Republic of Botswana

MINISTRY OF HEALTH & WELLNESS

BOTSWANA HEALTH DATA COLLABORATIVE
ROADMAP
2020 -2025

Towards a harmonized Health Information and Monitoring & Evaluation system in Botswana

REPUBLIC OF BOTSWANA

MINISTRY OF HEALTH AND WELLNESS

BOTSWANA HEALTH DATA COLLABORATIVE ROADMAP

2020-2025

**Towards a harmonized Health Information
and
Monitoring & Evaluation System in Botswana**

Botswana Health Data Collaborative

World Health Organization

Table of Contents

List of Tables

List of Figures

Foreword

Globally, there is a great call for quality data for decision making especially in this era of Sustainable Development Goals (SDGs) including Universal Health Coverage (UHC). Thought leaders in the space of Health Information System have committed to the call for improvement of data and statistics. Similarly, countries have taken heed to this call.

The Government of Botswana is as well committed to achieving the SDGs including UHC. The Government recognises that good data plays a vital role in the SDGs and the UHC agenda. As such there is a general commitment to improving the Health Information System as well as the Monitoring and Evaluation system in the country. Botswana commits to embrace a collaborative approach to improve the health information system in line with the global call for more aligned and harmonised approach in implementation of priorities for improving data and statistics.

In this regard, the Health sector through the leadership of the Ministry of Health and Wellness has developed the Botswana Health Data Collaborative Roadmap. The Roadmap outlines the strategic approach towards strengthening the health information system and monitoring & evaluation in Botswana. It outlines the key priorities areas that all stakeholders working in the space of HIS and M&E have been called to rally behind for a more efficient, effective, transparent and more accountable Health Information System.

The Roadmap further spells out smart investments that actors in the space of Health Information System and M&E in Botswana are called to adopt to strengthen basic health information and measurement systems. It also spells out common priorities around which stakeholders including partners and donors are called to align. Additionally, it presents a platform for development partners, technical experts, implementers, civil society organizations, private sector and policy makers to work together for improved health information system and M&E especially in this era of SDGs.

The roadmap is an important management and governance tool that will assist the entire health sector in maintaining a clear focus on the goals of health information system in the country. This will ensure that the sector is working towards common Health Information Goals in a synchronized manner and is expected to result in the reduction of duplication of efforts and enhanced efficiencies in the use of existing resources.

It is my sincere hope that all stakeholders will join in the implementation of this roadmap and contribute to the desired improvement in data and statistics for improved decision making in the health sector.

Dr. Lemogang Kwape
Minister of Health and Wellness

Acknowledgements

The development of this roadmap marks an important milestone in the efforts of the health sector to ensure that the Health Information, Monitoring and Evaluation System is efficient and that all actors are rallying behind a common system. The use of the roadmap will ensure availability of relevant data and information to track progress of the health sector including progress towards the national, regional and global goals such as the Sustainable Development Goals (SDGs) and Universal Health Coverage.

The roadmap was developed through a consultative process among the health sector stakeholders under the stewardship of the Ministry of Health and Wellness. The document was developed using information from existing sector documents and received extensive contributions from a wide range of stakeholders and individuals working in the public, private and related establishments in the health sector.

The Ministry of Health and Wellness wishes to acknowledge the contributions of all those who participated in the development of this roadmap. Sincere gratitude to the Minister for Health and Wellness, Honourable Dr Lemogang Kwape and the Permanent Secretary Mr Solomon M. Sekwakwa for providing the overall leadership and guidance. Special thanks to the Deputy Permanent Secretary - Health Services Monitoring & Evaluation and Quality Assurance (HSMEQA) Ms Baile Moagi for tirelessly coordinating all the Botswana Health Data collaborative activities including development of this roadmap. Our appreciation also goes to the members of the various Health Data Collaborative Technical Working Groups (TWGs) namely the Data and Information use TWG; the Civil Registration and Vital Statistics TWG; the Digital Health TWG; and the Quality and Safety of Care TWG. These TWGs provided very valuable contributions to this roadmap and worked tirelessly to develop the TWG specific work plans.

The appreciation is also extended to the Director of HSMEQA, Dr Kitenge Kalenga and his technical team in the department for their exemplary work. These include, Ms Judith Nawa, Mr Tony Chebani, Mr Rampa Mosweu, Ms Penny Makuruetsa, Ms Siwulani Sebetso, Ms Tshepo Selwe, Ms Judith Letebele, Ms Kesegofetse Setlhare, Mr Patrick Tema, Mr Israel Mohibidu, Dr Tsholofelo Molefi and Mr Sinka Matengu.

Further the Ministry of Health and Wellness appreciates the financial and Technical support from World Health Organization (WHO). Special thanks to WHO representatives Dr Josephine Namboze and Dr Tebogo Madidimalo for providing technical support through- out the process.

The Ministry would like to thank all those whose names may have been inadvertently left out but who were either consulted during the development of the BHDC Roadmap or who have contributed in one way or another to this process. Without their contributions this work would not have been possible.

_____

Mr. Solomon Sekwakwa.
Permanent Secretary
Ministry of Health and Wellness

List of Abbreviations

BHDC: Botswana Health Data Collaborative
CRVS: Civil Registration and Vital Statistics
DHIS2:   District Health Information Software 2
EMR: Electronic Medical Record
GDN: Government Data Network
HIS: Health Information System
ICD: International Disease Classification
IHSP: Integrated Health Services Plan
IPMS: Integrated Patient Management System
IT: Information Technology
M&E: Monitoring and Evaluation
MOHW: Ministry of Health and Wellness
NGOs: Non-Governmental Organizations
PIMS: Patient Information Management System
SC: Steering Committee
SDGs: Sustainable Development Goals
SOPs: Standards Operating Procedures
TWG: Technical Working Group
UHC: Universal Health Coverage
WHO: World Health Organization
FY: Financial Year

CHAPTER 1.0   INTRODUCTION

In the era of Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC), there has been a growing need for quality data for improved decision making and accountability for results. In the Summit on Measurement and Accountability for Results in Health that was held in June 2015, the global health leaders, decision-makers, thought leaders and implementers from countries representing development partners, partner country governments, and civil society endorsed the Health Measurement and Accountability Post-2015 Roadmap and 5-Point Call to Action. The Call to Action identified a set of priority actions and targets that aims at strengthening country data and accountability systems for the post 2015 sustainable development agenda.

This was a follow up of considerable impetus in several areas related to measurement and accountability including: greater attention toward universal registration of vital events (births, