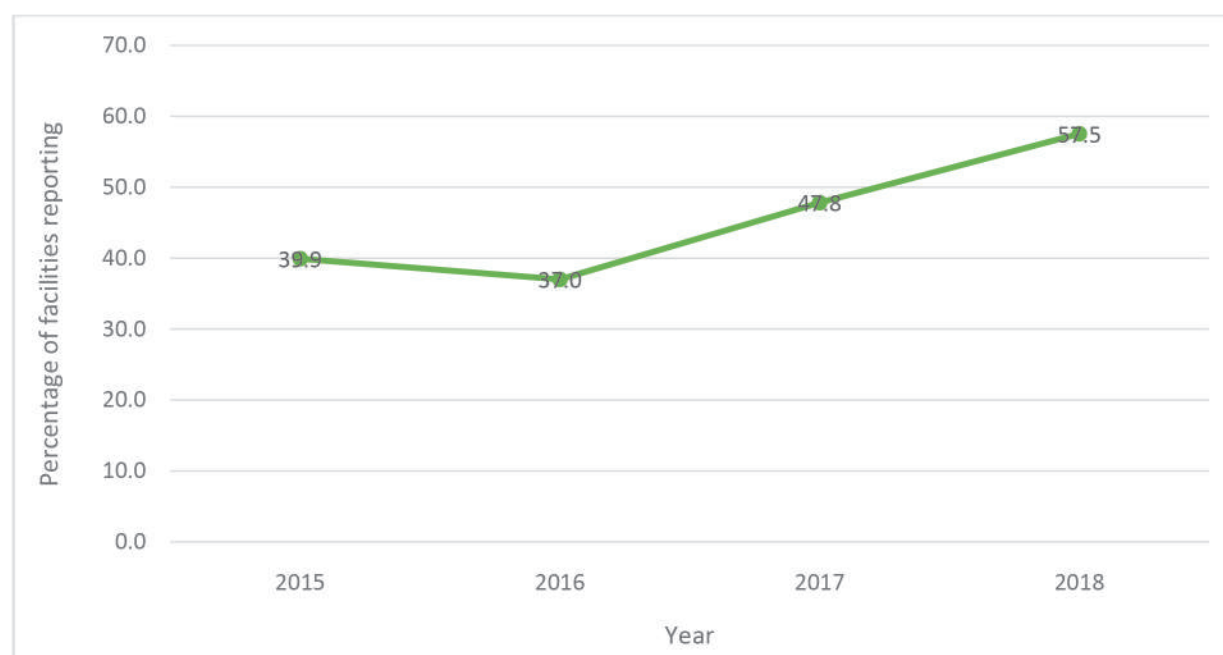
Source: Computed from programme data

The biggest challenges for the family planning and adolescent program highlighted by key informants was the occasional stock out of contraceptives. There were also concerns of lack of quality data to improve program performance.

Data and data quality:

Data on family planning and adolescent health was mainly obtained from the specific units of the ministry. Challenges raised by relevant programme officers include under reporting by health facilities in areas such as teenage pregnancies. For example, Figure 2 shows that the proportion of health facilities reporting on the family planning forms has been low, although it has increased from just under 40% in 2015 to 57.5% in 2018.

Figure 4: Family planning reporting rates: 2015-2017



b. Maternal and newborn care

Key points:

- Maternal Mortality Ratio per 100,000 live births **increased from 127 in 2015 to 133.7 in 2018**, far above the period **target of 94**.
- Number of neonatal deaths increased from **55 in 2016 to 67 in 2019**
- Proportion of low birth weight infants more than doubled, from **30% in 2016 to 61% in 2019**.
- In 2018, only **29.8%** of mothers reported being screened for anaemia during the first ANC visit
- Caesarean section as a proportion of all deliveries has moved within the normal range (10-15%), reducing from **20% in 2016 to 15% in 2019**.
- The proportion of mothers who are visited in their homes (domiciliary) within 2 days after delivery has remained low, at **11% in 2018 from 10% in 2015**.
- Nonetheless, postnatal care at 6 weeks is higher, but has reduced from **76% in 2015 to 68% in 2018**.
- Increases based on DHIS2 should be interpreted with caution

Table 5: Maternal and Newborn Health Indicator Performance

Indicator	Baseline (year, source)	Target (year, source)	Achievement (year, source)	Comments
Maternal and Newborn Care				
Pregnancy outcomes				
Maternal mortality ratio per 100,000 live births	127 (2015, Statistics Botswana)	94 (2019/2020, NDP 11)	133.7 (2018 Statistics Botswana)	Increase in MMR from baseline. Target has not been met.
Number of neonatal deaths	55 (2016, DHIS2)	N/A	67 (2019, DHIS2)	Number of neonatal deaths has increased
Low Birth Weight (% of live births)	30 (2016, DHIS2)	N/A	61 (2019, DHIS2)	Low birth weight has more than doubled in health facilities
Antenatal care				
Anaemia screening coverage of 1 st ANC clients (%)	N/A	N/A	29.8 (2018, MMRI database)	Low coverage. But this is self-reported. The MMRI started collecting data in 2018
1 st Antenatal visit before 14 weeks (%)	N/A	N/A	N/A	Not collected in surveys or HMIS
4+ Antenatal visits before delivery (%)	N/A	N/A	N/A	Not collected in surveys or HMIS
Syphilis screening coverage of 1 st ANC clients (%)	N/A	N/A	N/A	Not collected in surveys or HMIS
Delivery and postnatal care				
Caesarean section rate (%)	19 (2015, DHIS2)	10-15%	15 (2018, DHIS2)	Within normal range
Percentage of institutional deliveries (%)	N/A	N/A	N/A	
Percentage of skilled deliveries (%)	N/A	N/A	N/A	
Postnatal care-home visits within 48 hours after delivery (%)	10 (2015, programme data)	Not set	11 (2018, programme data)	Little or no progress
Postnatal care visit at 6 weeks	76 (2015, DHIS2)	Not set	68 (2018, DHIS2)	Postnatal visits have reduced

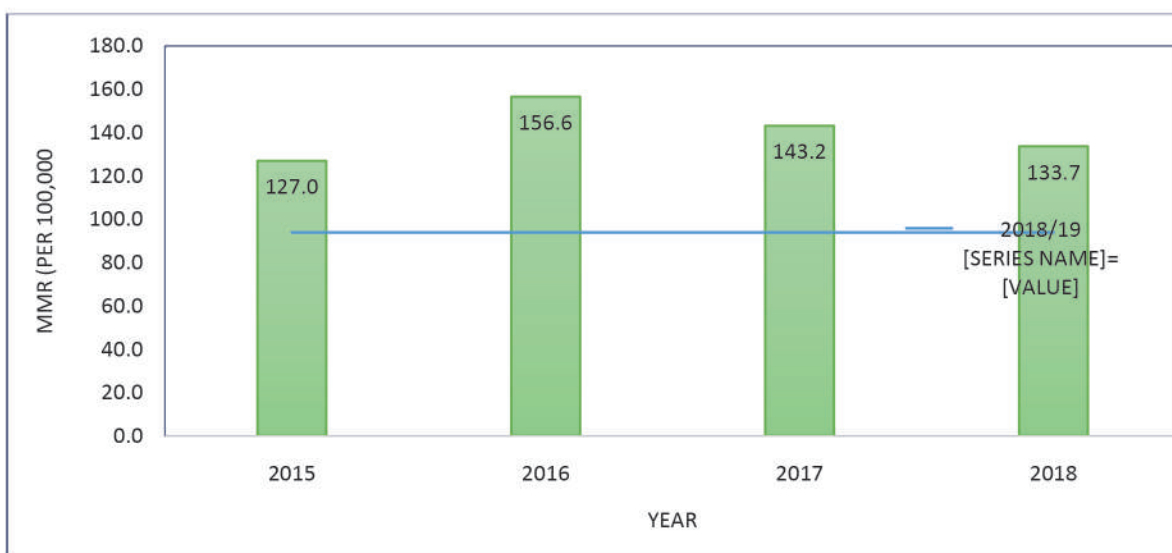
Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

Maternal Mortality Ratio

Maternal mortality ratio remains high in Botswana at 133.7 deaths per 100,000 population in 2017. The target as per the NDP 11 national performance framework for 2019/2020 is 94, although the NPP has a target of not more than 50 deaths per 100,000 population. Nonetheless, maternal mortality has remained far above both these targets. Having historically been reducing until 2015, the ratio increased in 2016, with slight declines afterwards, but remains very high.

Figure 5: Trends in Maternal Mortality ratio (MMR) and target, 2015--2018

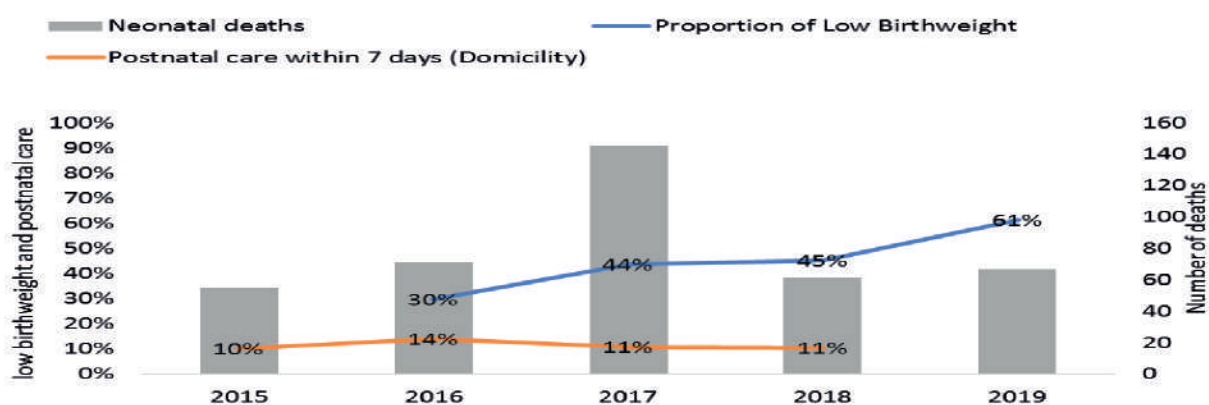


Neonatal Deaths, birth weight, and postnatal care

In line with high maternal mortality, neonatal deaths were increasing beginning 2015 until 2017. It declined in 2018 but the information as of early December shows higher number of neonatal deaths in 2019 compared to 2018. A high-risk factor for child mortality, low birth weight prevalence increased, steadily rising, from 30% in 2016 to 61% in 2019, see Figure 6 below.

Regarding postnatal care (domiciliary), the rate has remained at around 11% over the 2015-2018 period. One of the reasons cited for low numbers of domiciliary was a shortage of transport and staff at the facilities to enhance postnatal care. However, postnatal care at 6 weeks has been relatively higher, standing at 70% in 2019. The rate was 68% in 2018.

Figure 6: Trends in Neonatal deaths, proportion of women in domicility, and child low-birth weight rates



Anemia Screening and Caesarian Section

According to records from the Maternal Mortality Reduction Initiative (MMRI), anemia screening at first trimester remains low, standing at 29.8% in 2018. The rates of caesarian deliveries has reduced, from 20% in 2016 to 15%, which is now within the normal reference range of 10-15%.

c. Immunization

Key points:

- Immunization coverage rates for BCG, Hep B3, DPT 3, Hib 3, MCV 2, and Rotavirus last dose, reduced and stayed between **70-79%**, which is below **the target of 90%** of the Comprehensive immunization program review (CIPR).
- Coverage for Tetanus Toxoid containing vaccine has been far lower, but there was an improvement in coverage from 45% in 2015 to 58% in 2018 and 2019.
- Polio 3 (OPV or IPV) vaccine coverage remained relatively unchanged, with coverage slightly increasing from 74% in 2015 to 76% in 2018.

Table 6: Immunization programme Indicator Performance

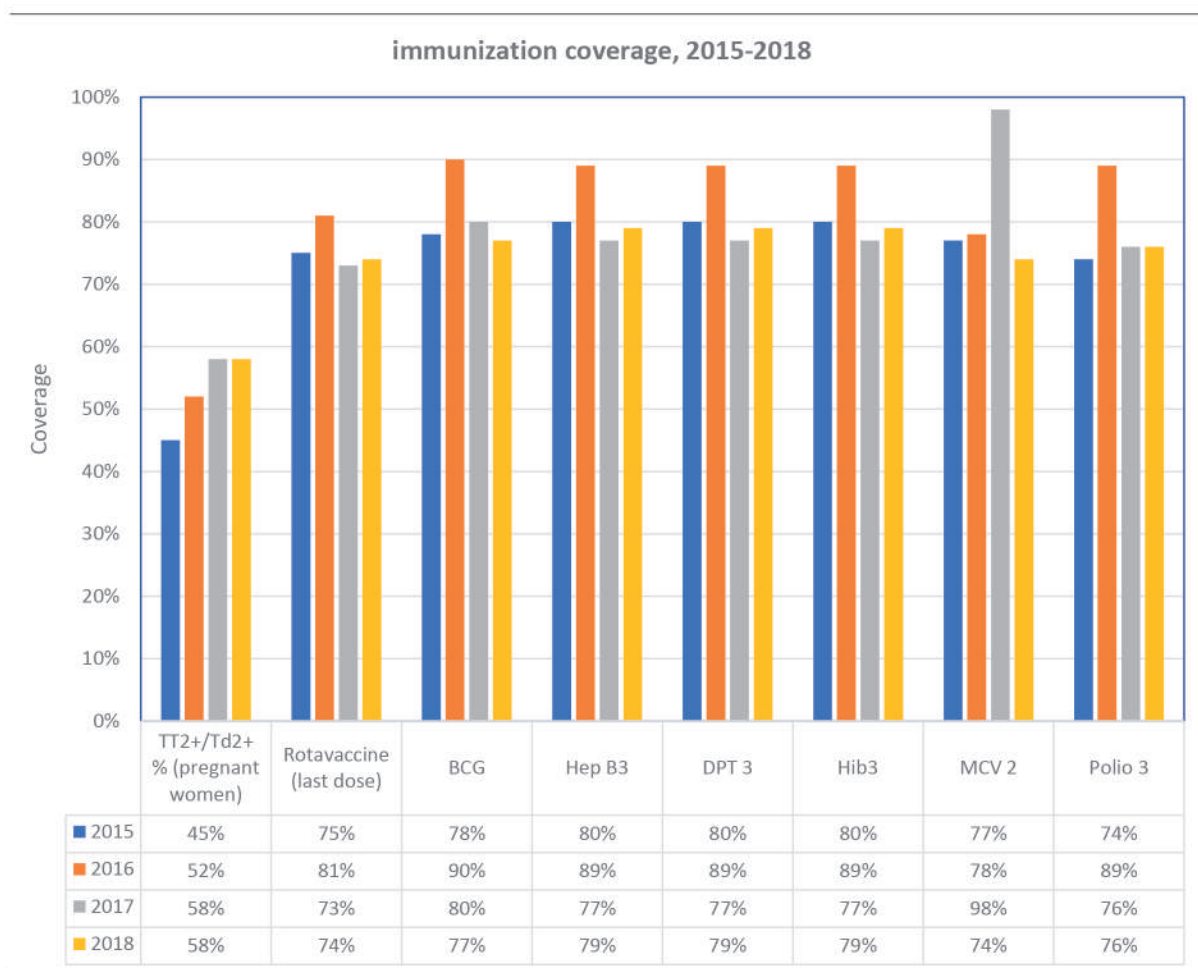
Indicator	Baseline (year, source)	Target (source)	Status (year, source)	Comments
BCG coverage	78 (2015, Programme data)	90 (CIPR)	75 (2019, programme data)	lower or flattening coverage
Tetanus Toxoid containing vaccine (TT2+/Td2+)	45 (2015, Programme data)	90 (CIPR)	58 (2018, programme data)	Some improvement but still too low to target
Polio 3 (OPV or IPV)	74 (2015, programme data)	90 (CIPR)	76 (2018, programme data)	Coverage relatively unchanged
Hep B3	80 (2015, programme data)	90 (CIPR)	74 (2019, programme data)	
DPT 3	80 (2015, programme data)	90 (CIPR)	79 (2019, programme data)	
Hib 3	80 (2015, programme data)	90 (CIPR)	79 (2019, programme data)	
MCV 2	77 (2015, programme data)	90 (CIPR)	79 (2019, programme data)	flattening coverage
Rotavirus last dose	75 (2015, programme data)	90 (CIPR)	74 (2019, programme data)	
Fully immunized coverage (%)	N/A	N/A	N/A	
Percentage of girls 9-13yrs vaccinated with HPV	N/A	N/A	N/A	
MCV 2	77 (2015, programme data)	90 (CIPR)	79 (2019, programme data)	flattening coverage

Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

The performance of all immunization programs has not been good. This raises concerns that the population may lose head immunity which could lead to outbreak of diseases such as diarrhea, pertussis, etc. Tetanus Toxoid 2+ (TT2+) is the only indicator that showed some improvement from 45% in 2015 to 52% in 2016 and then to 58% in 2017. But the rates stayed the same in 2018.

Figure 7: Trends in immunization coverage, 2015-2018



Other vaccines such as rotavirus vaccine, BCG, Hep B3, DPT3, Hib3, and Polio 3 experienced a considerable increase in coverage in 2016 ranging between 81 and 90%, hitting the 90% target specified in the comprehensive immunization program review (CIPR). The program achieved some major milestones with these increased coverages, including the introduction of new vaccines and coming up with a policy on Expanded Programme on Immunization in 2016 and a Multi-year plan for the years 2018 to 2022. Nonetheless, immunization coverage rates have fallen in recent year, beginning in 2017, and have remained low in 2018. There is need to maintain the momentum so as to keep coverage levels high. Some of the challenges faced in the immunization program include issues with maintaining the cold chain system, inadequate transport for outreach activities, and ensuring quality of the data to enable forecasting of vaccine needs, which contributes to stockouts. The ministry has now developed a cold chain expansion and replacement plan, which is yet to be implemented.

d. Child Health and Nutrition

Key points:

- Childhood illness and under nutrition indicators did not change much between 2015 and 2018
- Childhood underweight **increased from 5.3% in 2016 to 9.8% in 2018**, which is further away from the NDP 11 2016 target of reducing underweight prevalence to **below 4%**.
- Rates of malnutrition remained relatively unchanged, increasing slightly from **3.1% in 2015 to 3.2% in 2018**.
- Rates of diarrhoea increased more than four-fold, **from 5% in 2015 to 23% in 2018**.
- Pneumonia rates were at **2% in 2018**.
- The proportion of health facilities with at least 60% of workers managing children trained in IMCI increased from **18% in 2012 to 34.8% in 2017**, which is still far below the target of having all facilities with at least 60% of staff trained in IMCI.
- The proportion of children who were correctly treated for pneumonia remained the same in **2012 and 2017, at 43%**.
- The proportion of children correctly treated for diarrhoea in 2017 was **3%**.
- Growth Monitoring and Promotion (GMP) attendance fell from **90% to 77.6%**.
- The percentage of rations distributed in **2015 and 2018 remained unchanged at 60%**.
- However, Vitamin A supplementation coverage increased from **83.8% to 87%, close to the target of 90%**.
- Increases based on DHIS2 should be interpreted with caution

Table 7: Child Health and Nutrition Indicator Performance

Indicator	Baseline (year, source)	Target (year, source)	Status (year, source)	Comments
Childhood illnesses and under nutrition				
Children underweight	5.3% (2016, DHIS 2 and programme records)	4 (2016, NDP)	9.8% (2018, DHIS 2 and programme data)	The rate above target and almost doubled between 2016 and 2018 (5.3 to 9.8%)
Children with malnutrition	3.1% (2015, programme records)		3.2% (2018, programme records)	Moderate or severe malnutrition has slightly increased or remained relatively unchanged
Prevalence of under-five Diarrhoea (%)	5% (2015, programme records)		23% (2018, programme records)	Diarrhoea prevalence jumped up more than four-folds
Prevalence of under-five Pneumonia (%)			2% (2018, programme records)	No records in earlier years
Stunting	N/A	N/A	N/A	
Childhood nutrition and intervention coverages				
Health facilities with at least 60% of workers managing children trained in IMCI	18% (2012, IMCI Facility survey)	100% (WHO recommendation)	34.8% (2017, IMCI Facility Survey)	Although gap between status and target has been reduced, the reduction in the gap is not substantial and the indicator remains far below target
Children correctly treated for pneumonia	43% (2012, IMCI Facility survey)		43% (2017, IMCI Facility survey)	Correct treatment very low and unchanged
Children correctly treated for diarrhea	N/A		3% (2017, IMCI Facility survey)	
Vitamin A (first dose) (%)	83.8 (2015, Programme records)	90 (CIPR)	87 (2019, programme records)	Good Progress. Almost hitting target
Proportion of parents with malnourished children attending GMP	90% (2015, programme records)		77.6% (2018, program records)	
Proportion of malnourished children receiving rations	60% (2015, programme records)		60% (2018, program records)	
Exclusive breastfeeding 0-6 months/ 0-4 months (%)			6 / 77.7 (2017, BDS)	Exclusive breastfeeding 0-6 months is very low, but much higher upto 4months. Only collected in BDS 2017 (not 2006)
Breastfeeding initiated within 1 hour of birth (%)			60 (2017, BDS)	Not collected in BDS 2006

Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

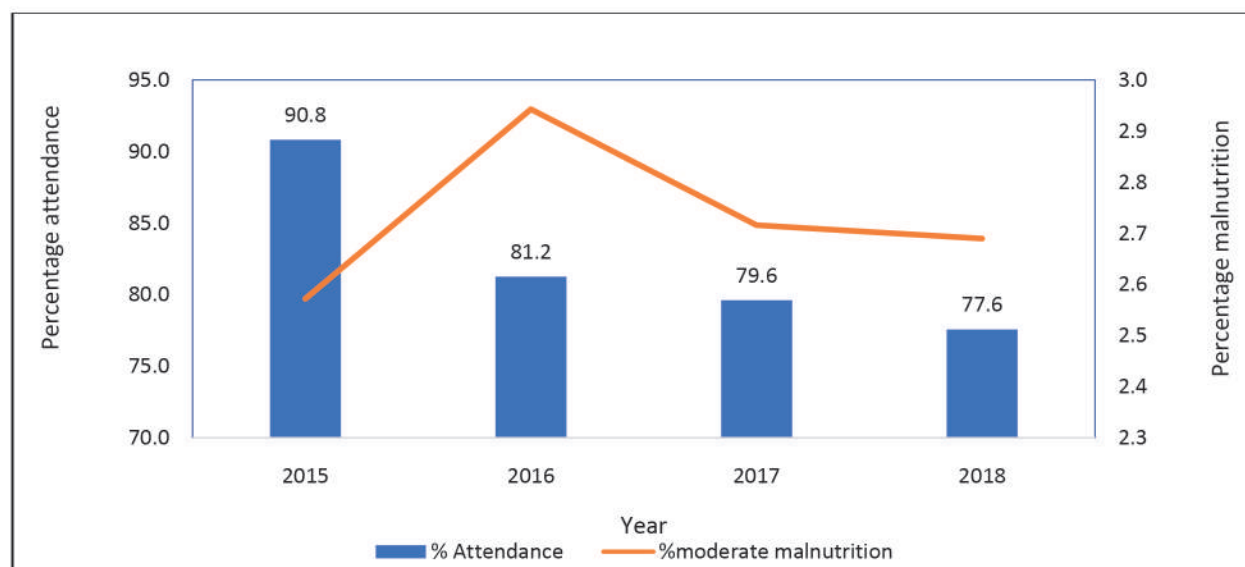
Child health indicators and treatment coverage

Child health indicators have not improved in the past few years. Pneumonia has remained high while diarrhea rates have increased more than four-fold between 2015 and 2018. Pneumonia and diarrhea are the leading causes of childhood illness and death in Botswana (NDP 11). Key informants reiterated that increased diarrhea may partly be attributed to less than optimal immunization program and poor feeding practices. For example, only 6% of mothers were exclusively breastfeeding in 2017. Poor hygiene and early weening may have an influence on diarrhea. In addition, correct treatment of pneumonia and diarrhea remains a challenge. An important concern is that, in 2017, only about 34.8% of the health facilities had more than 60% of their staff trained in integrated management of childhood illnesses (IMCI). This was an increase from 18% in 2012, but still far below the target of 100%. As can be expected, only 43% of children attending health facilities were correctly treated for pneumonia in 2012 and this remained the same in 2017, showing that no progress was made in 5 years. Correct treatment of diarrhea was even lower, with only 3% of the children correctly treated. Key informants highlighted staff attrition as one of the challenges in the child health program which poses challenges to training as those who are trained in IMCI leave. However, the program has come up with an IMCI training component for students still in health training Institutes so that all health workers are trained. In-service training has also been strengthened and activities to involve the community such as awareness and advocacy during the child health weeks in May and November.

Childhood nutrition indicators and intervention coverages

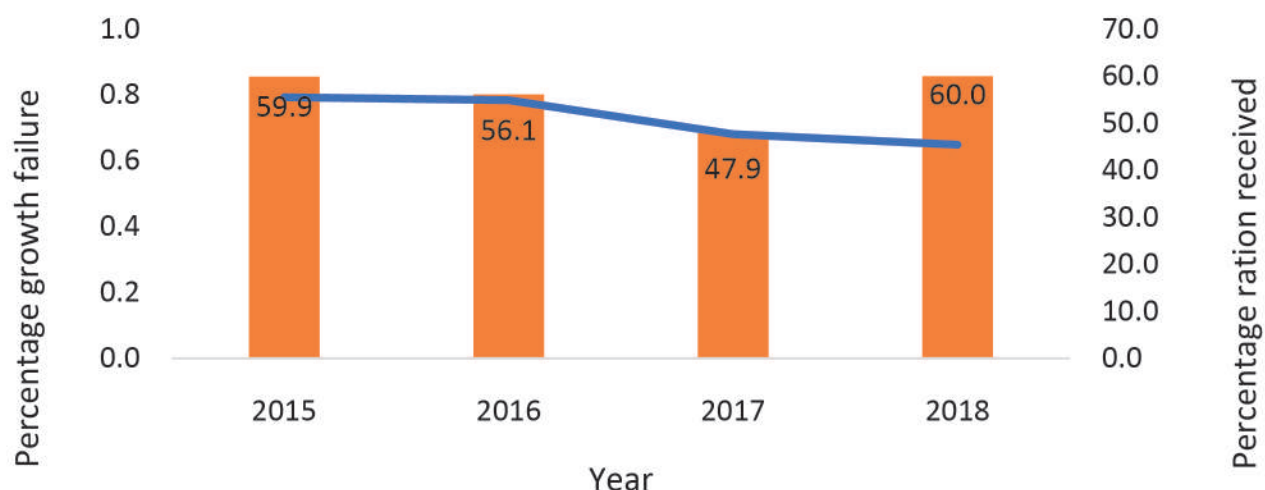
Childhood nutrition indicators have also not been doing well. Childhood underweight increased almost two fold from 5.3% in 2016 to 9.8% in 2018 against the NDP target of 4% by 2016. Severe or moderate malnutrition has also remained relatively unchanged rising slightly from 3.1% in 2015 to 3.2% in 2018. Moderate malnutrition alone increased from about 2.6% in 2015 to 3.1 in 2016 levelling off to around 2.7% in 2017 and 2018, as shown in Figure 8 below. These nutritional outcomes have been accompanied by a drop in the percentage of mothers attending Growth Monitoring and Promotion (GMP) at the under-5 clinic from around 90.8% in 2015 to 81.2% in 2016 and 79.6% in 2017. The attendance was 77.6% in 2018. It is unclear why attendance has been reducing overtime.

Figure 8: Percentage attendance to clinic versus under 5 moderate malnutrition



Among those with malnutrition, the percentage of those receiving rations was reducing gradually from around 60% in 2015 down to 47.9% in 2017, Figure 9. But the proportion has since returned to 60% in 2018. Percentage of children with growth failure has reduced slightly from 0.8% in 2015 to around 0.7% in 2018.

Figure 9: Percentage of under 5s receiving ration Vs growth failure



One of the challenges faced by the child health programme was monitoring trained nurses on whether they are following the guidelines. Key informants also indicated that household food insecurity may affect the effectiveness of the nutritional intervention with others indicating that rations provided to children may be consumed by adults. Other factors affecting the nutrition status were diseases/infections (e.g. intestinal worms, diarrhea, malaria, TB, HIV AIDS), poor sanitation and food hygiene, inadequate maternal and care giver education.

On the bright side, Vitamin A supplementation coverage increased from 83.8% in 2015 to 87% in 2018, close to the target of 90%. This supplementation is important for preventing and controlling Vitamin A deficiency for children 6-59 months and regulation on salt iodization of baby and young child foods.

3.1.2. Communicable Disease

a. Malaria

Key points:

- Botswana is in the process of eliminating Malaria. The incidence of malaria reduced slightly from **0.15 per 1,000 population in 2015 to 0.12 in 2019**, remaining within the target of less than **1 per 1,000 population**.
- In line with reduced incidence, the number of malaria cases reduced from **326 in 2015 to 272 in 2019**. The target is **zero malaria cases**.
- The number of malaria death increased from **5 in 2015 to 7 in 2019**.
- Coverage of Indoor Residual Spraying reduced from **77.7% in 2015 to 74% in 2018**, moving away from the **target of 100%**.

- Nonetheless, Botswana has managed to make sure that all suspected malaria cases undergo a parasitological test, either using RDTs or blood slides. Most tests (**more than 95%**) are conducted using RDTs.
- Increases based on DHIS2 should be interpreted with caution

Table 8: Malaria Programme Indicator Performance

Indicator	Baseline (year)	Target (year, source)	Status (year, source)	Comments
Malaria morbidity and mortality				
Malaria incidence per 1,000 population	0.15 (2015, DHIS2)	<1 (2019, NMSP)	0.12 (2019, NMEP)	
Number of Malaria cases	326 (2015, programme records)	0 (2019, NMSP)	272 (2019, Programme data)	Decrease in cases. Some progress but target is to have zero cases.
Number of Malaria deaths	5 (2015, program data)	0 (2019, NMSP)	7 (2019, Programme data)	Increase in cases. Target is to have zero deaths. 2019 DHIS2 data shows 13 deaths.
Malaria intervention coverage and testing				
IRS: percent of households reached in past 12 months	77.7% (2015, programme records)	100% (2019, NMSP)	74% (2018, programme records)	reduction in coverage, more effort required to hit 100% target in 2019.
Proportion of suspected malaria cases that had a parasitological test	RDT 98.6 (2017, DHIS2)	100% (2019, NMSP)	99% (2019, DHIS2)	lab testing of suspected cases seems to meet target
	Blood slide 12.0 (2017, DHIS2)		46% (2019, DHIS2)	
Proportion of confirmed malaria cases were appropriate treatment is given according national guidelines		100% (2019, NMSP)	66% (2019, DHIS2)	Data quality issues

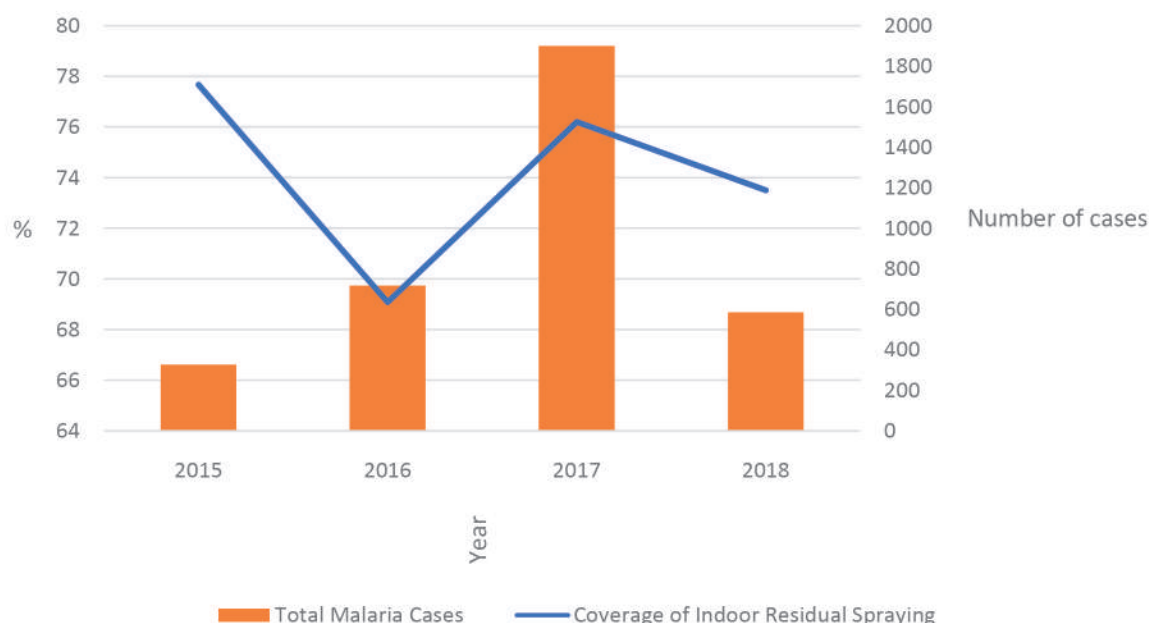
Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

Botswana has achieved tremendous success in the last few years in bringing down malaria and now has a goal of achieving malaria elimination. A number of initiatives have been put in place, both at the strategy and implementation stages. These include: tracking individual cases from diagnosis to recovery, roll out of the community driven approach for malaria elimination called community acting together to eliminate malaria (CATTEM) approach.

Importantly, Botswana has achieved the target of bringing malaria incidence to below 1 per 1,000 cases. The incidence decreased from 0.15 in 2015 to 0.12 in 2019. Although malaria cases have been between 2015 and 2017, with a huge outbreak in 2017, the cases have been reducing since, standing at 272 cases in 2019 (Figure 10). Number of malaria deaths increased from 5 in 2015 to 7 in 2019. This is against a target of zero malaria cases and deaths.

Figure 10: Trends in malaria cases and coverage of Indoor Residual Spraying, 2015-2018



The main intervention for the malaria program has been the Indoor Residual Spraying (IRS) program. However, coverage rates of IRS remains at around 70-76%. More efforts are needed to investigate and address factors that hinder higher coverage. In order to strengthen gains in elimination, the malaria program developed and rolled out the Integrated Vector Management (IVM) plan in 2018. The Malaria program is guided by the 2018-2023 strategic plan.

b. HIV/AIDS

Key points:

- There has been a reduction in the incidence of HIV from **8.3 per 1,000 population in 2016 to 7.4 in 2018**.
- The prevalence also reduced from **21.2% in 2016 to 20.3% in 2018**, although this reduction was too low and the prevalence remains far higher than **the target of 10%**.
- On the good side, Botswana has managed to reduce mother to child transmission (MTCT) from **1.4% in 2015 to 0.6% in 2018**, attaining the **target of less than 1% MTCT**.
- Early infant diagnosis also increased from **69% in 2015 to 77% in 2018**, which is good progress although lower than the **target of 85%**.
- Testing for pregnant women also increased from 95% in 2015 to nearly hitting the target at 99%.
- The proportion of male partners tested for HIV has **remained low, at just below 20% against the target of 24%**.

- Treatment coverage for ART among people living with HIV/AIDS (PLHIV) increased from **73.8% in 2016 to 84.5% in 2018**. This is good progress but remains **below the target of 90%**.
- The proportion of PLHIV who are virally suppressed among those on treatment remained strong at 93.9% in 2018, which is higher than the target of 90%.
- Almost all (99%) HIV positive women were on ART in 2018, up from 95% in 2015.

Table 9: HIV, HTC, PMTCT, and ART programme indicator performance

Indicator	Baseline (year)	Target (year, source)	Status (year, source)	Comments
HIV/AIDS burden				
HIV incidence per 1,000 population	8.3 (2016, UNAIDS)		7.4 (2018, UNAIDS)	
HIV prevalence among 15-59 years	21.2 (2016, UNAIDS)	10% (2016, NDP)	20.3 (2018, UNAIDS)	Little or no progress
MTCT rate	1.4 (2015, Programme data)	<1%	0.6 (2018, Programme data)	Target attained. Substantial progress
Early Infant Diagnosis (EID)	69 (2015, programme data)	85%	77 (2018, Programme data)	Good progress towards target
Testing				
Testing rate for pregnant women	95 (2015, programme data)	100 (programme data)	99 (2018, Programme data)	Target almost attained. Substantial progress
Male partners tested (%)	19 (2015, programme data)	24%	18 (2018, Programme data)	No progress
Treatment				
Number of people on ART	297,729 (2016, programme records)		316553 (2018, programme records)	
ART coverage among PLHIV	73.8% (2016, Programme records)	90%	84.5% (2018, Programme records)	Good progress towards target, more needs to be done
Viral load suppression among PLHIV	93.7% (2015, IPMIS)	90%	93.9 (2018, IPMS)	Slight increase, still above target
HIV-positive women receiving ART for PMTCT	95 (2015, Programme data)		99 (2018, Programme data)	

Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

HIV incidence reduced from 8.3 per 1,000 individuals in 2016 to 7.4 in 2018. The prevalence however remains high, at 20.3% in 2018, against an NDP target of 10% by 2016. It is important however to mention that this is a very ambitious target and it is unclear how such a target would be epidemiologically possible given non-negligible incidence rates and the high scale up of treatment which increases longevity of people living with HIV. Nonetheless, the HIV testing services (HTS), Prevention of Mother to Child Transmission (PMTCT), and the Anti-Retroviral Therapy (ART) have managed to sustain high levels of success in terms of testing and treatment outcomes. Mother to child transmission has been driven to 0.64%, within the target of less than 1%, and early infant diagnosis has increased from 69% in 2015 to 77% in 2018, approaching the target of 85%, and testing rate for pregnant mothers is 99%. However, male partner testing remains very low, at 18%.

The proportion of people living with HIV (PLHIV) who are on ART increased from 73.8% in 2016 to 84.5% in 2018. ART has been rolled out to all facilities with nurses being trained on prescribing ART. In addition, 99% of pregnant women are on ART. Infant formula is given freely to HIV exposed babies. Among all PLHIV, viral suppression has remained strong, rising slightly from 93.7% in 2015 to 93.9% in 2018, above the target of 90%.

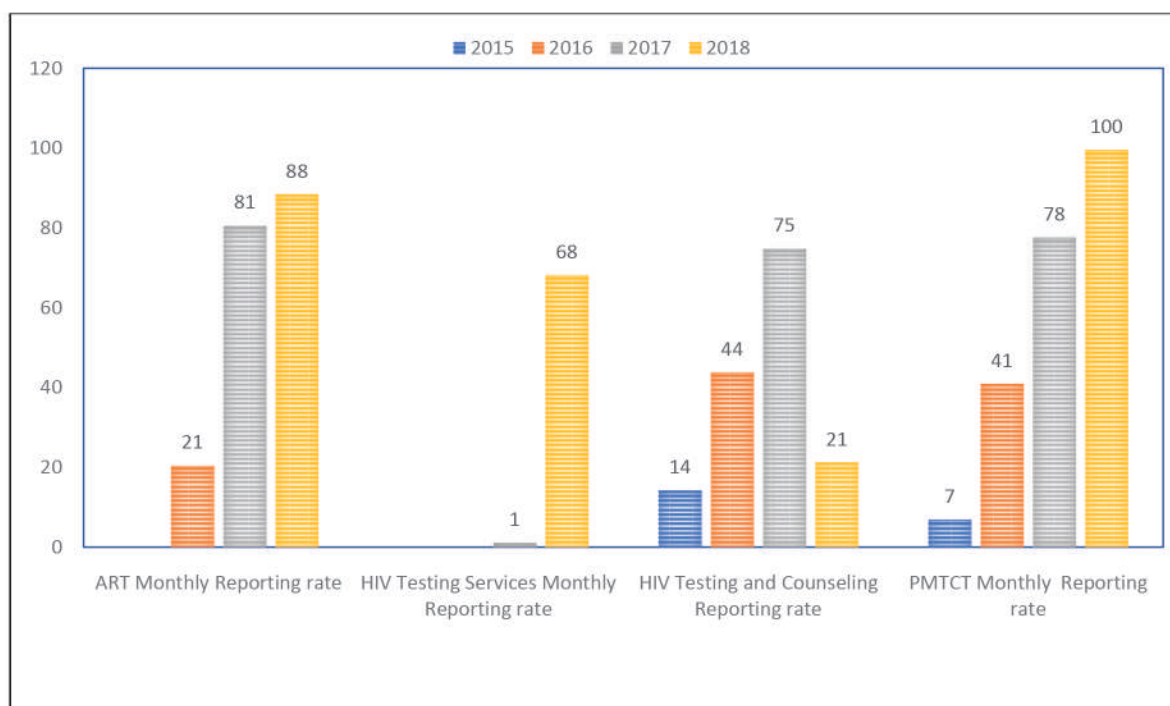
Key informants have highlighted the strong performance of the HIV program and hopeful in the attainment of the 90-90-90 goal which calls for ensuring that at least 90% of PLHIV know their status, 90% of those diagnosed to be put on treatment, and 90% of those on treatment to be virally suppressed. The plan for Botswana is to raise the bar and work toward a 95-95-95 goal. An important milestone has been the extension of free ART to PLHIV who are not citizens. These people were initially not entitled to free treatment and key informants emphasized that such a population would have contributed to driving up HIV incidence had they not been allowed to access free treatment. For the PMTCT programme, there is also an issue of loss to follow-up of PMTCT clients, which may be related to less than perfect linkage to care or clients accessing services from other facilities without the initial facility they were attending knowing.

Data and Data Quality:

The biggest challenge for the HIV program is data and data quality issues. Key informants mentioned that there are inconsistencies in reporting across districts and this was partly due to partners, whose goals are short term, and needed data in some districts. Another challenge, for example for the PMTCT programme, was the data quality issues emanating from the overreliance on paper-based reporting at the facility level.

The HIV program has experienced an increase in facility reporting rates in the DHIS2, with 88% reporting for the ART form and 100% for the PMTCT form. The form for testing was changed in 2017/18 from HIV testing and counseling (HTC) to HIV testing services (HTS) form. In 2018, reporting rates for HTS were at 68% while HTC was at 21%, giving an overall reporting rate of 89%.

Figure 11: Facility reporting rates for HIV programmes, 2015--2018



c. Tuberculosis

Key points:

- Tuberculosis incidence reduced from 356 per 100,000 population to 300, which was higher than the 2015 NDP target of 200 per 100,000 population.
- Death rate from tuberculosis reduced from 4% in 2015 to 3% in 2017.
- Multi-drug Resistance tuberculosis remains high, despite some progress in reducing it from 96 per 100,000 population in 2015 to 91 in 2017.
- TB case notification reduced from 277 per 100,000 population in 2015 to 240 in 2017.
- However, TB treatment success reduced from 85% in 2015 to 82% in 2017, moving away from the target of 90%.
- The cure rate also reduced from 40% in 2015 to 32% in 2017, against a target of 85%.
- Similarly, bacteriological coverage reduced from 42% to 32%. This is further away from the target of 90%.

Table 10: Tuberculosis Programme Indicator Performance

Indicator	Baseline (year, source)	Target (year, source)	Status (year, source)	Comments
Tuberculosis				
TB incidence rate / TB cases per 100,000 population	356 (2015, Programme data)	200 (2015, NDP)	300 (2017, Programme data)	Marginal reduction in incidence
TB death rate	4% (2015, Programme data)		3% (2017, Programme data)	Some progress in reducing death rate
MDR TB Incidence per 100,000 population	96 (2015, Programme data)		91 (2017, Programme data)	Rate declined moving away from target
TB notification rate (per 100,000 population)	277 (2015, Programme data)	270/100,000 (2017/2018, NDP)	240 (2017, Programme data)	Rate declined moving away from target
TB treatment success rate	85% (2015, Programme data)	90% (Programme information)	82% (2017, Programme data)	Rate declined moving away from target
TB cure rate	40% (2015, Programme data)	85% (Programme information)	32% (2017, Programme data)	Rate very low and moved away from target
Bacteriological coverage	42% (2015, Programme data)	90% (Programme information)	27% (2017, Programme data)	
TB treatment coverage / case detection per 100 incidence case				
Multi-drug resistance: successfully treated cases (%)				

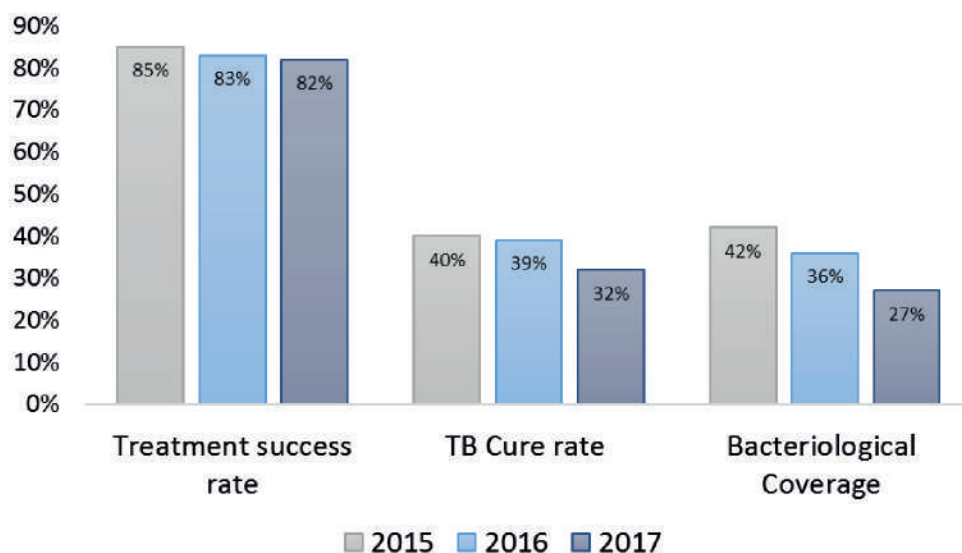
Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

Botswana has recorded some progress in reducing TB incidence, from 356 per 100,000 population in 2015 to 300 in 2017. However, this is still higher than the NDP target of reducing TB to less than 200 per 100,000 population by 2015. In addition, MDR TB remains high, at 91 per 100,000 population in 2017, which is a slight reduction from 96 in 2015. Key informants have indicated that among the contributing factors for high levels of MDR TB are changes in treatment protocol that are not tailored to the Botswana case, and social-cultural factors. Nonetheless, Botswana has managed to roll out GeneXpert for TB diagnosis around the country. Decentralized models of care, where there is a treatment supporter in the community for TB treatment, have also been implemented. In this way, patients don't need to go to the hospital. This presents a number of advantages, including reducing overcrowding and lowering transportation and time costs for the patients. In addition, the TB programme managed to achieve high coverages for comorbidities by improving the HIV testing rates among the presumptive cases.

In terms of other treatment outcomes, treatment success rate, TB cure, and bacteriological coverage have been progressively reducing from 2015, as seen in Figure 12 below. One of the reasons highlighted for the low cure rate, standing at 32% in 2017, is that there has not been enough success in collecting sputum after a client has completed treatment.

Figure 12: Trends in treatment success rates, cure rates, and bacteriological coverage, 2015-2017

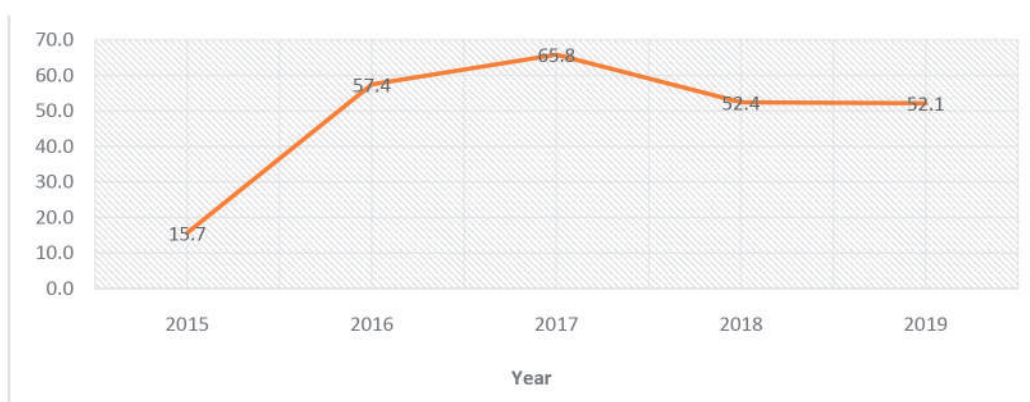


Another challenge that is experienced in the TB programme is that the maintenance of equipment and machines is not up to the standard. For example, at the time of collecting data for this report in December, the contract for the company contracted to maintain GeneXpert had expired a few months prior. Supervision visits to health facilities were not adhered to, partly due to transport challenges.

Data and Data Quality:

The TB program also experienced challenges with data quality and some of this could be partly explained by the fact that the program uses an information system that is web-based, but some facilities have limited or no internet connectivity at all. Some other activities have included the harmonization of data tools with the partners in order to improve data quality and reduce duplication. However, facility reporting rates for the TB program in DHIS2 have remained low. Almost 50% of the facilities did not send TB monthly reports through the DHIS2, Figure 13. There is need to put in place measures that will ensure accountability among staff in order to improve reporting.

Figure 13: TB monthly form facility reporting rates



3.1.3. Non-Communicable Diseases, Mental Health and Injuries





Key points:

- The STEPS survey put the prevalence of hypertension at 29.4 in 2014. DHIS2 data shows that there were 366,264 cases of hypertension in 2016, and the number increased to 565,528 in 2018. As a proportion of the population, this is an increase from 17.2% to 24.6%. It appears though that some of this increase may be due to increased reporting or over-reporting (e.g., an individual maybe reported more than once, e.g., repeat or follow up visits)
- Prevalence of diabetes was 5.8% in 2014. According to DHIS2, the cases of diabetes increased from 27,354 in 2014 to 47,470 in 2018. Using population projection, this translates to an increase from 1% to 2%.
- Road injuries increased almost two-fold, from 7,193 in 2016 to 13,239 in 2018. Other injuries also increased from 71,843 to 91,020.
- There was an increase in number of people with mental disorders, from 33,598 in 2016 to 46,154 in 2016, an increase of more than 37%.
- Reported number of suicides reduced slightly from 331 in 2016 to 286 in 2018.
- The 2014 STEPS survey show high risk factors for NCDs with obesity rates at 30.5%, tobacco use at 18.5%, physical inactivity at 20.1%, and unhealthy diet at 94.8%
- NCD data on DHIS2 should be interpreted with caution.

Table 11: NCDs, Mental Health, and Injuries Indicator Performance

Indicator	Baseline (year, source)	Target (year, source)	Status (year, source)	Comments
NCD burden				
Hypertension prevalence (%)	29.4 (2014, STEPS)			
Number of Hypertension Cases/Proportion of the population	366,262 / 17.2% (2016, DHIS2 & Population projections)	25% relative reduction (2023, NCDs strategy)	565,528/ 24.6% (2018, DHIS2 & Population projections)	Much higher reported cases or proportion n 2018
Diabetes Prevalence or raised blood glucose among adults (%)	5.8 (2014, STEPS)			
Number of Type 1 & 2 Diabetes Cases/Proportion of the population	27354/ 1% (2016, DHIS2 & Population projections)	0% Increase (2023, NCDs strategy)	47470/ 2% (2018, DHIS2 & Population projections)	Much higher reported cases in 2018
Number of injuries	Road injuries: 7,193 (2016, DHIS2)		13,239 (2018, DHIS2)	
	Other injuries: 71,843 (2016, DHIS2)			
Number people with mental disorders	33,598 (2016, DHIS2)			
Number of suicides	331 (2016, programme data)			
Cancer screening				
Coverage of cervical cancer screening		80% (2023, NCDs strategy)		Not presented because of very low facility reporting rates for screening
Proportion of cervical cancer cases with early diagnosis	30% (2016, Programme records)		30.2% (2018, Programme records)	No progress
NCD Risk factors				
Obesity rates	30.5 % (2014, STEPS)	0% Increase (2023, NCDs strategy)		
Underweight rates (%)	14 (2014, STEPS)			
Tobacco use	18.5% (2014, STEPS survey)	30% relative reduction (2023, NCDs strategy)		
Physical inactivity	20.1 % (2014, STEPS survey)	10% relative reduction (2023, NCDs strategy)		

Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

Hypertension

The prevalence of hypertension was estimated at 29.4% based on the 2014 STEPs survey. There is no recent survey to shed light on hypertension. But routine data, although suffering from low underreporting shows that the cases of hypertension have increased from 366,262 in 2016 (or 17.2% of the population) to 565,528 (24.6%). The increase in the burden of hypertension may be related to high risk factors, which include obesity, physical inactivity and unhealthy diets. In 2014, 30.5% of the population in Botswana was obese while 20.1% were physically inactive. In the multi-sectoral NCD strategic plan, the target is to ensure that there is 0% increase in obesity between 2014 and 2023. The strategy aims to have a relative risk reduction of physical inactivity by 10% by 2023 and 30% relative reduction of unhealthy diet by 2023. Tobacco use was also high, with 18.5% of the population reporting using tobacco in 2014. The target is a relative risk reduction of 30%.

Diabetes

Obesity, unhealthy diets and physical inactivity are also risk factors for diabetes. The prevalence of diabetes according to the 2014 STEPs survey was 5.8%. The DHIS2 data shows that the number of people (proportion of the population) with diabetes increased from 27354 (1%) in 2016 to 47470 (2%) in 2018. The multi-sectoral NCD strategy has a target of 0% increase in diabetes in 2023 from the 2014 baseline. Reversing the increasing burden of NCDs and their risk factors call for concerted efforts among partners identified in the multi-sectoral strategic plan to scale-up prevention and awareness activities.

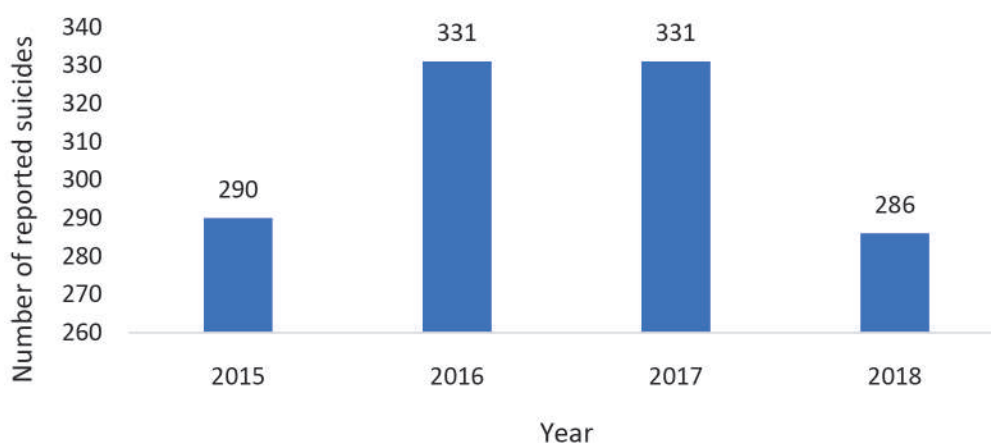
Injuries

Botswana suffers a high burden of injuries, both road and other injuries. The recorded road injuries increased almost twofold from 7,193 in 2016 to 13,239 in 2018. Anecdotal information from key informants also indicate that there has been a worsening of road fatalities contributed by an increase in reckless or drunken driving. It is crucial to investigate exactly what may be behind this increase in road injuries, is it road infrastructure, reckless and drunken driven, e.t.c? In addition, what proportion of the drivers vs pedestrians/cyclists are affected? Such insights may be helpful in coming up with specific interventions.

Mental Disorders and suicide

The number of mental disorders has increased from 33,598 in 2016 to 46,154 in 2018. Key informants have indicated that mental disorders have historically received very little attention in the health agenda. Mental disorders can be very damaging causing those affected to lose their social life, including jobs and family. This may ultimately lead to suicide among the affected. The number of reported suicides increased from 290 in 2015 to 330 in 2016 and remained the same in 2017. The numbers dropped to 286 in 2018. The number of mental disorders and suicides indicates the need for more attention on mental health.

Figure 14: Trends in number of reported suicides



One of the challenges for the mental health program is the lack of sufficient routine data for M&E activities and no coordination between the public and the private sectors in terms of data sharing. In addition, unlike other areas, there is insufficient research in mental health to help understand the burden, contributing factors, and what interventions can be put in place.

There has been efforts to improve focus on mental disorders. For example, the number of hospitals with full mental health facilities increased from 4 in 2015 to 6 in 2018 (Programme records). Since 2015, there has been integration of mental health services in 600 health facilities. In addition, the mental health workforce, specifically psychiatric nurses, stood at 186 in 2019.

For all NCDs, Mental Health and Injuries, the biggest challenge highlighted was the low funding levels as well as under-staffing. This may not necessarily reflect low prioritization but the historical fact that these conditions were not a big problem in the past. Apart from having limited data, key informants mentioned that there has been good progress in cancer screening, e.g., cervical and breast cancer. Community sensitizations on the risk factors of NCDs through campaigns, radios, road shows, ICT and TV have also been undertaken. Additionally, primary health care guidelines have been developed and the programme subsequently developed training curricula for primary care based management of diabetes, cardiovascular diseases and chronic respiratory diseases.

To conclude on the service delivery pillar of the Botswana health system, despite the many challenges highlighted for respective disease areas, there have been major milestones achieved in the Botswana health system in the past few years. Among them was the ministry being able to refer patients within reasonable time for advanced care anywhere in the world. In the past, patients would die while on the waiting list for more than 3 years, e.g., for surgery of early cancerous cells. Treatment abroad is however very expensive. Current efforts have focused on bringing experts in the country, e.g., for renal transplant. This has resulted in huge cost savings for the year 2018 and 2019. In addition, there are efforts to train teams of specialists so that in the end, Botswana will be able to handle advanced treatment.

3.2 Health Financing and Governance

Key points:

- There was a slight increase in the proportion of the capital budget that the ministry is able to spend (budget absorption/execution rate) from 62.2% in 2015/16 to 66.5% in 2017/18.
- The share of Gross Domestic product spent on health has remained at 4%.
- In terms of composition of health financing, the share of government spending in total current expenditure has increased from 73% in 2014/15 to 79% in 2017/18.
- The share of household health expenditure in total health expenditure has remained low, reducing slightly from 5% in 2014/15 to 4% in 2017/18.
- The share of external financing reduced from 7% in 2014/15 to 6% in 2017/18.
- Botswana has reduced the share of spending on primary care substantially, from 43% in 2014/15 to 14% in 2017/18.
- The share of expenditure on health system administration was higher than that of service deliver (60% vs 40%) in 2014/15, but these shares were equal at 50% in 2017/18.

Table 12: Health Financing and Governance Indicator Performance

Indicator	Baseline 2014/15 (source)	Target (source)	Status 2017/18 (source)	Comments
Financing				
Government capital budget absorption rate	62.2 % (2015/16, Programme data)		66.5 % (Programme records)	
Government expenditure on health as percent of total current expenditure	73% (Draft NHA)		79% (Draft NHA)	
Household health expenditure as percent of current expenditure on health	5% (Draft NHA)		4% (Draft NHA)	
Total current expenditure on health (%) of gross domestic product	4.% (Draft NHA)		4% (Draft NHA)	
Primary health expenditure share in current health expenditure	43% (Draft NHA)		14% (Draft NHA)	
Health service delivery (vs administration) share of current health expenditure	40% (Draft NHA)		50% (Draft NHA)	Slight increase in the share of service delivery expenditure vs administration
External source of current spending on health as percent of current expenditure on health	7% (Draft NHA)		6% (Draft NHA)	
Percentage of the population covered by health insurance				
Governance				
Health facilities and districts with functional governance structures for implementing, coordinating and monitoring IHSP 2010-2020				
Presence of functional coordination and partnership mechanism from community to national level				
Referral system function				
Service plans within the health sector are aligned with the IHSP				
Programmes implemented according to IHSP (annual reports, performance reports etc.) (number)				

Key to Interpreting achievement color codes:

Color code				
Reduction in gap between target and status	>76%	51-75%	26-50%	<25%
Comment	Target attained or substantial progress	Good progress	Some progress	Little or no progress

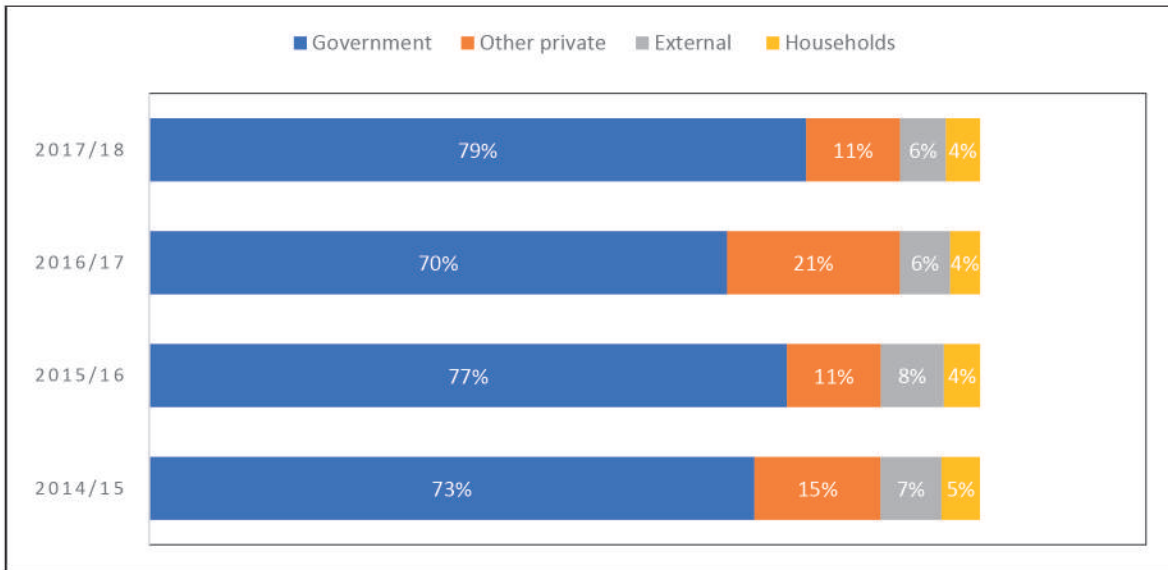
Health Financing

Findings from the latest national health accounts (NHA) show that Botswana's health expenditure is comparable to the average of upper middle-income countries. In 2017/18, it spent \$427 per capita on health from \$405 in the previous year. This is a good step towards the achievement of the Chatham target of \$533 per capita by 2030. The share of government health spending in total government expenditure is 15%, implying that Botswana has achieved the Abuja target.

Despite these levels of spending, budget execution rates have been poor, especially the development or capital budget component. For instance, while 93% of the recurrent component of the budget was spent in 2018/19, only 66% of the development budget component was spent. Poor execution rates for the development budget indicate inefficiency in spending. One of the contributing factors for poor budget execution highlighted by key informants was that some departments hold on to historical budget items even when functions have changed and they may not have much use of this money, resulting in unused funds. Hence given the ministry restricting, there is need to thoroughly revise the budget allocations.

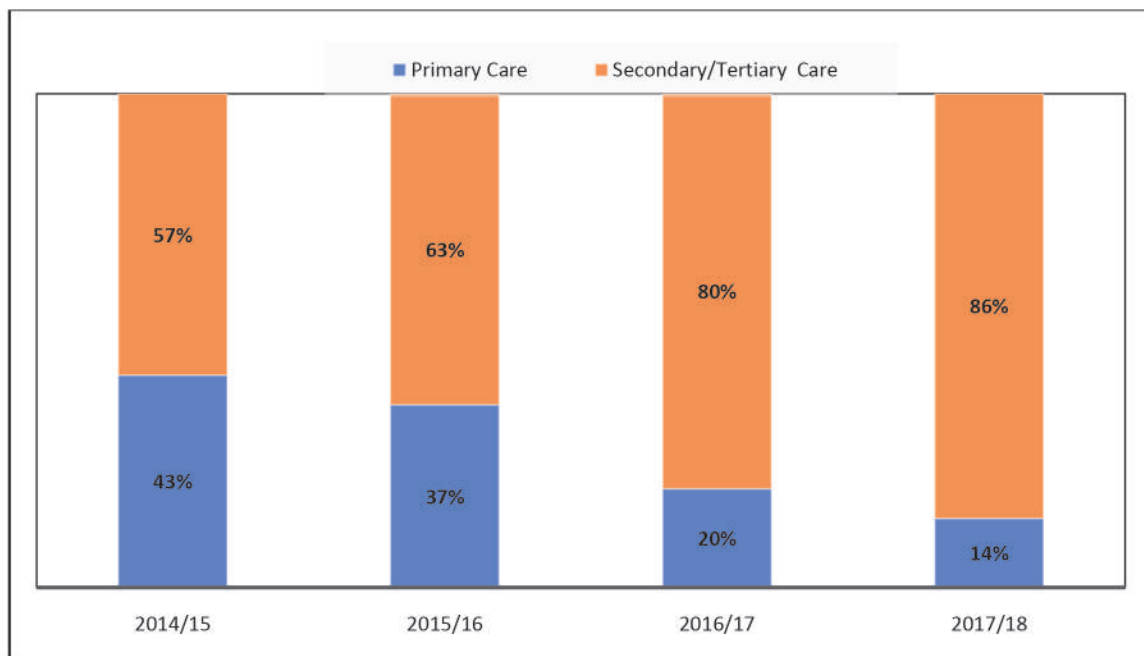
Overall, current health expenditure on health in the 2017/18 financial year was 10.5 billion Pula, which was an increase from 9 billion Pula in 2016/17. The share of government spending rose in 2017/2018 with almost 80% of spending from government, 11% from other private entities, 6% from external sources, and only a partly 4% from households' expenditure, Figure 15.

Figure 15: Composition of current health expenditure, 2014/15—2017/18



However, Botswana spends the bulk of its current health expenditure (86%) at the secondary/tertiary level. The share of spending at the primary care level has progressively declined from 43% in 2014/15 to 14% in 2017/18, Figure 16. Key informants have indicated that one of the factors that may have contributed to declining spending on primary care was the centralization of health services. Previously, health centers used to be run by local authorities.

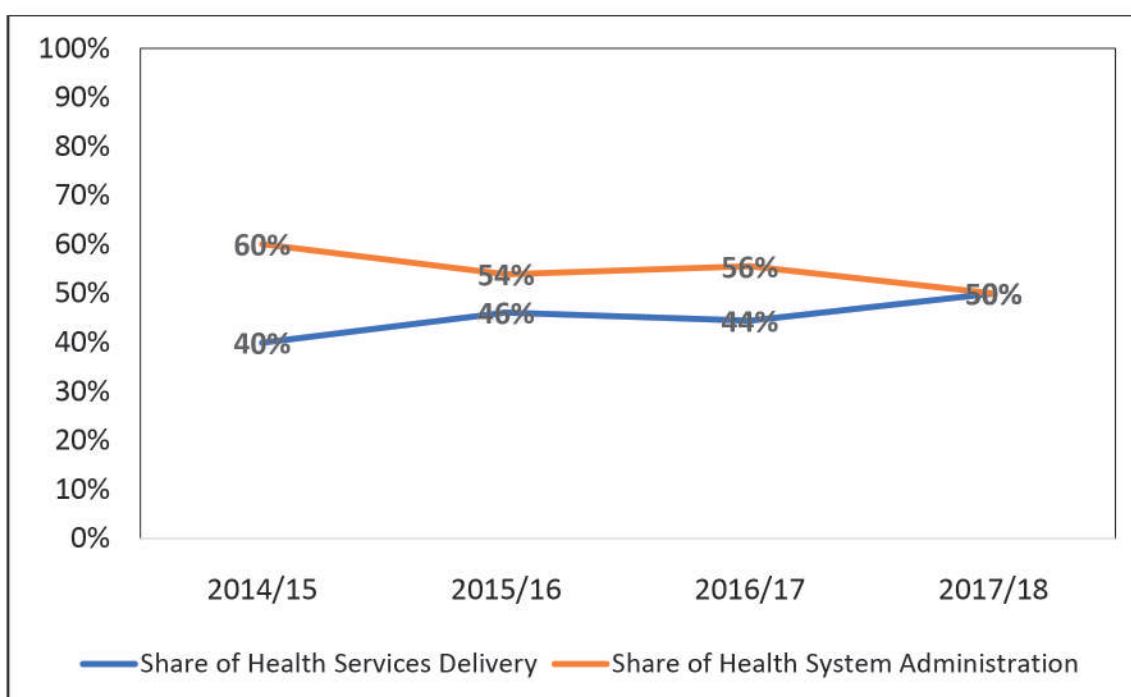
Figure 16: Proportion of current health expenditure on primary and secondary/tertiary care, 2014/15—2017/18



Moving forward, the ministry hopes to bring about some form of decentralization by making district health management teams (DHMTs) autonomous in running health facilities. They will be able to hire and fire health workers, and procure some items. The job of the ministry will be to provide oversight, regulation, funding, and purchase health services from DHMTs based on tariff that will be developed. It is hoped that empowering DHMTs will contribute to refocusing attention on primary care.

Another important aspect on spending is the share of current health expenditure that is being spent on health system administration in comparison with service delivery. In 2014/15 financial year, Botswana was spending 60% of its current health expenditure on health systems administration with only 40% spent on direct service delivery. Nonetheless, the share of service delivery has steadily increased to 50%, which is very high (Figure 17).

Figure 17: Share of Health Service Delivery and Health System Administration in Current Health Expenditure



Key informants have indicated that Botswana is committed to creating a sustainable health financing system. In this vein, a draft health financing strategy has been put in place. In terms of domestic resource mobilization, households contribute only 5 pula (about half a dollar) to access health services irrespective of the care being sought. However, most people do not pay this and they are not turned away. There are discussions to create a mobile platform that will make it easier for people to make this payment. It should be noted that household contribution to current health expenditure in Botswana is among the lowest in the world. While this is a good thing as people would not be impoverished by health spending, there are concern that this may not be a suitable model, especially if a shock disturbed Botswana's diamond revenue. But even with such concerns, proposals to create a national health insurance system have not found much backing.

Perhaps the biggest concern has been that the current resources are not being used efficiently. The idea is that before Botswana can look at other ways of generating domestic revenues, it should ensure efficiency in the use of current resources, eliminate wastages, and leakages including pilferage of drugs.

Health leadership and Governance

Leadership and governance are key to the implementation and achievement of various targets set out in national strategic plans and that these plans convey a uniform vision. Key informants highlighted that the great progress that the health sector has witnessed over the past few years is testimony to the good health and political leadership in Botswana. They however indicated that the biggest bottleneck is on implementation. While the vision and goals of the health system are well articulated in various documents, they are not put into action. A case in point was the essential health benefit package (EHBP) which was developed as part of the integrated health services plan (IHSP), but this and many components of the IHSP have not been systematically implemented. Structures at all levels are not in place that would facilitate the implementation of the IHSP. Perhaps more striking is that a number of key informants have never even seen or read these documents. Key informants mentioned that there is a low sense of accountability among key program officers, which render the operationalization of key planning documents. Part of the reasons was poor supervision. It was suggested that there is need for strong mentorship and coaching systems among health workers. Another cited case of low implementation was the public health act. The act provides for key interventions at the community such as household visits, but these are either weak or not implemented at all and there seems to be no one who is accountable for this.

3.3 Human Resources for Health

Key points:

- Botswana had 39.6 doctors (1.76 specialists) per 100,000 population, which translates to 0.4 doctors per 1,000 population; lower than the WHO benchmark of 1 doctor per 1,000 population.
- The nursing profession was 321.8 per 100,000 population or 3.2 per 1,000 population.
- Pharmacist were at 6.9 per 100,000 population or 0.069 per 1,000 population while pharmacy technicians were 0.157 per 1,000 population.
- Botswana had 4.4 dentists per 100,000 population or 0.04 per 1,000 population and 0.029 medical records officers/clerks.
- There were 75.3 (0.753) health care assistants per 100,000 (1,000) population and 25.6 (0.256) personnel in administration and management.

Table 13: Human Resource for Health Indicator Performance

Indicator		Baseline (year, source)	Target	Status (year, source)	Comments
Health workforces to population ratios	Doctors (per 100,000 population)			39.6 (2017, Programme records)	
	Nursing professionals (per 100,000 population)			321.8 (2017, Programme records)	
	Pharmacists			6.9 (2017, Programme records)	
	Pharmaceutical technicians and assistants (Pharmacy Technicians)			15.7 (2017, Programme records)	
	Dentists			4.4 (2017, Programme records)	
	Medical records and health information technicians (Medical Records Officers/Clerks)			2.9 (2017, Programme records)	
	Health care assistants			75.3 (2017, Programme records)	
	Administration and management			25.6 (2017, Programme records)	
	Other health professionals			35.7 (2017, Programme records)	
Health facilities with at least 80% of professional staff on establishment filled (by the six levels of care) (%)					
Proportion of health workers recruited annually as percent of the workforce gap					

At 0.4 doctors per 1,000 population, Botswana, unlike most other upper middle-income countries (Figure 39) has fewer doctors in relation to its population. Although the number is much higher than neighboring countries, and most of Africa, there is need to increase this number to the recommended 1 doctor per 1,000 population. Except for nursing staff, other staff categories are also low. Key informants have mentioned that most of the problems in the health sector are partly due to understaffing. This was aggravated by the decision of the government for zero growth meaning that no more slots were available for the ministry to hire. This situation is made worse by the very high attrition rates with 65 doctors resigning in 2019 only from the public service. There were suggestions that there is need to do a workload analysis and establish staffing norms and standards. While some standards were developed

in the EHBP, these were never implemented. There are plans to update or develop these norms and standards. A human resource for health committee has been put in place and it is expected to spear head this process, including the development of a HRH strategy.

Although overall health staff ratios are low, the biggest challenge that has been raised by key informants was the severe deficiency in specialist, including doctors and nurses, which forces government to send people out of the country for treatment at a high cost. It was indicated that the ministry is in the process of developing a training plan. It was also emphasized that there is need to maintain standards, some private colleges and universities were lax about.

3.4 Health Information System and Research

Health information systems in Botswana are set to be on a higher trajectory with research bill being presented to the cabinet. This is set to regularize research for health and the use of health information systems. This area has also received a major boost by the drafting of the e-health strategy.

Key points:

- Completeness of facility reporting in DHIS2 has generally been low, but substantially improved from 41.4% in 2016 to 71.4% in 2018.
- Although most facilities have an electronic patient management system (IPMS or PIMS), only a few facilities had an electronic patient management system that is linked with other facilities (IPMS).
- An assessment of data quality at the district/ facility level for immunization programmes reviewed a 45%/50% data quality score.
- Botswana has a functional data warehouse.
- Integrated Disease Surveillance and Reporting (IDSR) was piloted in 30% of the districts.

Table 14: Health Information System Performance Indicators

Indicator	Baseline (year, source)	Target (year, source)	Status (year, source)	Comments
Health information system				
Average completeness levels of facility reporting (DHIS2)	41.4% (2016, DHIS2)		71.4% (2018, DHIS2)	Reporting rates have substantially improved and more effort required to increase further
Proportion of health facilities with a functional electronic record system linked with other facilities				Proposed indicator. For now, it will be only those with IPMS
Data quality or accuracy levels of district/facility reporting	45%/50% (2015, BDQA report)			This indicator can use data from scores from data quality supportive supervision as recommended in the 2015 Botswana data quality assessment report (BSQA).
Number/Proportion of Health districts who have had a complete Routine Data Quality assessment every two years at a minimum and completed quarterly data verifications.	3 districts (2013)	12 districts (2015)	DQA for ARV program done nationally in 2018 TB program does regular data audits	Indicator from M&E plan
Existence of a functional integrated data repository			yes	There is a functional data warehouse
Coverage of IDSR surveillance systems (% of the districts)			70%	
Proportion of hospitals using correct ICD coding				
Coverage of birth registration				
Coverage of death registration				

Botswana started rolling out DHIS2 as a health information management system for reporting, monitoring, and planning health services in 2015. Reporting rates are low but have gradually improved overtime, from an average facility reporting rate of selected forms of 44.1% in 2016 to 71.4% in 2016. However, the higher rates are more in the HIV forms while the other programs have very low reporting rates, even as at 2018, with more than half of the facilities not reporting. This affects monitoring, evaluations and planning for health services. Monitoring and evaluation falls under a newly created department and its work will be most beneficial to the people of Botswana if data is complete by ensuring, or enforcing, the requirement for all facilities to report or share data with this department. The 2017 Joint External Evaluation IHR Core Capacity highlighted that the systems of sharing information in

Botswana are hugely informal. There is need to formalize this so that important data is shared with the Monitoring and Evaluation department. In addition, different programmes collect data in parallel from health facilities for different implementing partners, some of which duplicates the information needed in DHIS2. It is important to take stock of all data needs by various programs and ensure that key indicators are collected and fed into the DHIS2. All data systems can be put together since the ministry has a functional data warehouse.

Almost all health facilities have either IPMS or PIMS as an electronic patient management information system. While IPMS is more robust and facilities with IPMS can be linked with other facilities, the cost for its use and maintaining it have been reported to be very high, with some key informants stating that this is unsustainable. PIMS is cheaper, but less robust and there is no linkage between facilities. Going forward, it has been indicated that a home-grown patient management system will be put in place to replace IPMS. Such a system will be designed in such a way that all health facilities are linked and it feeds into a reporting, monitoring and planning system such as DHIS2. In short, multiple information systems that are less or more interconnected either by design or due to lack of internet affect availability of quality data

Similar to DHIS2, there were reports that both IPMS and PIMS are underutilized. As to the reasons for this, some key informants have indicated that given shortage of health workers and demand work conditions in facilities, clinician opt for paper based solution which are quicker. In addition, some informants mentioned that these systems are sometimes too slow and responsive. The problem of underutilization was also mentioned for the information management system of the Central Medical Stores (CMS).

Apart from underutilization, data quality has generally been low. For example, the Botswana data quality assessment report in 2015 reviewed a quality score for districts of 45% and 50% for health facilities. Although the reliance on paper based data collection tools at the facility level has been isolated as one of the contributing factors for poor data quality, it is not clear what factors contribute to poor data quality at the district level. Nonetheless, the National health M&E framework 2014-2019 has an indicator which seeks to assess the proportion of health districts that have had a routine data quality assessment. However, it appears these routine data quality assessments are not conducted due to inadequate resources, despite being highlighted in the M&E framework.

Botswana also has a functioning Integrated Disease Surveillance and Response System (IDSR) that has been rolled out in all of the districts. The 2017 Joint External Evaluation of IHR Core Capacity scored Botswana highly on real-time surveillance, reporting, national laboratory systems, and national legislation, policy and financing but poorly on preparedness, emergency response operations, medical counter-measures and personnel deployment, and workforce. Currently, surveillance is indicators based and the plan is to also establish event-based surveillance as part of the IDSR.

Statistics Botswana is responsible for birth and death registration under vital statistics. Currently, there are efforts to ensure that the vital registration system is linked to the health information system for easy patient management, as well as monitoring and evaluation.

3.5. Health Infrastructure, Medicines and Medical products

Key points:

- Availability of necessary, vital, and essential drugs has reduced from 72% in 2015 to 52% in 2018.
- Necessary drugs experienced the greatest reduction in availability.
- Timely reporting in the logistic management information system increased from 42.6% in 2015 to 55.8%, which is little progress since it is a 23% reduction in the gap between status and target.
- On the bright side, overall reporting rates increased significantly from 60.7% in 2015 to 81.2% in 2018.
- Compliance to national health quality standards has remained below the target of 60%, increasing slightly by 1 percentage point from 43% in 2015 to 44% in 2018.

Table 15: Performance of Health infrastructure, medicines, utilization indicators

Indicator		Baseline (year)	Target (year)	Status (source)	Comments
Health infrastructure, medicines, utilization					
Average availability of necessary, vital and essential drugs	Overall	72% (2015, programme records)	97% (2018, programme information)	52% (2018, Programme records)	Available reduced to almost half, moving away from target
	Vital drug availability	84% (2015, programme records)	97% (2018, programme information)	74% (2018, Programme records)	Reduction in availability
	Essential drug availability	74% (2015, programme records)	97% (2018, programme information)	64% (2018, Programme records)	Reduction in availability
	Necessary drug availability	69% (2015, programme records)	97% (2018, programme information)	22% (2018, Programme records)	Reduction in availability
	Non-drugs availability	65% (2015, programme records)	97% (2018, programme information)	60% (2018, Programme records)	Reduction in availability
Timely reporting of facilities in Logistic Management information Systems (LMIS)		42.6% (2015, programme records)	100% (2018, programme information)	55.80% (2018, Programme records)	Little or no progress
Overall LMIS reporting rates		60.70%(2015, programme records)	100% (2018, programme information)	81.20%	Good progress
OPD attendance per capita					
Compliance to National Health Quality Standards		43% (2014/15, Program records)	60% (2018)	44% (2017/18, Programme records)	Compliance to national quality standards is low and below target
Percentage of population living within 5km radius of a health facility (national/urban/rural)					
Health Facility Density (by type and distribution) per 100,000 population					
Bed Density and Distribution per 10,000 population					

The supply chain of drugs and supplies in Botswana is managed by the Central Medical Stores (CMS). It procures drugs and supplies to districts and various facilities. However, average availability of vital, essential, and necessary drugs has reduced from 72% in 2015 to 52% in 2018. Although availability of all drugs (essential, vital, and necessary) reduced, this reduction was mainly driven by necessary drugs whose availability reduced from 69% in 2015 to 22% in 2018. Some of the reasons given for low availability include challenges in procurement, which results in suppliers

or manufacturers renege on their commitment to supply drugs to Botswana when they find bigger orders, lack of timely feedback of consumption of drugs from health facilities, and staffing shortages at CMS. On lack of timely feedback, only 42.6% of the facilities were sending reports to CMS on a timely manner in 2015 in the LMIS. The proportion increased to 55.8% in 2018, which is still low and highlights the fact that almost half of the facilities were not sending their reports on time. However, overall reporting rates have increased from 60.7% in 2015 to 81.2% in 2018. On challenges in procurement, Botswana is intending to engage with the SADC pool procurement of drugs with other partners in the region in order to reduce procurement challenges of a small country and reduce costs.

The main internal challenge of procurement of medicines is lack of accountability of medical supplies at the periphery. The failure by health facilities to give feedback on consumption not only restricts the quantification efforts of CMS but also raises concerns of leakages and pilferage of drugs. Unwarranted delays of the procured medicines are also experienced from time to time.

Botswana prides itself on good health facility infrastructure and equipment. However, maintenance of infrastructure and equipment is sometimes a challenge. Standards on clinics, hospital, environmental, and mortuary have been developed by the health inspectorate. The clinics and hospitals standards have been implemented and there were mechanisms in place for both external and internal monitoring. Compliance to these national quality standards is low. In 2014/15, only 43% of health facilities complied with quality standard. This proportions remained relatively unchanged in 2018. This is against a quality standard target of 60%. More efforts are needed to improve quality and move more progressively to the tenets of Universal Health Coverage (UHC).

4. Equity and performance analysis

Equity has long been considered an important goal in the health sector. Although part of the variation in health status between individuals is biological in origin, disparities in health between regions and between social groups and individuals within the country are largely determined by economic, political and social factors in how societies are organized. Equity analysis highlights the disparities in health outcomes between different groups and is useful for policy-making and those involved in the allocation of health sector resources.

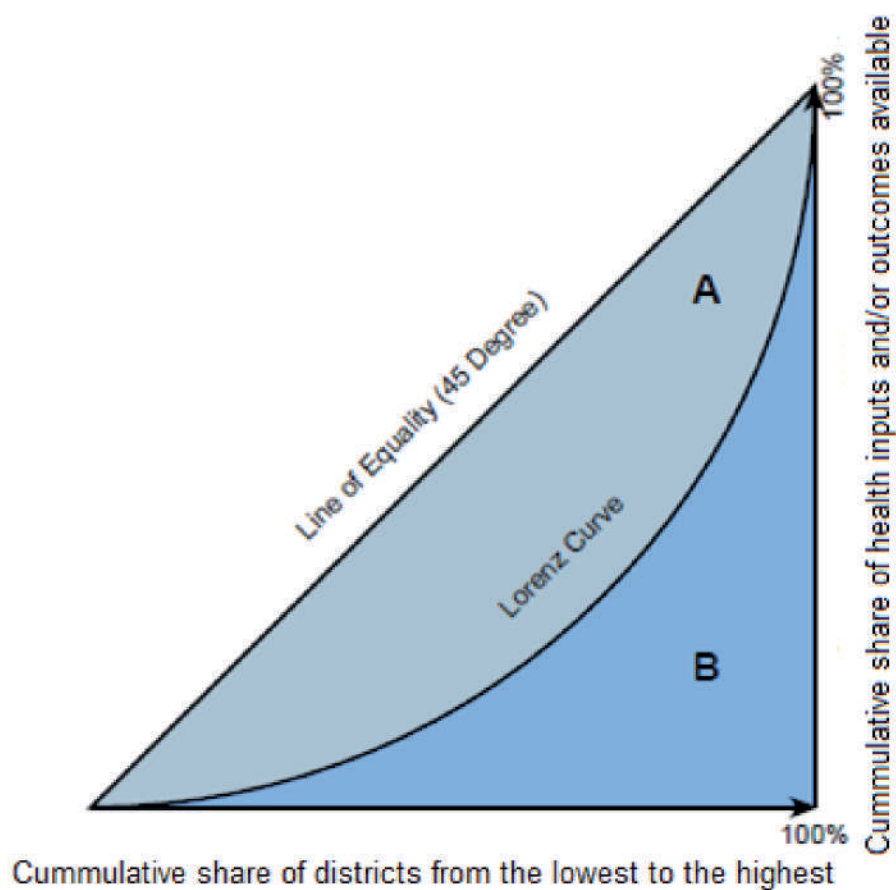
4.1 Measures of health inequality

There are various measures used to report health inequality. For this report, we have chosen to use the Gini coefficients to examine inequalities in health inputs and outcomes between the districts. A Gini coefficient of zero expresses perfect equality, where all districts would have the same level of health inputs and outcomes. A coefficient of one (or 100%) expresses maximal inequality among districts (e.g. only one district has all the health inputs and consequently outcomes and no other district has any!).

4.2. Construction of the equity indices

The Gini coefficient is a **single number** aimed at measuring the degree of inequality in a distribution. The Gini coefficient can then be thought of as the ratio of the area that lies between the line of equality and the Lorenz curve (marked A in Figure 18) over the total area under the line of equality (marked A and B in the diagram); i.e., $G = A / (A + B)$. It is also equal to $2A$ and to $1 - 2B$ due to the fact that $A + B = 0.5$ (since the axes scale from 0 to 1). The Gini Coefficient is equal to the area between the actual health inputs and/or outcomes distribution curve, as expressed by the Lorenz Curve, and the line of perfect health inputs and/or outcomes equality. The more bowed out a Lorenz Curve, the higher is the inequality.

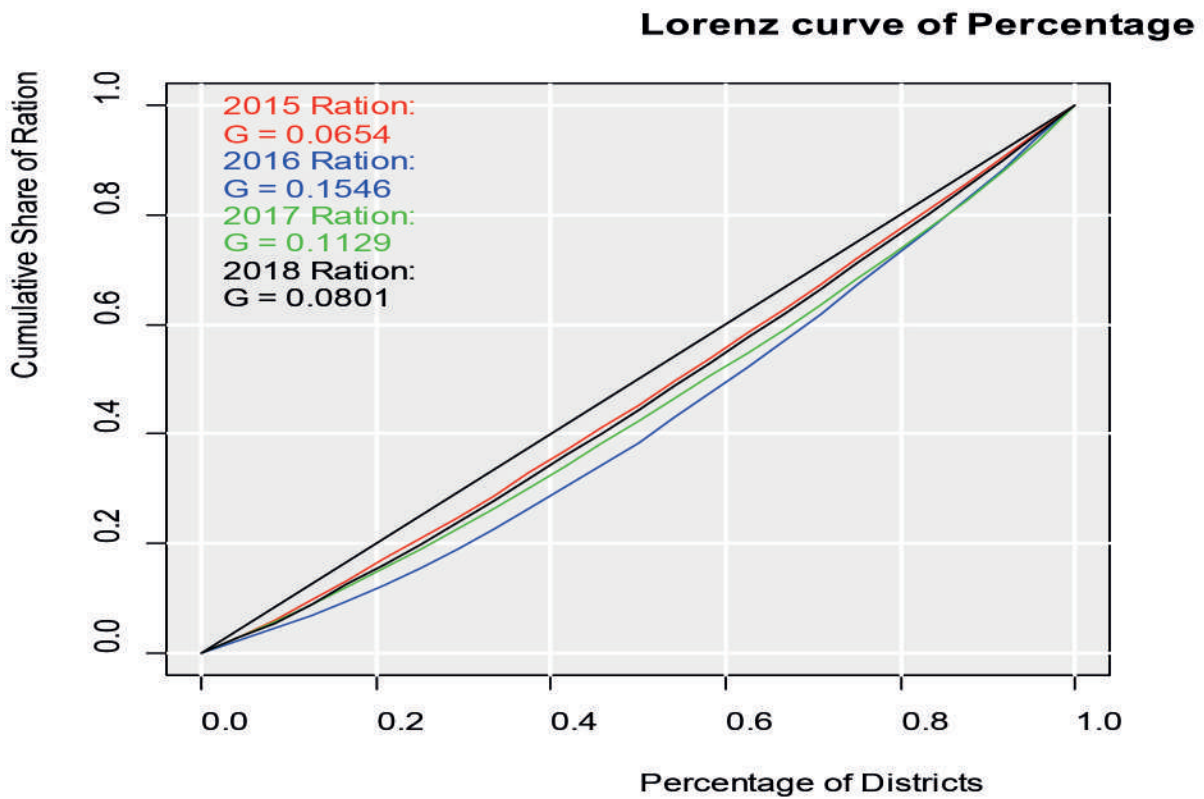
Figure 18: Graphical representation of the Lorenz curve (Gini coefficient)



Child Nutrition

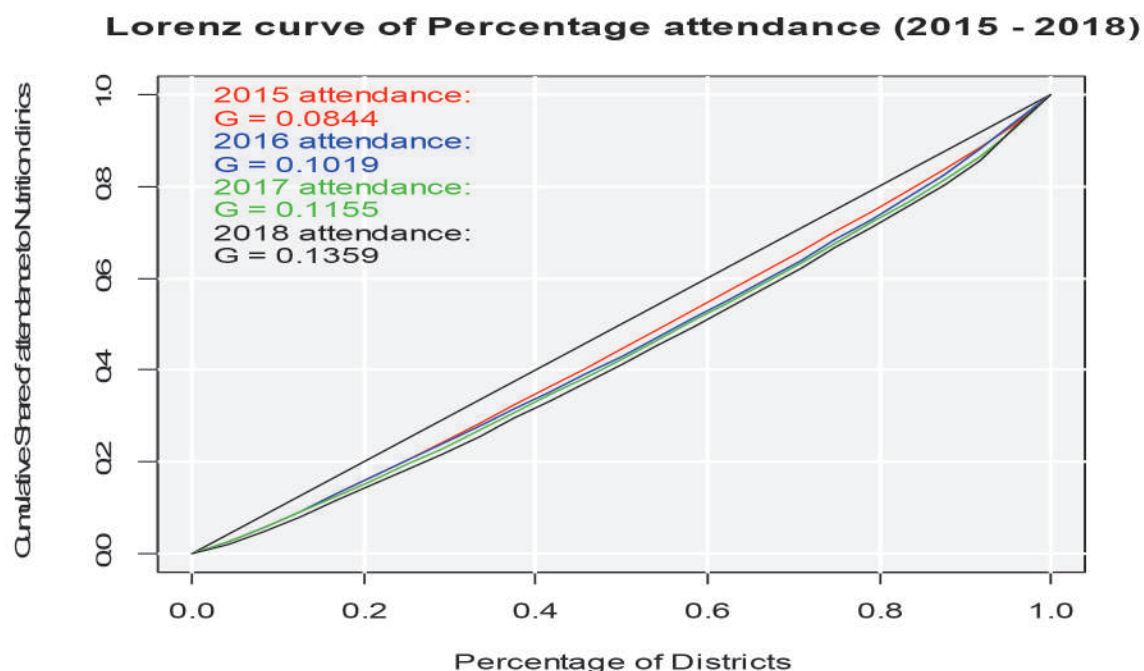
The ration distribution was more equitable across the districts in 2015, with the years 2016 and 2017 experiencing more inequalities. These inequalities are part of the causes of the spike that was witnessed in the same years on the presentation of under 5s with experiencing moderate malnutrition.

Figure 19: Distribution of ration share across the districts



The percentage attendance to nutrition clinics for the under 5s was found to be on the decline. To compound this aspect, the variation from one district to the next has also been widening, as witnessed by the ever-increasing inequalities over the years, Figure 20.

Figure 20: Distribution of the proportions attending under 5 nutrition clinics



The proportion of malnourished children increased in 46% of the districts, in 2018 as compared to 2015, Figure 23. In the same period, the percentage of those attending growth monitoring promotion clinics reduced in nearly all the districts, Figure 21. This meant that more mothers did not get the requisite nutrition information. The distribution of those receiving rations across the districts remained unchanged.

Figure 21: Percentage attendance to growth monitoring and promotion across the district in 2018 compared to 2015

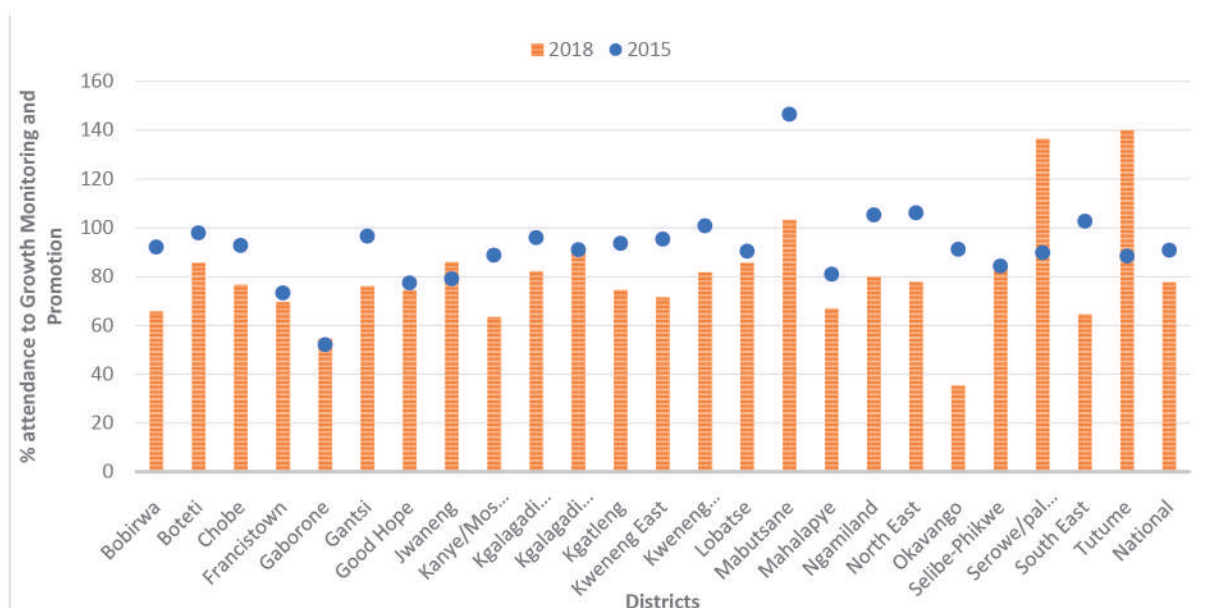


Figure 22: Percentage children receiving food rations across the district in 2018 compared to 2015

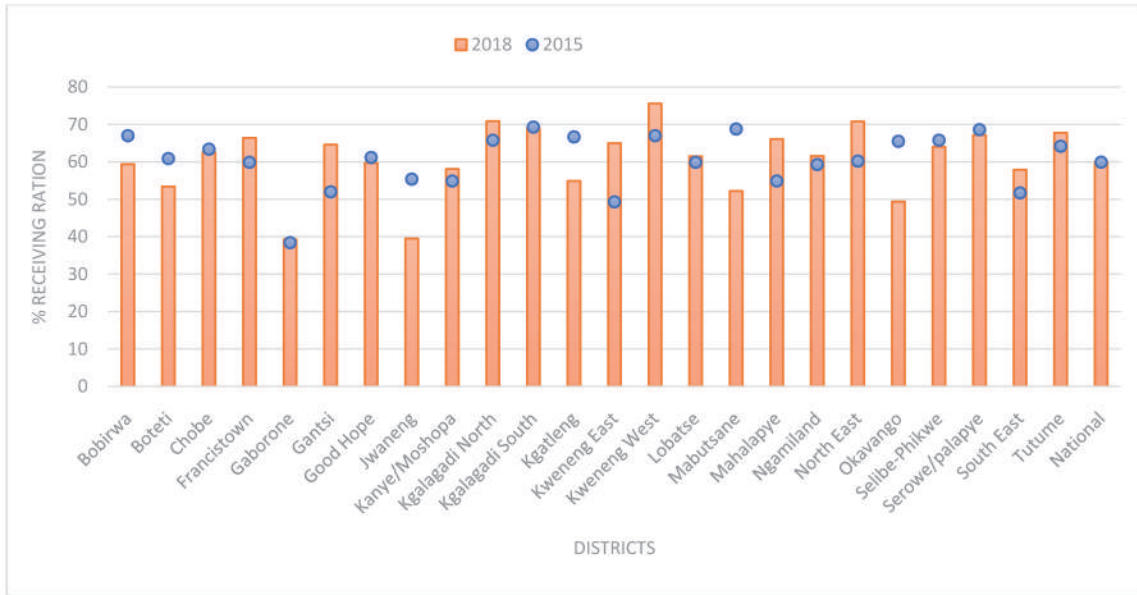
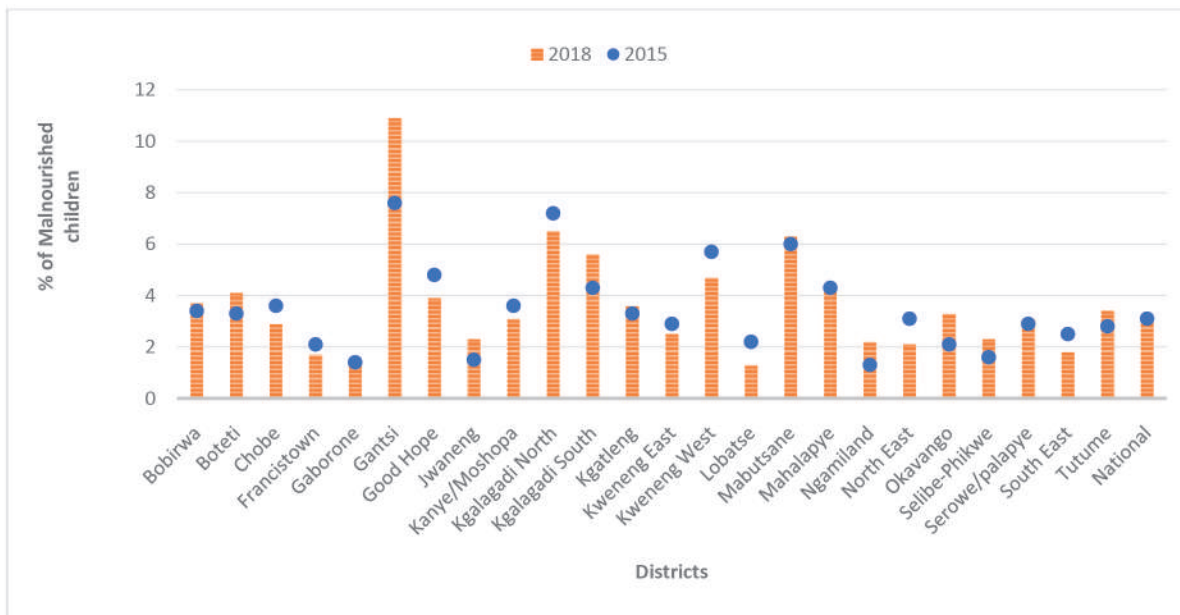


Figure 23: Percentage of the malnourished children across the district in 2018 compared to 2015



Immunization and Vitamin A

Equitable distribution of immunization coverages experienced hitches over the years with the most affected being BCG with the lowest performing districts being Kweneng West, Mabutsane, North East, Tutume. They covered only one third or below of their targeted infants while in other districts, targets were surpassed. MCV was constitutively the most equitable over the years and equity has shown positive improvement since 2015 through 2018.

Figure 24: Distribution of immunization coverage and Vitamin A in 2015

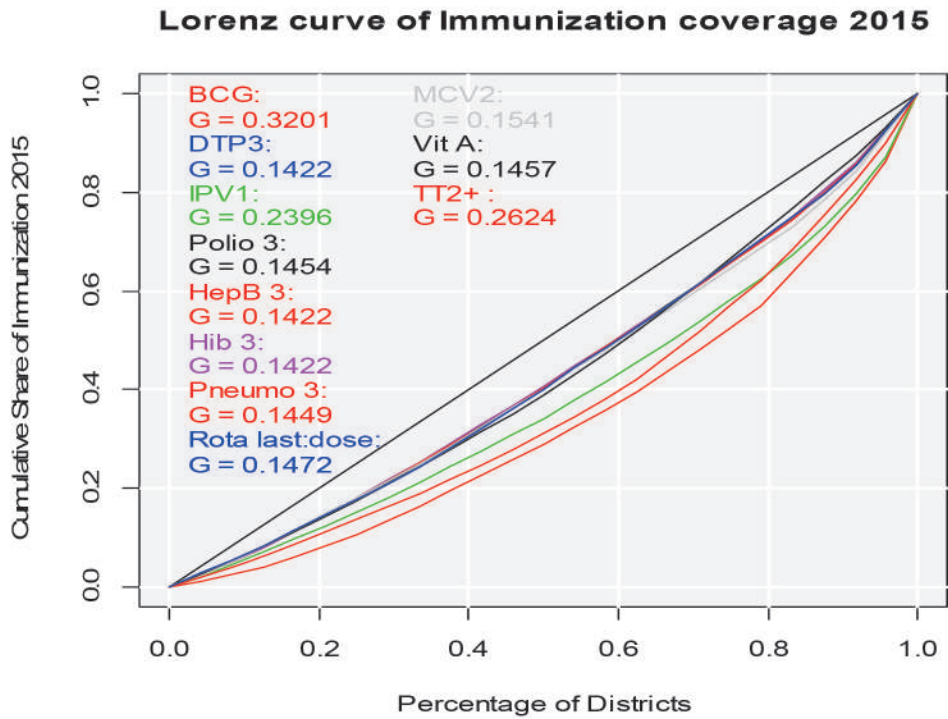


Figure 25: Distribution of immunization coverage and Vitamin A in 2016

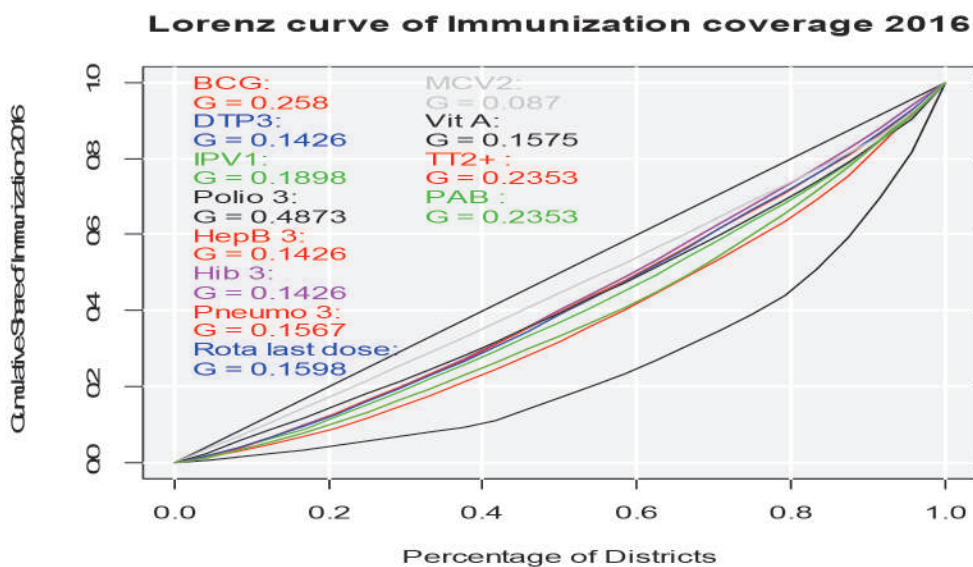


Figure 26: Distribution of immunization coverage and Vitamin A in 2017

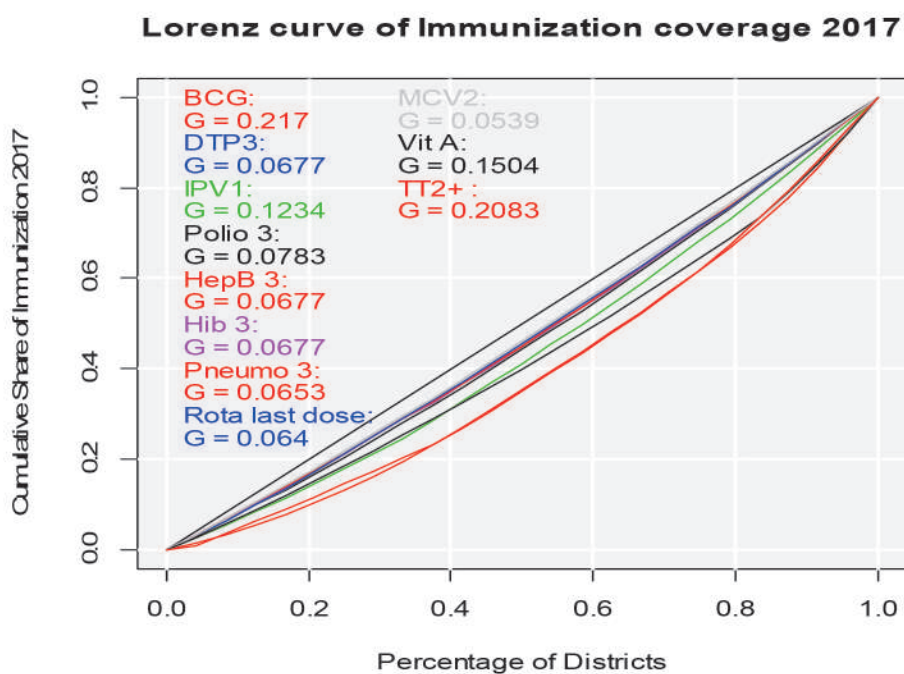
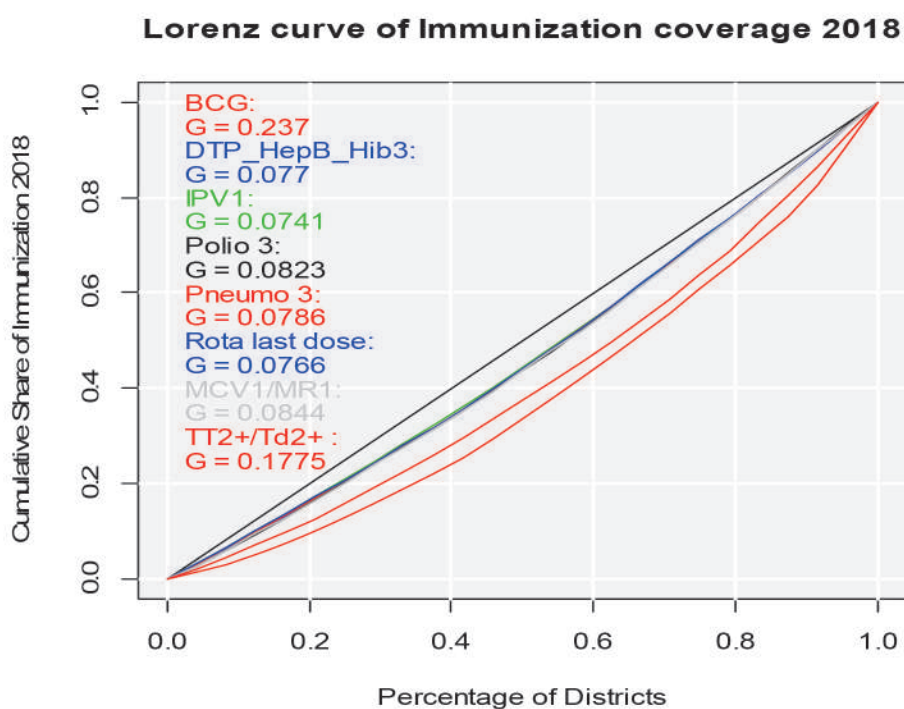


Figure 27: Distribution of immunization coverage in 2018



The detailed distribution of the vaccines across the districts for 2018 as it compares to 2015 is given in the figures below.

Figure 28: BCG vaccine coverage in 2018 compared to 2015 across the districts

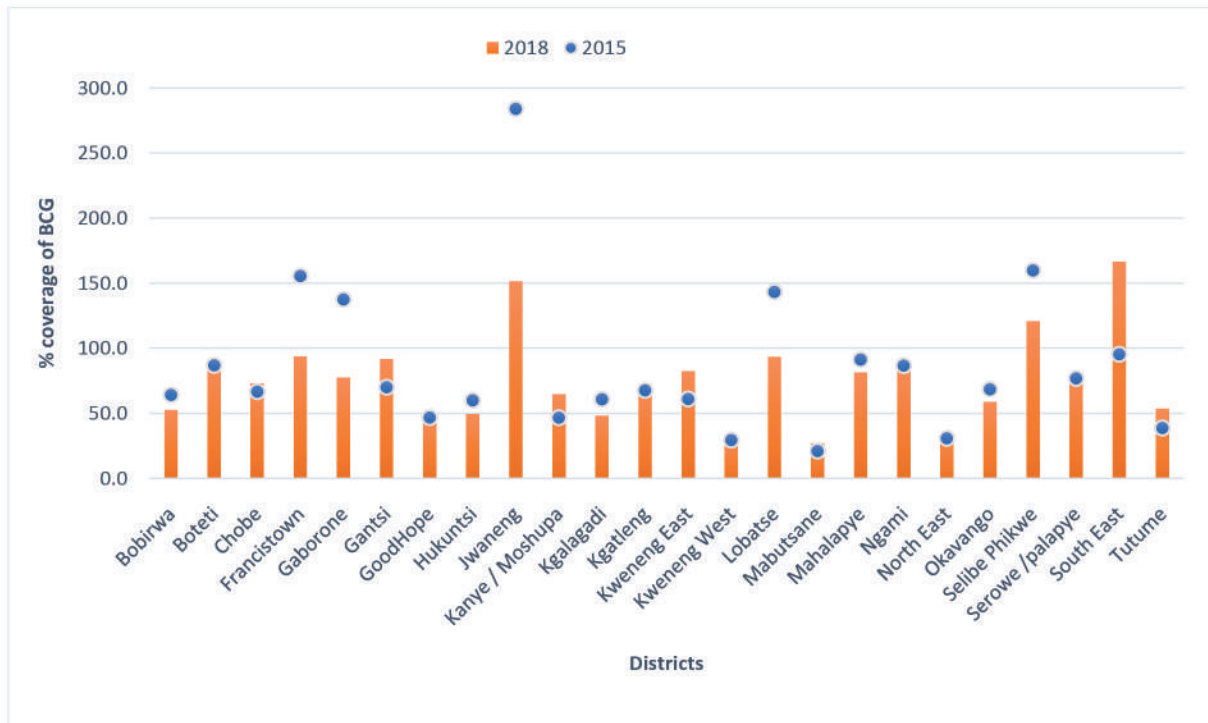


Figure 29: DTP3 vaccine coverage in 2018 compared to 2015 across the districts

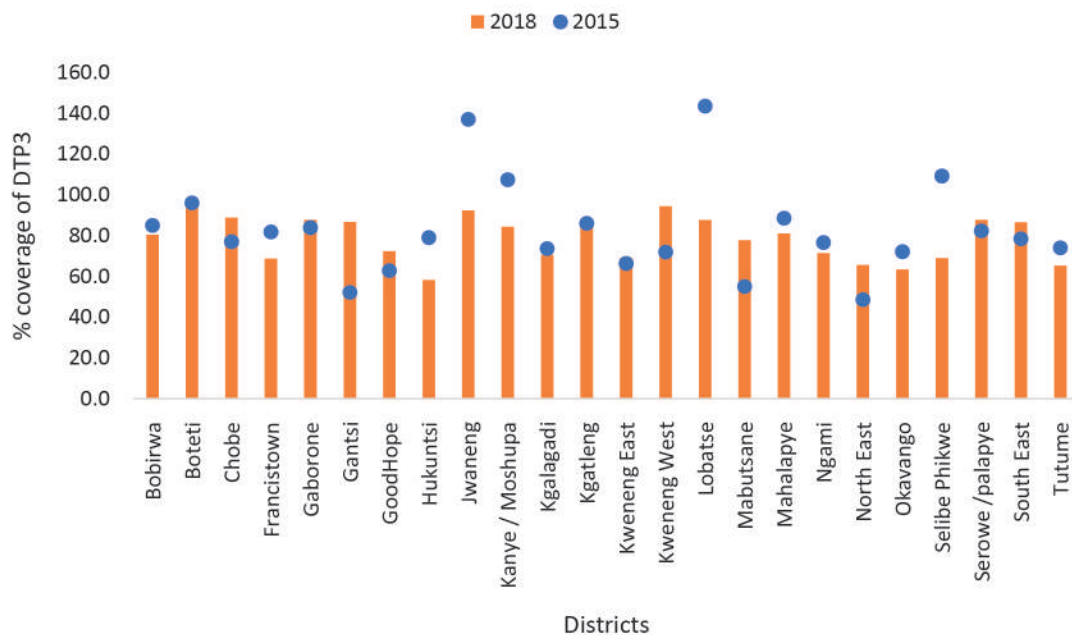


Figure 30: IPV1 coverage in 2018 compared to 2015 across the districts

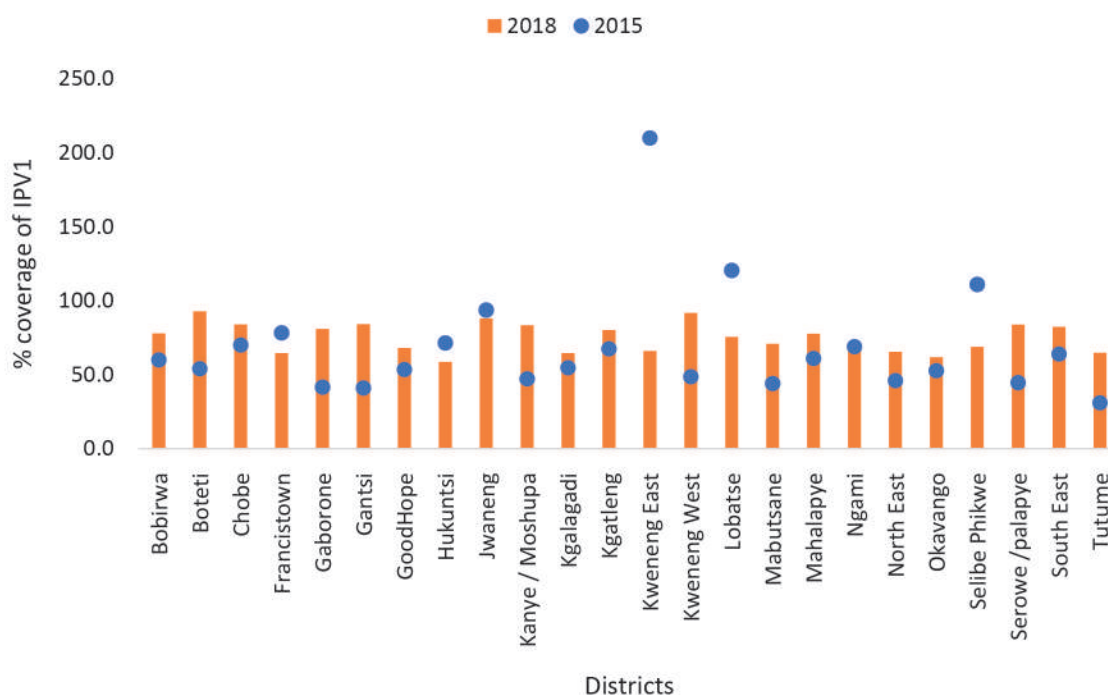


Figure 31: Polio3 vaccine coverage in 2018 compared to 2015 across the districts

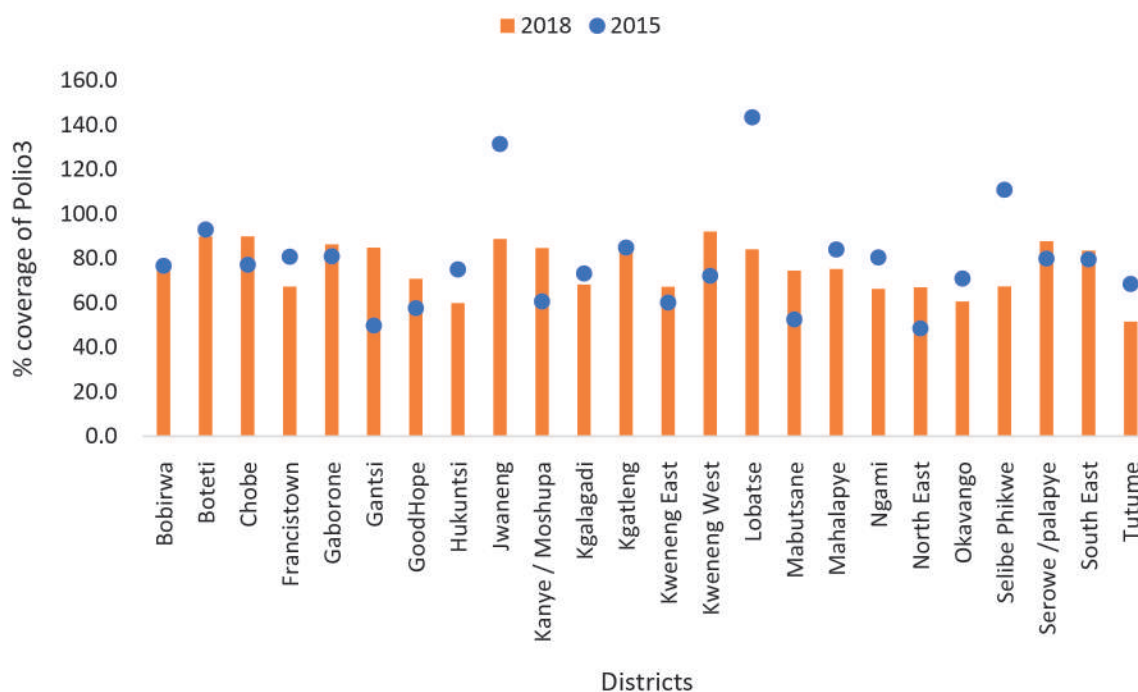


Figure 32: Pneumonia vaccine coverage in 2018 compared to 2015 across the districts

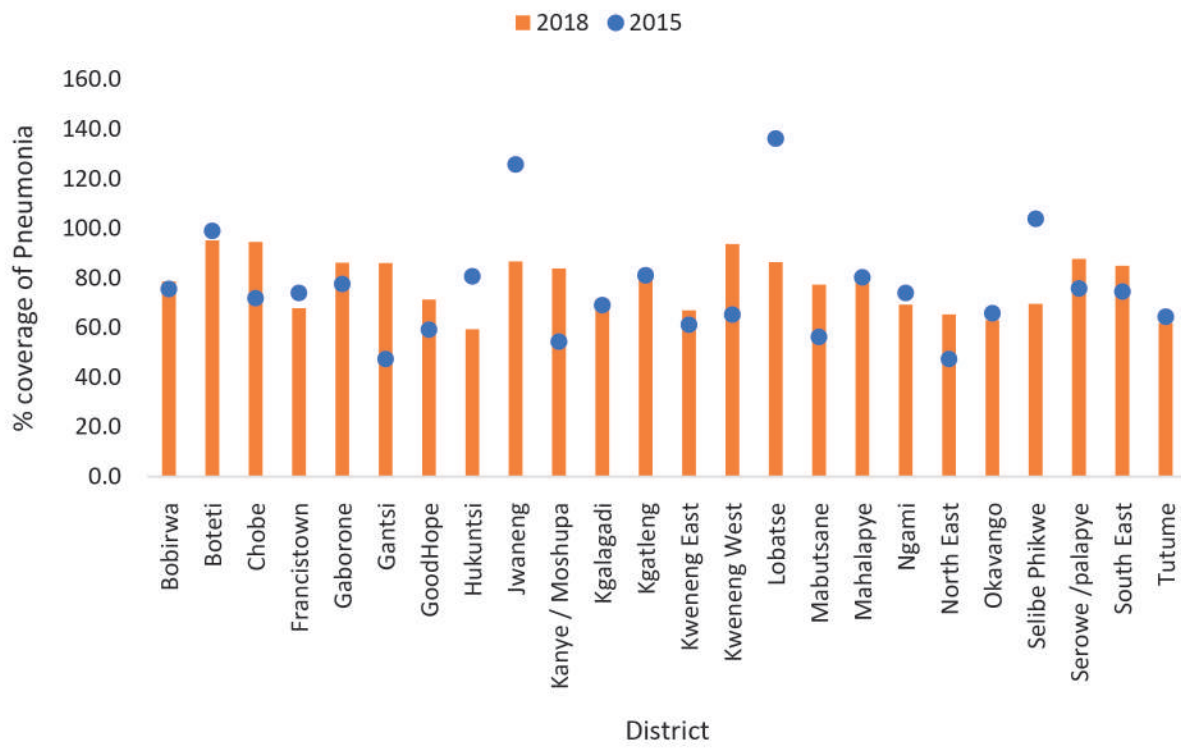


Figure 33: Rota virus last dose coverage in 2018 compared to 2015 across the districts

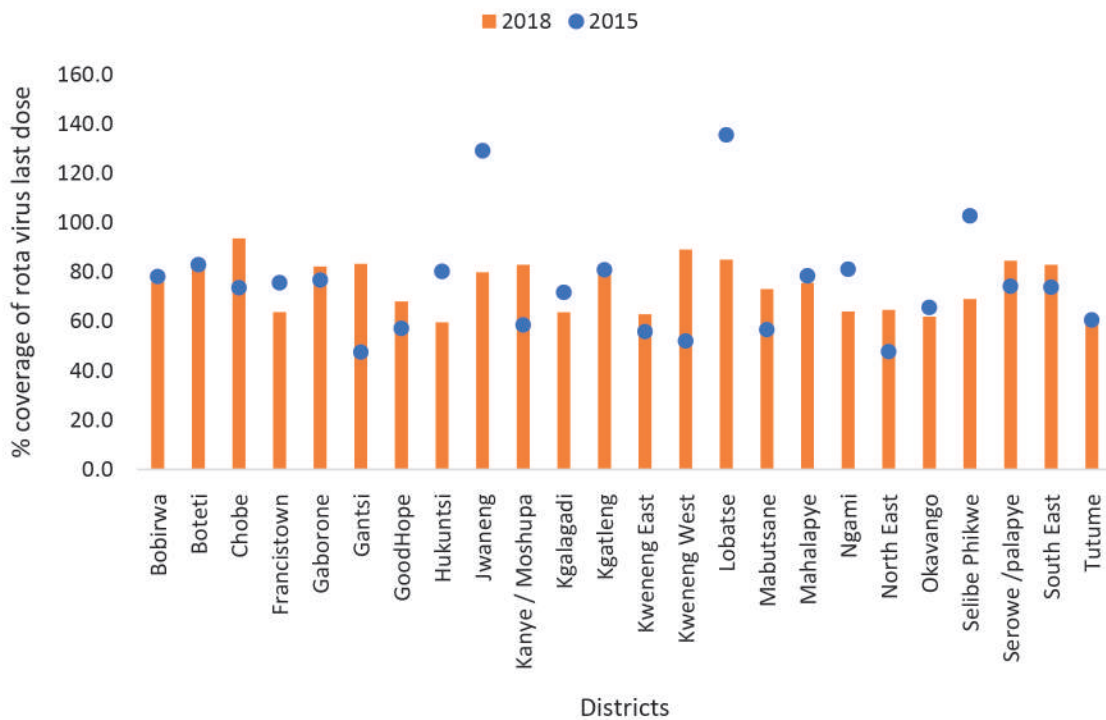


Figure 34: MCV2 coverage in 2018 compared to 2015 across the districts

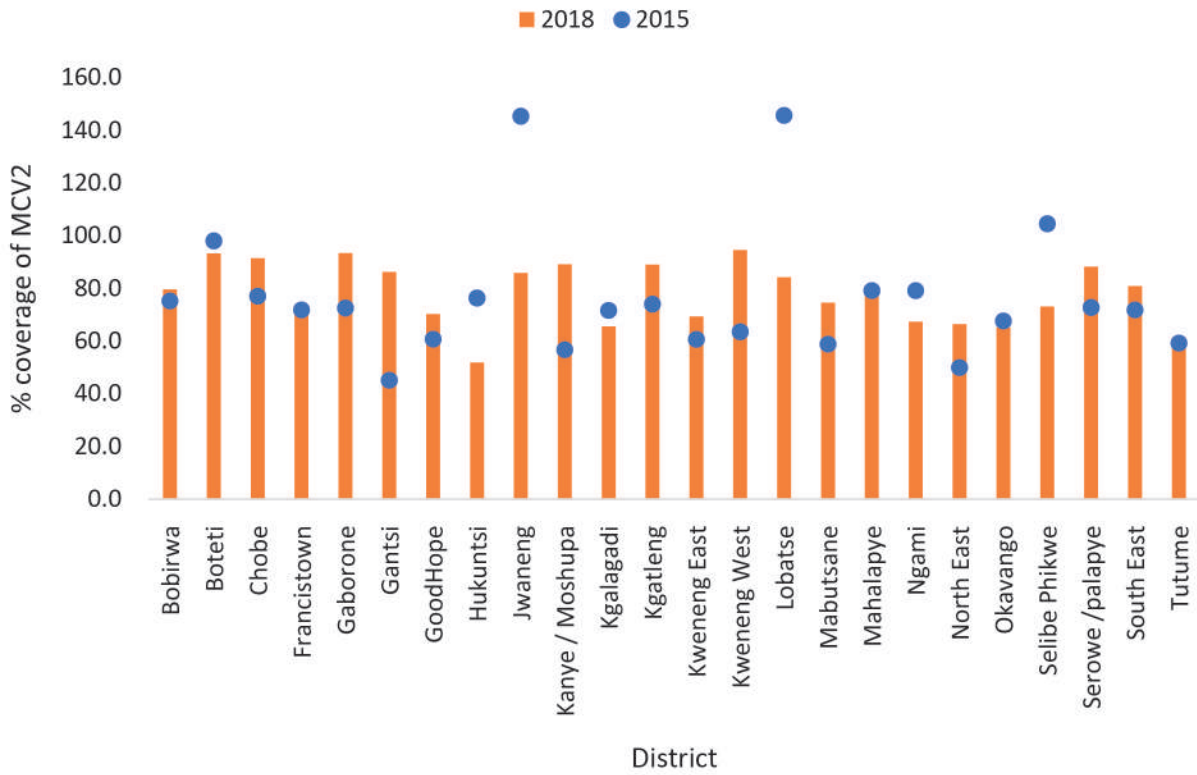
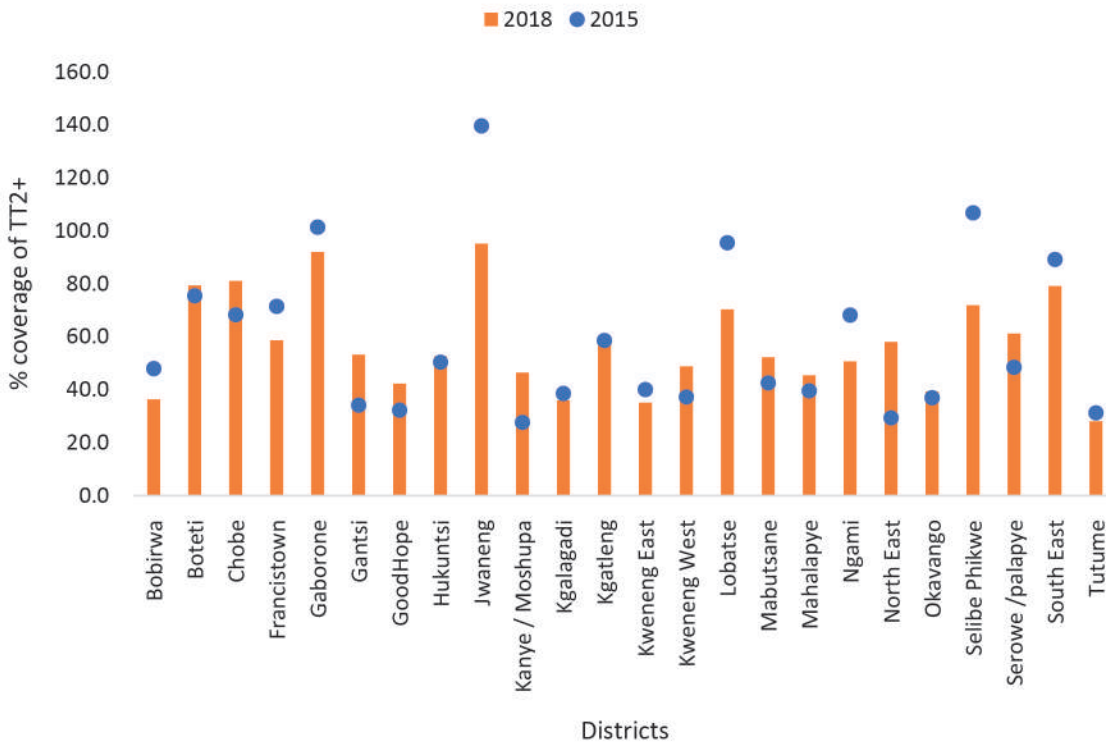


Figure 35: TT2+ coverage in 2018 compared to 2015 across the districts



5. Country comparisons

Figure 36: Under-five mortality vs Health Expenditure per capita, upper middle-income countries, Africa and Asia, 2016.

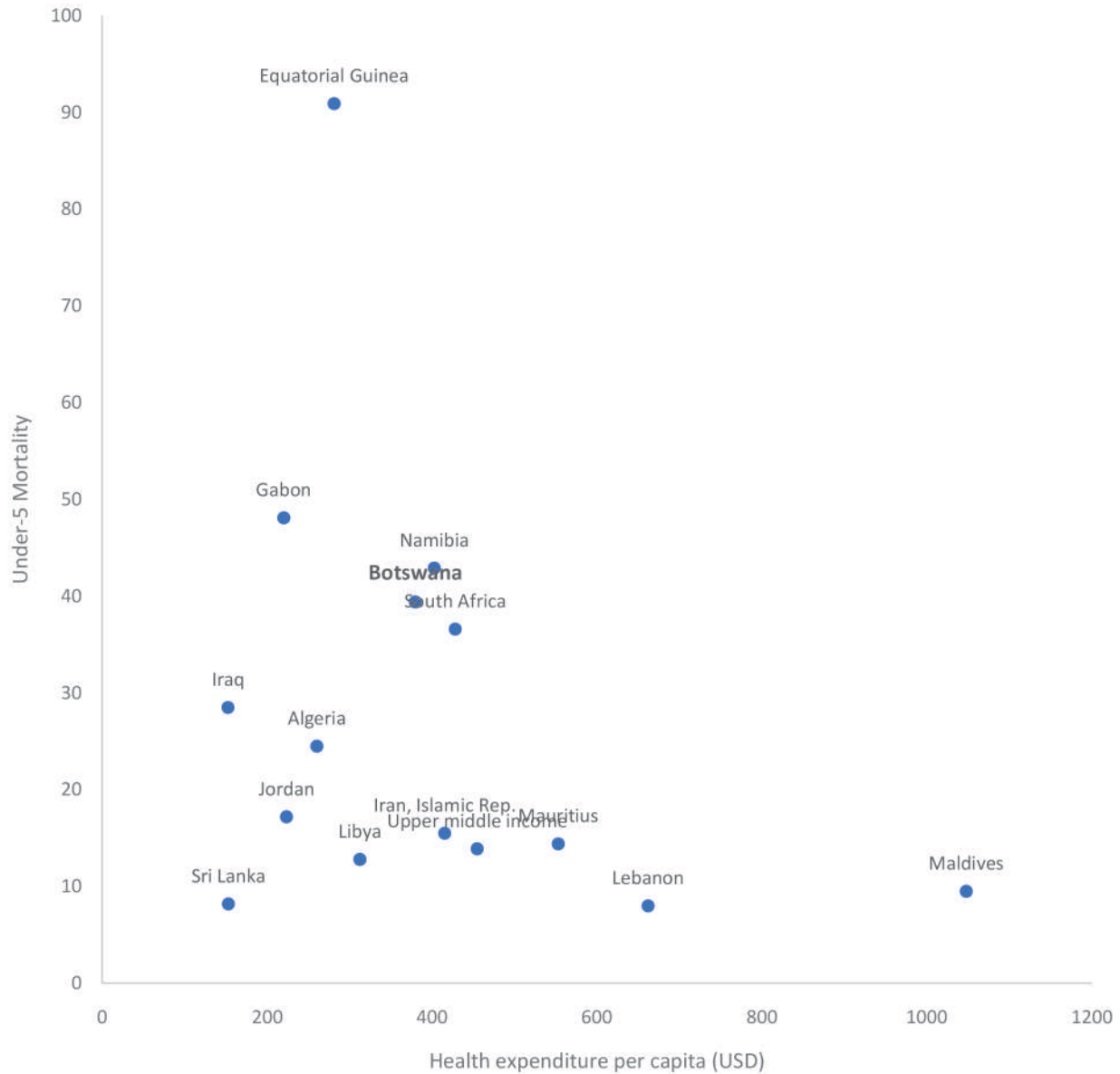


Figure 37; Maternal Mortality Ratio Vs Health Expenditure per capita, upper middle-income countries, Africa and south Asia, 2016.

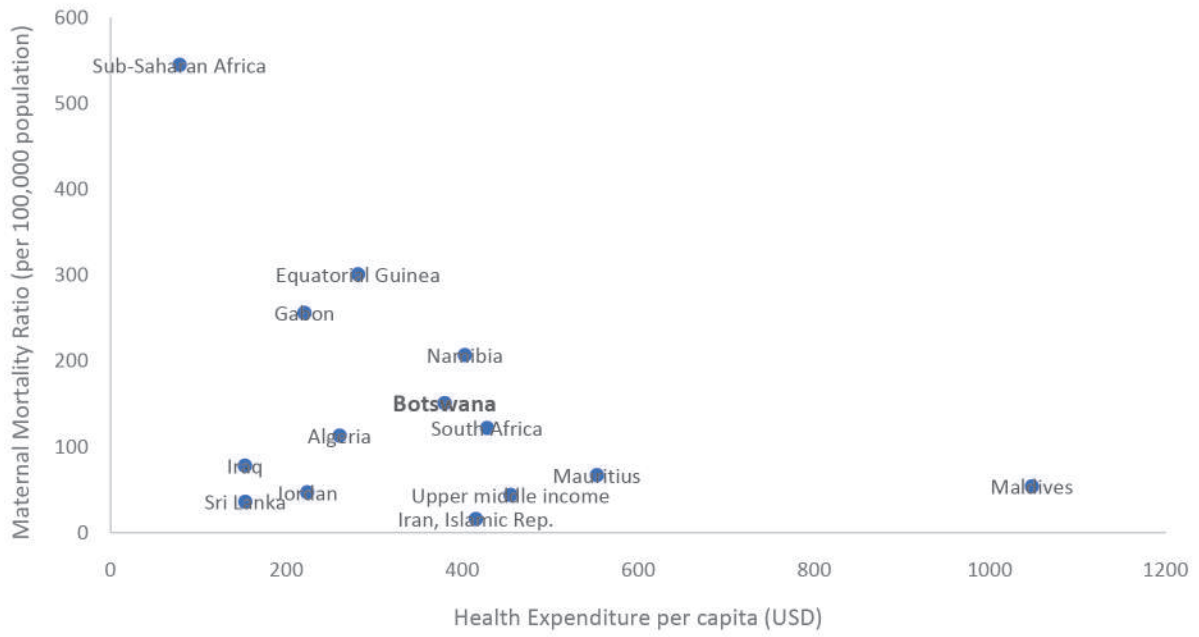


Figure 38: Country comparison: Maternal Mortality Ratio in Africa

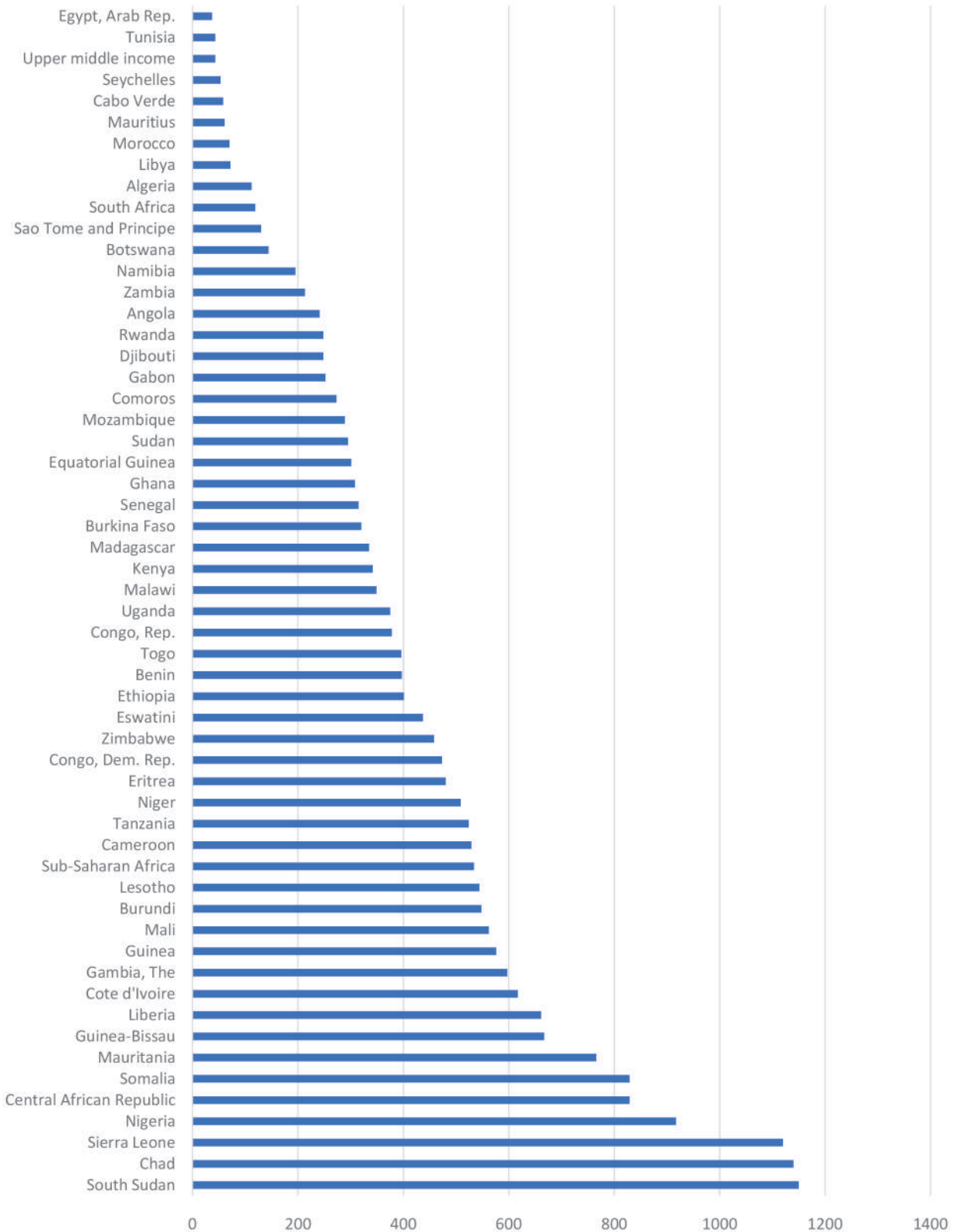


Figure 39: Country comparison: Physicians per 1,000 population

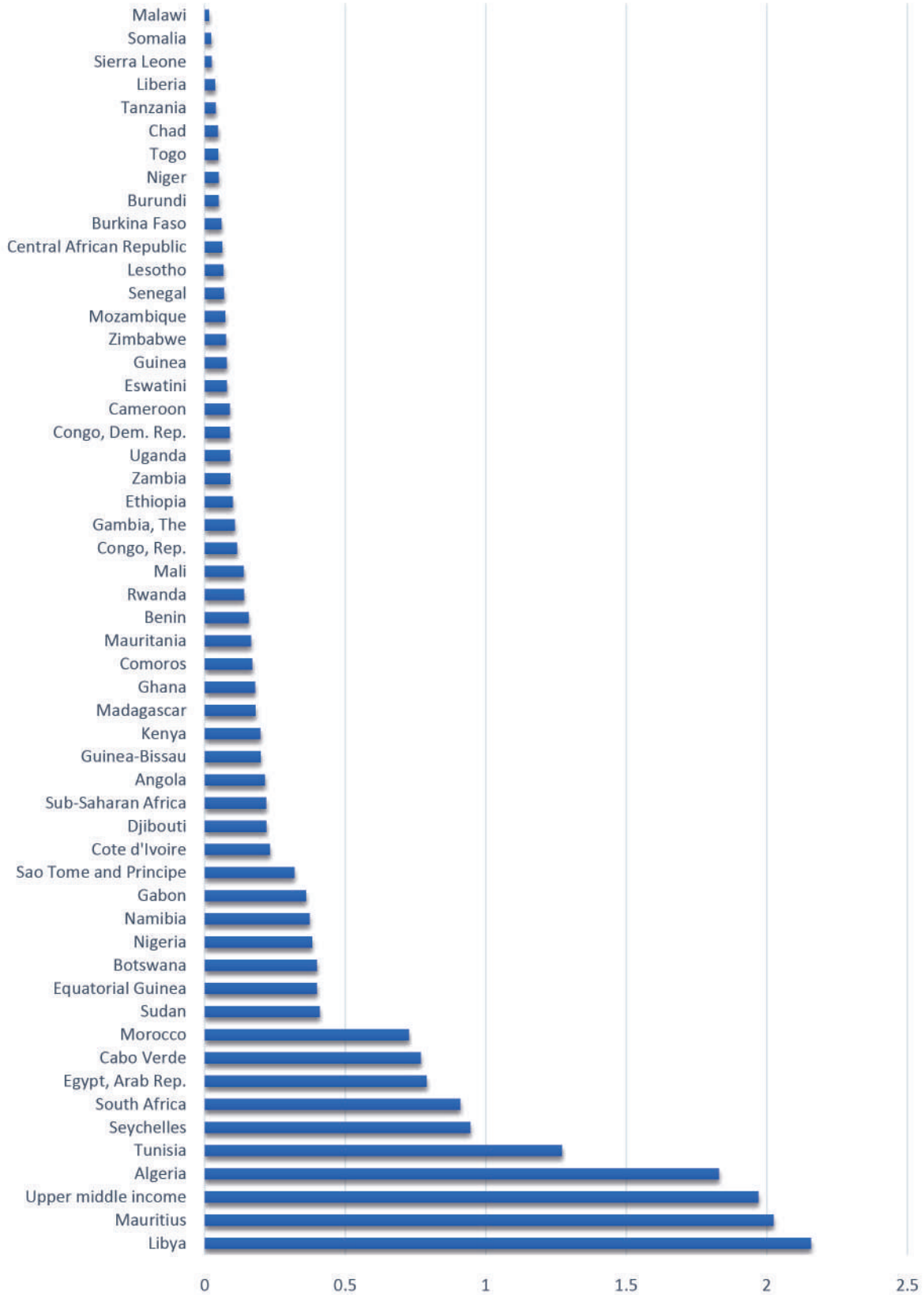
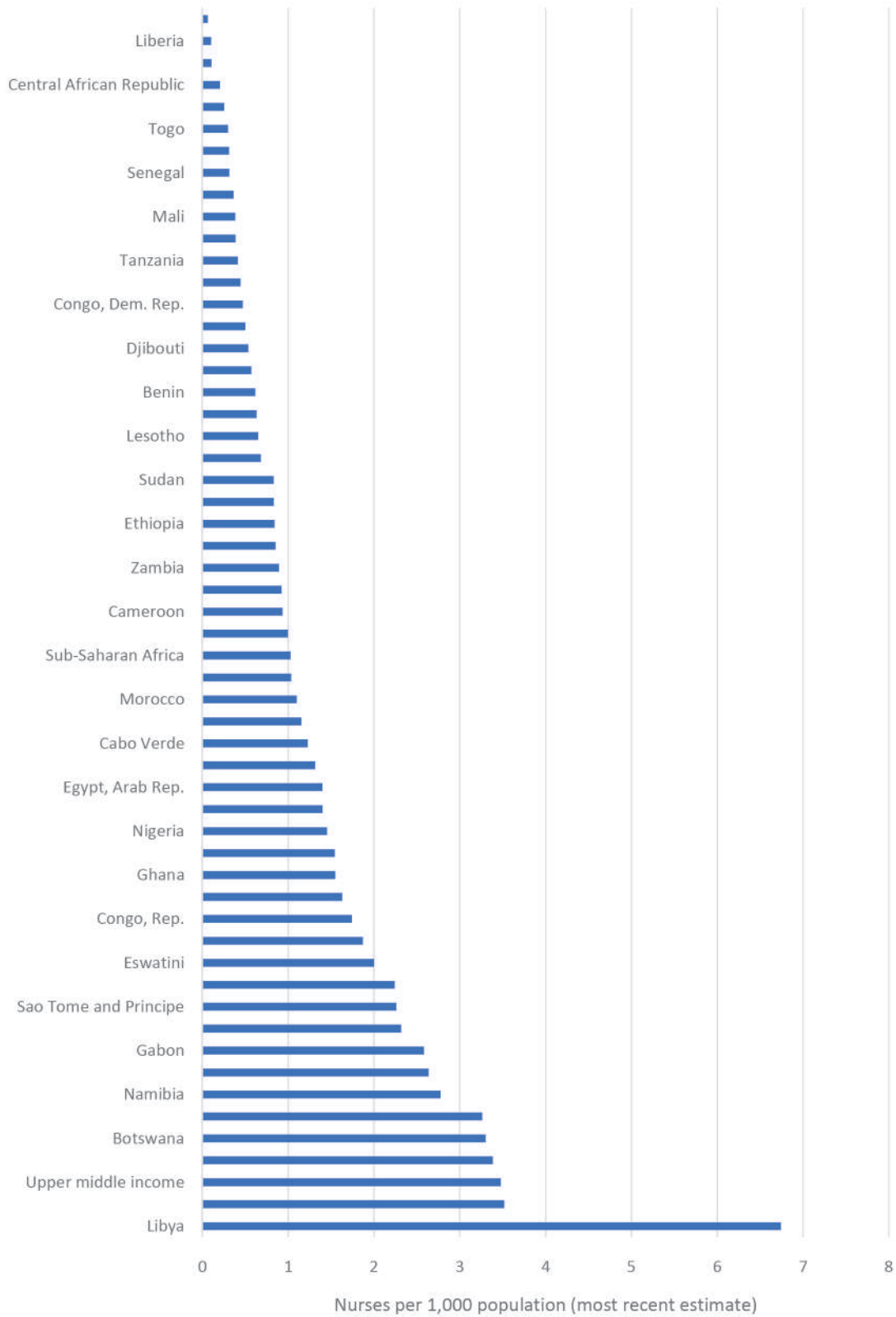


Figure 40: Country comparison: Nurses per 1,000 population



6. Priorities for health investment

The following priorities will guide health investments in the next planning period:

- i. Invest more in primary health care in order to promote preventive health care
- ii. Implement staffing norms and standards
- iii. Step up initiatives in maternal and new-born care to help reduce maternal and neonatal mortalities.
- iv. Consolidate data into one repository and digitalize health services data. Have one system that communicates to the entire system which lead to the real data
- v. Provide the basics for the digitalization of the health information, that is, internet, leadership, and staff
- vi. To have live information (data) in a war room; come up with the systems to collect information from facilities to DHMT and then the national office (Headquarters)
- vii. Strengthen governance of health data; have strategies like e-health, HDC, to collect data from the entire health system and not just the public hospitals
- viii. Review the research agenda for the country in order to capture the emerging issues in health
- ix. Conduct health facility mapping exercise and updating of the master facility list
- x. Equip health facilities in terms of equipment and manpower

7. Conclusions and Recommendations

7.1 Conclusions

- i. The proportion of investment in primary health care services has been on the decline. Low primary health care directly impacts on preventive health care hence a resurgence in clinical cases.
- ii. Inadequate feedback on consumption data from the health facilities was found to hinder forecasting and procurement of medical product, for instance, CMS was not in a position to accurately quantify medical supplies.
- iii. There were high levels of attrition among the clinical staff, including medical doctors.
- iv. HRH strategy was not implemented with affected staff placements.
- v. There were inefficiencies including wastages, low budget absorption rates, and leakages in the area of health financing.
- vi. The existing information systems are underutilized and all data was not being input. This is as a result of officers not entering their operations data at the point of service, for clinicians not entering data into IPMS. This has led to very low reporting rates whose data does not reflect the level of the services provided.
- vii. The master facility list is outdated. The last time it was updated was in 2016, and it does not capture the new developments of facilities in both the public and private sectors. Updating the master facility list will see inclusivity in the number of health facilities reporting into the systems.
- viii. Awareness of strategy documents like the IHSP was lacking to a section of officers. This implied that it was not in use at those points as a guiding document.
- ix. Smooth operations in the health system were hindered by weak legislative framework. Some legislations were not in existence, like those touching on data policies.

7.2 Recommendations

- i. Strategies of improving primary health care should be implemented.
- ii. A mechanism for compulsory submission of consumption data from the health facilities should be enforced. This may include linking restocking with the health products consumption reports.
- iii. Put mechanisms in place for staff retention in order to address the high levels of attrition. It is also highly recommended that this should follow from an employee satisfaction and work environment survey.
- iv. In order solve the problem of staff placements, the HRH strategy should be implemented.
- v. Under the health financing, there should be a well outlined prioritization of needs mechanism and stringent audit processes in order to minimize the inefficiencies.

- vi. The current data management systems should be interlinked in a manner that will allow flow and aggregation of data at the higher level which should be available on real time basis. This will entail the investment in the requisite infrastructure, manpower and leadership.
- vii. Health facility mapping should be done in order to update the master facility list. This will net in more data as well as, partly, solving the denominator problems.
- viii. An orientation package should be developed for the purpose of inducting new members joining the sector on the guiding documents.
- ix. Legislations governing the operations in the health sector should be exhaustive. This can be packaged through drafting and implementation of Health Act.

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11. Integrated Management of Childhood Illnesses (IMCI), Botswana, 2012
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13. Revised National population policy by the National Council on Population and Development, Botswana, 2010
14. The Essential Health Service Package for Botswana, 2010
15. World malaria report 2018, WHO

Appendix

Appendices

Annex Table 1: Percentage coverage of immunization and Vitamin A in 2015

District Name	2015 Number of Live Births	2015 number of Surviving Infants	BCG	DTP3	IPV1	Polio3	HepB3	Hib3	Pncumo3	Rotavirus last dose	MCV2	VitA1	TT2+
Bobirwa	2,225	2173	64.2	85	60	76.7	85	85	75.6	78.2	75.2	73.3	48
Boteti	2,130	2080	87	96	54	93	96	96	99	83	98	69.1	75.5
Chobe	706	688	66.7	77	70	77.2	77	77	71.9	73.7	77	68.4	68.3
Francistown	2,960	2885	155.6	81.8	78.3	80.8	82	82	74	75.7	71.8	87.4	71.5
Gaborone	5,040	4863	137.6	83.9	41.6	81	83.9	83.9	77.6	76.8	72.5	50.3	101.4
Gantsi	1,496	1462	70.1	52.1	41	49.9	52	52	47.4	47.6	45.1	64.2	34.2
GoodHope	1,708	1668	46.8	62.8	53.5	57.7	62.8	62.8	59.2	57.2	60.7	73.6	32.3
Hukuntsi	631	615	60	79	71.5	75.1	79	79	80.7	80.3	76.3	116.5	50.4
Jwaneng	400	386	283.9	137	93.7	131.5	137	137	125.8	129.2	145.3	104.7	139.6
Kanye / Moshupa	4,071	3976	46.7	107.4	47.2	60.7	107.4	107.4	54.4	58.6	56.7	112.6	27.7
Kgalagadi	969	947	60.9	73.6	54.7	73.3	73.6	73.6	69.1	71.8	71.6	82.3	38.6
Kgatleng	2,716	2646	67.7	86	67.5	84.9	86	86	81.1	80.9	74	101.6	58.6
Kweneng East	7,952	7749	61.1	66.3	210	60.2	66.3	66.3	61.2	55.9	60.6	105.2	40.1
Kweneng West	1,769	1733	29.5	71.9	48.6	72.2	71.9	71.9	65.3	52.1	63.5	108.6	37.3
Lobatse	692	673	143.3	143.5	120.5	143.5	143.5	143.5	136.2	135.6	145.6	146.1	95.5
Mabutsane	540	529	21.1	55	44	52.6	55	55	56.3	56.7	58.8	101.6	42.6
Mahalalapye	3764	3,678	91.4	88.5	61	84.1	88.5	88.5	80.3	78.5	79.1	60.1	39.6
Ngami	3,296	3,227	86.7	76.6	68.9	80.5	76.6	76.6	74	81.2	79.1	112.1	68.2
North East	2016	1,970	30.9	48.6	46	48.6	48.6	48.6	47.4	47.8	49.9	76.4	29.4
Okavango	2427	2,381	68.5	72.1	52.7	71	72.1	72.1	65.8	65.7	67.6	59.7	37
Selibe Phikwe	1157	1,123	159.8	109.2	111	110.9	109.2	109.2	103.9	102.8	104.5	90.1	106.8
Serowe /palapye	5280	5,145	76.9	82.3	44.6	80	82.3	82.3	75.8	74.3	72.7	96	48.5
South East	2179	2,111	95.4	78.4	64	79.6	78.4	78.4	74.6	73.9	71.8	75	89.2
Tutume	5114	5,000	38.8	74	31	68.6	74	74	64.4	60.6	59.2	64.5	31.3

Annex Table 2: Percentage coverage of immunization and Vitamin A in 2016

District Name	2016 Number of Live Births	2016 number of Surviving Infants	BCC	HepB, birth dose	DTP3	IPV1	Polio3	HepB3	Hib3	Pneu-mo3	Rotavirus last dose	MCV2	VitA 1	TT2+/Tdz+	PAB
Bobirwa	1640	1565	79	74	104	61	56	104	104	99	98	104	60	49	49
Boteti	1584	1511	76	70	123	100	186	123	123	114	105	95	94	94	94
Chobe	572	546	76	76	105	66	52	105	105	175	84	87	62	84	84
Francistown	2361	2253	186	166	116	31	205	116	116	107	105	97	71	88	88
Gaborone	5621	5363	72	68	80	36	885	80	80	80	75	101	61	75	75
Gantsi	1071	1021	105	104	80	52	50	80	80	78	69	95	78	48	48
Goodhope	1291	1232	49	45	68	55	161	68	68	67	56	106	63	32	32
Hukuntsi	501	478	93	93	108	77	60	108	108	105	107	100	113	71	71
Jwaneng	429	409	183	150	142	113	30	142	142	144	130	99	75	122	122
Kanye/Moshupa	3023	2884	59	56	74	49	139	74	74	78	74	110	63	30	30
Kgalagadi South	707	675	61	62	87	65	45	87	87	85	80	89	94	29	29
Kgatleng	2226	2124	80	78	98	54	244	98	98	92	87	93	79	48	48
Kweneng East	6422	6127	101	55	44	23	399	44	44	42	40	190	82	19	19
Kweneng West	1135	1083	34	35	102	67	57	102	102	98	93	91	79	44	44
Lobatse	630	601	140	135	142	91	83	142	142	133	127	87	191	81	81
Mabutsane	338	323	36	30	82	36	42	82	82	86	160	95	85	48	48
Mahalapye	2720	2595	115	113	113	62	142	113	113	111	105	153	51	48	48
Ngami	2195	2094	121	121	115	71	184	115	115	107	100	86	60	63	63
North East	1451	1385	37	35	72	47	511	72	72	72	65	93	64	41	41
Okavango	1474	1406	99	97	116	49	62	116	116	113	100	90	75	59	59
Selibe Phikwe	1082	1032	176	176	113	53	151	113	113	112	108	101	98	95	95
Serowe/Palapye	4288	4091	96	98	101	68	335	101	101	99	93	92	110	57	57
South East	2152	2053	91	91	46	44	573	46	46	46	47	99	88	36	36
Tutume	3605	3440	46	43	101	50	173	101	101	99	78	91	67	44	44

Annex Table 3: Percentage coverage of immunization and Vitamin A in 2017

District Name	2017 Number of Live Births	2017 number of Surviving Infants	BCG	HepB, birth dose	DTP3	IPV1	Polio3	HepB3	Hib3	Pneumo3	Rotavirus last dose	MCV1	RCV1	MCV2	VitA 1	TT2+/Tdz+
Bobirwa	2409	2368	53	54	73	58	73	73	73	69	71	73	73	71	72	38
Boteti	2324	2285	83	80	89	94	85	89	89	84	79	86	86	76	88	68
Chobe	709	697	73	71	86	104	83	86	86	82	87	86	86	79	82	95
Francistown	5962	5861	100	97	74	84	73	74	74	74	68	73	73	68	137	58
Gaborone	9027	8875	76	76	85	97	85	85	85	84	85	89	89	77	91	100
Gantsi	1487	1462	87	86	80	80	80	80	80	79	73	78	78	78	78	13
Goodhope	1561	1535	50	50	64	65	65	64	64	65	57	65	65	64	73	40
Hukuntsi	790	777	61	54	73	79	76	73	73	75	70	75	75	67	100	60
Jwaneng	819	805	142	141	87	98	90	87	87	85	78	92	92	83	181	91
Kanye/ Moshupa	3210	3156	111	99	82	88	81	82	82	82	76	81	81	79	77	59
Kgalagadi South	1012	995	58	48	65	61	63	65	65	66	57	71	71	74	90	42
Kgatlang	2750	2704	75	74	82	82	82	82	82	81	77	86	86	80	79	60
Kweneng East	4998	4914	82	82	69	67	63	69	69	68	64	69	69	68	70	36
Kweneng West	1469	1444	35	32	90	97	91	90	90	90	82	86	86	90	89	50
Lobatse	1011	994	91	82	99	105	99	99	99	95	89	97	97	86	149	81
Mabutsane	541	532	28	25	69	52	64	69	69	65	73	69	69	68	79	40
Mahalapye	4063	3995	83	82	80	86	77	80	80	76	76	79	79	76	60	41
Ngami	3362	3305	99	77	68	62	68	68	68	69	63	69	69	73	74	54
North East	1385	1361	40	40	73	81	73	73	73	73	69	72	72	75	65	57
Okavango	2504	2462	79	73	92	53	92	92	92	91	76	65	65	62	95	38
Selibe Phikwe	1296	1274	129	127	82	120	91	82	82	85	76	85	85	78	92	78
Serowe/ Palapye	5202	5114	86	86	86	91	87	86	86	86	86	87	87	84	100	64
South East	1199	1179	158	157	76	80	76	76	76	74	73	80	80	80	74	86
Tutume	3090	3037	51	49	65	63	58	65	65	64	69	67	67	65	125	37

Annex Table 4: Percentage coverage of immunization in 2018

District Name	2018 Number of Live Births	2018 number of Surviving Infants	BCC	HepB, birth dose	DTP_HepB_Hib3	IPV1	Polio3	Pneumo3	Rotavirus last dose	MCV1/MR1	TTz+/Tdz+
Bobirwa	2454	2,413	52.8	52.8	80.4	78.0	75.3	78.6	75.8	79.6	36.4
Boteti	2368	2,328	90.1	90.1	95.8	92.9	89.8	95.2	83.2	93.3	79.4
Chobe	723	711	73.3	73.3	88.8	84.0	89.9	94.6	93.6	91.5	81.1
Francistown	6674	6,562	93.9	93.9	68.8	64.6	67.3	67.9	63.7	70.2	58.6
Caborone	9199	9,043	77.7	77.7	87.8	80.9	86.3	86.1	82.2	93.4	92.0
Gantsi	1516	1,490	91.8	91.8	86.6	84.2	84.8	86.0	83.4	86.2	53.2
Good Hope	1591	1,564	45.9	45.9	72.4	68.0	70.9	71.3	68.1	70.3	42.3
Hukuntsi	885	870	49.7	49.7	58.2	58.6	59.9	59.3	59.5	51.8	52.6
Jwaneng	834	820	151.7	151.7	92.3	88.1	88.8	86.7	79.9	85.8	95.2
Kanye Moshupa	3125	3,072	64.9	64.9	84.3	83.5	84.6	83.9	82.9	89.1	46.4
Kgalagadi	1032	1,014	48.4	48.4	70.5	64.6	68.2	71.4	63.6	65.6	36.0
Kgatleng	2802	2,755	71.3	71.3	85.0	80.2	83.7	80.3	78.9	89.0	57.8
Kweneng East	5093	5,007	82.6	82.6	69.1	66.1	67.2	66.9	62.9	69.4	35.1
Kweneng West	1497	1,472	30.9	30.9	94.4	91.8	92.1	93.7	89.1	94.5	48.8
Lobatse	1030	1,013	93.7	93.7	87.7	75.5	84.1	86.4	85.0	84.2	70.3
Mabutsane	551	542	27.2	27.2	77.7	70.9	74.6	77.3	73.1	74.6	52.2
Mahalapye	4140	4,070	81.6	81.6	81.0	77.7	75.2	78.1	75.5	79.9	45.4
Ngami	3426	3,368	85.1	85.1	71.4	68.7	66.3	69.3	64.0	67.3	50.6
North East	1550	1,524	34.8	34.8	65.5	65.5	67.0	65.3	64.6	66.5	58.1
Okavango	2552	2,509	59.0	59.0	63.4	61.8	60.6	62.9	61.9	65.1	39.3
Selibe-Phikwe	1321	1,298	121.0	121.0	69.0	68.8	67.4	69.6	69.0	73.1	71.9
Serowe Palapye	5301	5,211	79.3	79.3	87.7	83.9	87.7	87.7	84.5	88.2	61.2
South East	1222	1,201	166.6	166.6	86.5	82.4	83.5	84.9	82.9	80.9	79.1
Tutume	3148	3,095	53.8	53.8	65.3	64.8	51.6	61.8	60.5	61.3	28.0

Annex Table 5: Growth monitoring for the under 5 in 2015 across the districts

Sn.	District	Malnutrition					%Growth failure	%Ration received	Pop Under 5
		% Attendance	%moderate	%severe	%Total	%severe			
1	Bobirwa	92.1	2.9	0.5	3.4	0.5	67	10078	
2	Boteti	97.9	2.5	0.8	3.3	0.8	60.9	8948	
3	Chobe	92.8	2.8	0.8	3.6	1.1	63.4	2503	
4	Francistown	73.3	1.8	0.3	2.1	0.4	59.9	11693	
5	Gaborone	52.1	1.2	0.2	1.4	0.4	38.4	20392	
6	Gantsi	96.6	5.7	1.9	7.6	1.6	52	4770	
7	Good Hope	77.4	4.1	0.7	4.8	0.5	61.2	8448	
8	Jwaneng	79.1	1.3	0.2	1.5	0.7	55.4	1887	
9	Kanye/Moshopa	88.8	3.1	0.5	3.6	0.9	54.9	13269	
10	Kgalagadi North	96	5.3	1.9	7.2	3.1	65.8	2288	
11	Kgalagadi South	91	3.6	0.7	4.3	0.6	69.3	4049	
12	Kgatleng	93.6	2.8	0.5	3.3	0.9	66.7	9593	
13	Kweneng East	95.4	2.5	0.4	2.9	0.7	49.3	25931	
14	Kweneng West	100.8	4.8	0.9	5.7	1.4	67	6490	
15	Lobatse	90.4	1.9	0.3	2.2	0.6	59.9	3180	
16	Mabutsane	146.5	4.9	1.1	6	0.9	68.8	1608	
17	Mahalapye	81	3.7	0.6	4.3	1.3	54.9	15055	
18	Ngamiland	105.3	1	0.3	1.3	0.4	59.3	10466	
19	North East	106.1	2.6	0.5	3.1	0.9	60.2	6739	
20	Okavango	91.2	1.8	0.3	2.1	0.7	65.5	8584	
21	Selibe-Phikwe	84.3	1.3	0.3	1.6	0.7	65.8	5487	
22	Serowe/palapye	89.8	2.4	0.5	2.9	0.7	68.6	22228	
23	South East	102.7	2.2	0.3	2.5	0.7	51.7	6742	
24	Tutume	88.4	2.4	0.4	2.8	1.1	64.2	20373	
	National	90.8	2.6	0.5	3.1	0.8	59.9	230801	

Annex Table 6: Growth monitoring for the under 5 in 2016 across the districts

Sno	District	Malnutrition							%Ration received	Pop Under 5
		% Attendance	%moderate	%severe	%Total	%Growth failure	%severe	%Total		
1	Bobirwa	75.5	3.6	0.5	4.1	0.4	81.2	12600		
2	Boteti	87.8	3.2	0.8	4	0.8	67.9	10157		
3	Chobe	76.2	3.2	1.5	4.7	0.9	67.9	2943		
4	Francistown	74	1.6	0.2	1.8	0.2	53.3	11284		
5	Gaborone	48.3	1.5	0.3	1.8	0.4	29.6	20000		
6	Gantsi	73.7	6.4	2.2	8.6	2.6	47.5	6332		
7	Good Hope	75.3	4.6	0.7	5.3	0.6	33.2	7821		
8	Jwaneng	82.8	2	0.1	2.1	1.9	46.2	1701		
9	Kanye/Moshopa	72.1	2.9	0.4	3.3	0.9	39.8	18839		
10	Kgalagadi North	85.4	6	1.9	7.9	4.1	55	2501		
11	Kgalagadi South	88.3	4.7	0.8	5.5	0.6	65.5	3949		
12	Kgatleng	76.4	2.9	0.6	3.5	1	57.9	11493		
13	Kweneng East	72.1	2.8	0.5	3.3	0.6	52.5	33963		
14	Kweneng West	84	5.7	0.9	6.6	1.3	72.8	7510		
15	Lobatse	97.4	1.7	0.3	2	0.9	34.3	2834		
16	Mabutsane	116.7	6.2	1.4	7.6	0.8	54.9	2214		
17	Mahalapye	63.6	4.6	0.8	5.4	1.2	70.2	20254		
18	Ngamiland	79.5	1.4	0.3	1.7	0.3	64.9	13581		
19	North East	83.3	2.2	0.4	2.6	0.6	74.2	8708		
20	Okavango	76.7	2.2	0.5	2.7	0.7	65.3	9614		
21	Selibe-Phikwe	94.2	1.4	0.2	1.6	0.5	79.7	4955		
22	Serowe/palapye	117.7	2.5	0.5	3	0.7	81.8	17261		
23	South East	70.4	2.5	0.3	2.8	0.6	34.1	9552		
24	Tutume	114.4	2.8	0.5	3.3	1.1	75.1	14097		
	National	81.2	2.9	0.5	3.5	0.8	56.1	254163		

Annex Table 7: Growth monitoring for the under 5 in 2017 across the districts

Sno.	District	% Attendance	Malnutrition			% Total	%Growth failure	%Ration received	Pop Under 5
			%moderate	%severe	%severe				
1	Bobirwa	68.6	3.2	0.4	3.6	0.5	40.7	13343	
2	Boteti	81.8	2.9	0.8	3.7	0.8	50.4	11187	
3	Chobe	79.5	2.5	1.8	4.3	0.5	48.5	3016	
4	Francistown	71.1	1.6	0.2	1.8	0.3	38.8	11487	
5	Gaborone	47.9	1.1	0.3	1.4	0.3	37	20440	
6	Gantsi	75.6	7.4	2.3	9.7	2.5	43.6	6520	
7	Good Hope	75.6	3.9	0.5	4.4	0.2	52.7	7970	
8	Jwaneng	83.3	1.7	0.2	1.9	1	32.5	1730	
9	Kanye/Moshopa	64.7	2.9	0.4	3.3	0.7	48.6	18839	
10	Kgalagadi North	86.3	5.6	1.2	6.8	3	58.9	2562	
11	Kgalagadi South	91.4	4.8	0.8	5.6	0.6	49.5	3949	
12	Kgatleng	75.6	2.9	0.5	3.4	1.1	44.5	11746	
13	Kweneng East	67.6	2.6	0.4	3	0.6	40.7	35016	
14	Kweneng West	83.1	4.4	0.7	5.1	1	76.6	7638	
15	Lobatse	86.9	1.3	0.3	1.6	0.6	46.9	2829	
16	Mabutsane	103.3	5.5	1.1	6.6	0.9	54.2	2277	
17	Mahalapye	63.6	4.1	0.8	4.9	1.3	62.3	21287	
18	Ngamiland	75.9	1.6	0.4	2	0.3	53.4	13876	
19	North East	79.2	2	0.5	2.5	1.3	48.7	8882	
20	Okavango	80.2	2	0.5	2.5	0.5	32.3	9964	
21	Selibe-Phikwe	88	1.3	0.2	1.5	0.3	47.7	4950	
22	Serowe/palapye	119.9	2.9	0.5	3.4	0.9	56.9	16398	
23	South East	64.6	2	0.2	2.2	0.3	43.9	9973	
24	Tutume	142.3	3.1	0.7	3.8	1.2	64.8	12151	
	Ntional	79.6	2.7	0.5	3.2	0.7	47.9	258030	

Annex Table 8: Growth monitoring for the under 5 in 2018 across the districts

Sno.	District	% Attendance	Malnutrition			%Total	%Growth failure	%Ration received	Pop Under 5
			%moderate	%severe	%severe				
1	Bobirwa	65.7	3.1	0.6	3.7	0.5	59.4	14131	
2	Boteti	85.8	3.2	0.9	4.1	1	53.4	10664	
3	Chobe	76.7	2.4	0.5	2.9	0.4	62.6	3092	
4	Francistown	69.5	1.5	0.2	1.7	0.6	66.4	11694	
5	Gaborone	54.5	1.1	0.2	1.3	0.3	39.3	20890	
6	Gantsi	76.2	8.4	2.5	10.9	2.8	64.6	6709	
7	Good Hope	74.5	3.5	0.4	3.9	0.3	59.7	8122	
8	Jwaneng	86.1	2.1	0.2	2.3	0.2	39.5	1760	
9	Kanye/Moshopa	63.4	2.7	0.4	3.1	0.8	58.1	19793	
10	Kgalagadi North	82.3	5.2	1.3	6.5	3.5	70.9	2623	
11	Kgalagadi South	91	4.9	0.7	5.6	0.4	69	3949	
12	Kgatleng	74.6	3.1	0.5	3.6	1	54.9	12004	
13	Kweneng East	71.5	2.1	0.4	2.5	0.5	65	36101	
14	Kweneng West	81.8	4.1	0.6	4.7	0.6	75.6	7768	
15	Lobatse	85.8	1	0.3	1.3	0.8	61.5	2823	
16	Mabutsane	103.4	5.3	1	6.3	0.9	52.2	2340	
17	Mahalapye	67	3.7	0.6	4.3	0.9	66.1	22372	
18	Ngamiland	80.1	1.8	0.4	2.2	0.3	61.6	14179	
19	North East	77.7	1.8	0.3	2.1	0.5	70.8	9060	
20	Okavango	35.3	2.7	0.6	3.3	0.7	49.4	9976	
21	Selibe-Phikwe	84.2	2	0.3	2.3	0.5	64	4945	
22	Serowe/palapye	136.5	2.6	0.5	3.1	0.7	67.2	15578	
23	South East	64.6	1.6	0.2	1.8	0.8	57.9	10411	
24	Tutume	140.1	2.9	0.5	3.4	0.8	67.8	12159	
	National	77.6	2.7	0.5	3.2	0.6	60.0	263143	

Annex Table 9: Reporting rates of selected indicators across the districts for 2015 through DHIS2

District	ART	EPI	HIV Testing Services	HIV Testing and Counseling	Maternal and Perinatal	Out-Patient and Preventive Health ASRH	Out-Patient and preventive health Statistics	PMTCT	TB Monitoring	Under 5 Death	Cervical Cancer Screening
Botswana	ND	ND	ND	0.38	13.9	2.5	43.5	ND	0.36	ND	ND
Boteti	ND	ND	ND	1.5	10	1.9	9.8	ND	ND	ND	ND
Charlehill	ND	ND	ND	ND	41.7	ND	ND	ND	ND	ND	ND
Chobe	ND	ND	ND	ND	5.6	51	ND	ND	ND	ND	ND
Francistown	ND	ND	ND	ND	ND	49	15.9	ND	0.78	ND	ND
Gaborone	ND	58.9	ND	45.1	109.7	32.6	6.3	0.95	43.8	ND	ND
Gantsi	ND	10.9	ND	22.2	104.2	79.8	ND	ND	ND	ND	ND
Good Hope	ND	ND	ND	ND	3.3	58.3	36	1.8	8.1	ND	ND
Jwaneng	ND	24.2	ND	36.7	77.8	89.8	80.1	ND	ND	ND	ND
Kanye	ND	89.4	ND	84.3	83.3	79.7	32.3	100.6	90.1	ND	ND
Kgalagadi North	ND	ND	ND	ND	4.2	ND	ND	ND	ND	ND	ND
Kgalagadi South	ND	6.8	ND	ND	98.6	41.3	52.3	2.7	ND	ND	ND
Kgatleng	ND	10.4	ND	18.3	122.2	68.3	21	ND	70.3	ND	ND
Kweneng East	ND	ND	ND	6	56.3	40.4	25.6	ND	7.1	ND	ND
Kweneng West	ND	ND	ND	84.8	50	63.3	9.5	33.7	ND	ND	ND
Lobatse	ND	ND	ND	ND	64.6	88.6	5.3	ND	ND	ND	ND
Mabutsane	ND	0.69	ND	ND	87.5	69.4	0.69	ND	ND	ND	ND
Mahalapye	ND	44.4	ND	0.19	45.8	61.5	5.9	ND	35	ND	ND
Moshupa	ND	ND	ND	46.9	ND	ND	19.1	ND	ND	ND	ND
Ngamiland	ND	4.5	ND	10.9	49.1	15.7	7.8	ND	94.5	ND	ND
North East	ND	ND	ND	14.6	6.7	85	7.9	ND	ND	ND	ND
Okavango	ND	28.5	ND	ND	ND	ND	0.85	ND	ND	ND	ND
Palapye	ND	81.9	ND	37.6	47.2	27.7	ND	ND	ND	ND	ND
Selibe-Phikwe	ND	ND	ND	ND	39.6	41.7	4.6	ND	ND	ND	ND
Serowe	ND	ND	ND	64.7	55	28.6	2.1	ND	ND	ND	ND
South East	ND	22	ND	82.7	91.7	65.8	6.8	ND	63.3	ND	ND
Tutume	ND	16.1	ND	8.6	91.7	65.8	60.8	ND	15.3	ND	ND
National	0.0	17.2	0.0	14.2	38.0	39.9	11.1	6.9	15.7	0.0	0.0

Annex Table 10: Reporting rates of selected indicators across the districts for 2016 through DHIS2

District	ART	EPI	HIV Testing Services	HIV Testing and Counseling	Maternal and Perinatal	Out-Patient and Preventive Health ASRH	Out-Patient and preventive health Statistics	PMTCT	TB Monitoring	Under 5 Death	Cervical Cancer Screening
Botswana	21.3	118.5	ND	54.3	8.3	4.8	101.3	89.7	22.8	ND	12.7
Boteti	23.8	185.1	ND	37.1	36.7	12.9	21.1	32.2	91.3	ND	ND
Charlehill	20	ND	ND	25	52.8	4.2	26.7	25	10	ND	ND
Chobe	22	37	ND	56.8	2.8	27.6	0.52	25	13	ND	2.3
Francistown	17.1	22.5	ND	108.3	34.5	49.5	22.9	ND	99	ND	9.6
Gaborone	21.3	108.1	ND	60.5	39.6	16.9	72.6	95.5	60.1	ND	76.1
Gantsi	25	109	ND	92.2	125	92.3	ND	91.7	97.6	ND	24.4
Good Hope	ND	97.8	ND	91.7	56.7	45.1	66.9	55.6	82.2	ND	9.8
Jwaneng	21.2	81.3	ND	87.9	75	74.2	99.4	81.8	87.9	ND	ND
Kanye	5.2	166.1	ND	82.9	133.3	85.3	172.1	91.7	92.6	ND	68.2
Kgalagadi North	26.7	1.7	ND	21.1	8.3	1.1	40	26.1	ND	ND	3.3
Kgalagadi South	22	101.1	ND	0.76	86.1	57.6	57.6	96.2	63.6	4.9	28.2
Kgatleng	27	102.7	ND	76.8	54.2	67.5	96.5	60.5	80.8	ND	19.8
Kweneng East	7.8	129.5	ND	72	79.2	33.1	183.8	83.1	99.6	ND	30.8
Kweneng West	ND	141.3	ND	80.4	39.6	76.5	137.1	83.7	45.5	ND	49.2
Lobatse	22.2	73.5	ND	10.7	100	59	4.5	16.7	72.4	ND	89.4
Mabutsane	25	71.5	ND	ND	83.3	58.3	56.9	ND	71.3	ND	87
Mahalapye	38.5	103.5	ND	51	63.5	77.4	120	18.5	87.8	ND	3.3
Moshupa	21.1	11.8	ND	18.4	54.2	ND	93.1	36.5	52.5	ND	0.56
Ngamiland	25	238.5	ND	58.8	55.6	31.1	197.3	35	90.5	ND	8.6
North East	25	105.5	ND	94.4	96.7	86.8	22.7	2.1	76.2	ND	53.8
Okavango	14.1	24.1	ND	6.2	ND	ND	84.6	ND	21	ND	ND
Palapye	14.2	86.7	ND	75.3	50	52.4	52.2	5.4	59.4	ND	40.3
Selibe-Phikwe	22.2	ND	ND	ND	81.3	56.3	127.8	33.3	21.9	ND	86.5
Serowe	24.1	180	ND	80.2	300	86.5	39.8	83.3	71.8	ND	50.9
South East	55.6	68.1	ND	77.4	91.7	64.4	ND	69.2	75.8	ND	31.1
Tutume	14.3	125	ND	84.1	226	80	136	82.8	91.4	ND	79
National	20.6	73.6	0.0	43.8	55.3	37.0	52.9	41.0	57.4	4.9	21.1

Annex Table 11: Reporting rates of selected indicators across the districts for 2017 through DHIS2

District	ART	EPI	HIV Testing Services	HIV Testing and Counseling	Maternal and Perinatal	Out-Patient and Preventive Health ASRH	Out-Patient and preventive health Statistics	PMTCT	TB Monitoring	Under 5 Death	Cervical Cancer Screening
Bobirwa	78.8	81.9	ND	60.3	16.7	21.8	57	99.2	34.6	ND	42.8
Boteti	94.6	46.1	1.1	94.7	100	22.7	20.9	100.4	81.4	ND	40.1
Charleshill	80	86.7	ND	97.5	94.4	73.3	102.5	99.2	56.7	ND	31.7
Chobe	93.2	72.4	ND	99.4	69.4	50.9	69.1	100.8	41.2	ND	14.4
Francistown	50	82.9	ND	93.8	104.6	44	88.5	95.3	91	ND	39.7
Gaborone	83.1	63.3	ND	58.8	78.1	25.9	70.3	104.6	56.5	ND	73.6
Gantsi	99.4	76.1	ND	89.6	100	88.3	74	100	93.3	ND	80.1
Good Hope	ND	72.1	ND	68.4	36.7	15.1	41.5	86.9	78.6	48.5	25
Jwaneng	73.5	96	ND	100	100	98.3	91.1	100	100	ND	100
Kanye	79.9	96.1	ND	72.1	100	70.2	85.3	93.6	91.2	ND	77.9
Kgalagadi North	100	86.7	ND	93.8	91.7	75.5	77.7	99	75.5	ND	75.5
Kgalagadi South	86.4	97.8	ND	41.3	94.4	95.8	19	100	24.6	100	39.7
Kgatleng	107	100	ND	77.1	93.1	51.4	48.6	97.8	85.8	3	44.8
Kweneng East	47	99	ND	95.1	91.7	50.9	88.9	100	100	25.2	50
Kweneng West	ND	63.7	ND	84.3	73.3	77.3	59.4	94	74.4	ND	83
Lobatse	88	93.9	ND	77.4	95.8	51.3	18.6	84.8	42.3	7.1	34.8
Mabutsane	100	99.3	ND	99.1	100	83.3	97.9	99.1	95.4	ND	97.2
Mahalapye	62.2	71.6	ND	60	80.2	56.8	71.7	71.1	81.9	ND	42.4
Moshupa	74.4	90.6	ND	58.6	58.3	14.7	89.4	100.5	60.8	ND	81.7
Ngamiland	76	64.7	ND	41.5	75	2.2	46.4	96.4	79.2	ND	11.9
North East	100	99.2	ND	100	100	96.8	70.1	99.5	63.4	ND	96
Okavango	55.2	15.2	ND	41.4	14.6	ND	26.3	0.29	36.6	3.2	0.29
Palapye	75	80.8	ND	64.3	47.2	62.6	78	89.8	38.2	ND	44.9
Selibe-Phikwe	72.2	115.6	ND	75	100	83.3	116.7	100	80.2	ND	95.8
Serowe	99.1	90.3	ND	92.9	95	79.4	68.9	99.6	72.6	74.2	97.4
South East	98.6	92.8	ND	85.7	97.2	75	1.1	100	83.3	ND	69.7
Tutume	86.5	70.8	ND	71.7	72.9	70.3	59.3	97.4	67.3	ND	87.9
National	80.6	77.7	1.1	74.9	73.8	47.8	51.8	77.6	65.8	18.0	43.7

Annex Table 12: Reporting rates of selected indicators across the districts for 2018 through DHIS2

District	ART	EPI	HIV Testing Services	HIV Testing and Counseling	Maternal and Perinatal	Out-Patient and Preventive Health ASRH	Out-Patient and preventive health Statistics	PMTCT	TB Monitoring	Under 5 Death	Cervical Cancer Screening
Bobirwa	75.4	69.3	61.1	15.7	65.3	20.5	66.7	99.6	27.6	0.62	64.9
Boteti	93.8	44.4	71.2	23.9	100	73.9	48	100	84.5	ND	86.9
Charleshill	96.7	49.2	61.8	22.9	88.9	89.2	55.8	98.3	8.3	ND	46.7
Chobe	100	76.6	72.6	25	88.9	37.5	67.9	100	20.1	ND	16.7
Francistown	89.1	98.1	66.1	23.4	119.4	58.7	86.1	97.6	90.8	ND	47.4
Gaborone	87.8	69.4	61.8	19.8	55.2	47.7	73.8	102.9	50	ND	79.7
Gantsi	99.4	66	75	23	100	84.4	70.2	100	96.7	4.4	94.9
Good Hope	70.1	78.2	64.8	18.3	43.3	75.9	79.7	100	65.3	34.4	33.3
Jwaneng	90.9	99	72	25	100	100.8	96.7	99.2	100	25	100.8
Kanye	99.5	90.4	59.8	19.1	91.7	73.4	86.3	100	99.5	38.9	83.3
Kgalagadi North	100	87.9	76.6	24	91.7	76	83	100	89.2	ND	88
Kgalagadi South	68.6	95.6	70.7	24	90.3	92	28.6	100	1.1	84.4	66.3
Kgatleng	96.3	86.6	73.3	19.2	88.9	77.2	59.9	100	84.2	2.5	85.8
Kweneng East	82.5	73.6	67.1	21.8	91.7	58.3	63.8	100	94	14.1	52.6
Kweneng West	50	67.7	66.7	27.5	76.7	92.7	72.8	100	88.1	0.32	93.7
Lobatse	97.2	94.4	68.5	19.6	100	69.2	75.5	90.9	10.9	7.7	39.4
Mabutsane	100	95.1	65.2	21.3	91.7	63.9	88.2	100	96.3	ND	91.7
Mahalapye	86.7	70.4	56.3	18.2	94.8	84.3	69.5	100	83	ND	56.6
Moshupa	98.3	92.7	96.3	20.1	70.8	5.4	69.4	100	95.6	22.5	90
Ngamiland	88.5	57.9	68.1	20	63.9	29.2	59.9	100	93.8	ND	28.1
North East	99.8	99.8	74.5	24.3	100	96.5	97.4	100	81.7	12.7	99.5
Okavango	66.7	70.7	65.1	12.6	27.1	8.9	72.4	100	42.7	1.3	5.2
Palapye	89.7	84.4	60.7	19.2	66.7	75.8	83.1	100	55.4	ND	77.7
Selibe-Phikwe	91.7	95.8	75	30.8	100	84.4	110.2	100	57.3	ND	96.9
Serowe	100	97.4	72.9	21.7	100	86.7	89.8	100	71.8	41.3	100
South East	100	90.5	78.8	26.8	100	82.6	43.6	100	68.9	47	84.8
Tutume	98	63.4	52.6	16.5	42.7	72.7	64.8	100	80.9	ND	75.5
National	88.4	78.5	68.2	21.3	79.6	57.5	70.3	99.6	52.4	9.5	60.7

Annex Table 13: Reporting rates of selected indicators across the districts for 2019 through DHIS2

District	ART	EPI	HIV Testing Services	HIV Testing and Counseling	Maternal and Perinatal	Out-Patient and Preventive Health ASRH	Out-Patient and preventive health Statistics	PMTCT	TB Monitoring	Under 5 Death	Cervical Cancer Screening
Bobirwa	85.8	75.5	71.3	ND	83.3	19.6	75.8	91.7	2.6	ND	21.4
Boteti	84.6	41.9	84.8	ND	91.7	71.2	48.1	91.7	79.5	ND	38.5
Charlehill	90.8	44.6	70.1	ND	25	80	47.5	87.5	15.8	ND	7.5
Chobe	91.7	71.5	86.9	ND	44.4	57.9	61.7	91.7	42.2	ND	ND
Francistown	81.7	81.7	86	ND	92.6	60.5	83.3	91.7	82.5	ND	40.6
Gaborone	83.1	62.3	84.1	ND	42.7	49.3	63.4	91	28.5	ND	11.9
Gantsi	89.3	56.3	91.2	ND	91.7	74.4	55.1	89.7	90.6	ND	45.5
Good Hope	83.3	79.3	76.6	ND	78.3	66.4	79.2	92.1	57.9	6.4	38.2
Jwaneng	91.7	89	84	ND	91.7	90.8	91.7	89.4	91.7	ND	91.7
Kanye	91.2	79.4	73.5	ND	75	72.6	78.2	91.7	91.7	48.4	84.3
Kgalagadi North	90.1	74.2	90.1	ND	79.2	85.9	76.9	91.1	76.5	ND	75.5
Kgalagadi South	83	90.4	58.7	ND	80.6	81.1	21.7	91.7	ND	88	8.7
Kgatleng	87	86.2	83.1	ND	87.5	75.8	74.9	90.1	61.9	47.5	50.6
Kweneng East	80.4	72.5	78.7	ND	81.3	51.7	63	91.7	90.6	9.8	9.2
Kweneng West	88.2	62.2	84.3	ND	65	78.7	71.6	88.3	80.1	0.64	82.3
Lobatse	91.7	88.9	73.2	ND	87.5	2.6	74.5	90.9	53.2	4.5	3.8
Mabutsane	90.7	91.7	78.8	ND	87.5	88.9	83.3	91.7	89.8	ND	88
Mahalapye	85.7	64.5	80.9	ND	77.1	72.5	63.3	91.7	85.7	ND	4.9
Moshupa	91.7	85.5	93.1	ND	85.4	2.5	90.1	91.1	91.7	37	1.7
Ngamiland	87.5	53.3	63.7	ND	34.3	31.8	57.2	74.4	78.2	ND	9.7
North East	90.5	91.5	78.6	ND	90	80.8	81	91.7	28.5	27.6	66
Okavango	89.6	71.1	86.6	ND	40.6	8.9	74.3	90.2	40.7	0.27	17.8
Palapye	86.8	86.9	88.4	ND	80.6	85.5	80.4	91.4	28.5	ND	25.3
Selibe-Phikwe	91.7	91.7	89.6	ND	91.7	80.2	91.7	90.6	75	ND	83.3
Serowe	90.8	88.3	83.3	ND	91.7	84.8	86.2	91.7	71	87.3	91.2
South East	91.7	90.3	90.4	ND	91.7	74.3	86.4	91.7	21.2	78	87.1
Tutume	87.4	58.9	78.2	ND	77.1	63	56.5	91.4	82	ND	12.9
National	88.3	73.3	79.0	18.7	71.1	49.6	68.5	90.9	53.0	13.8	28.0

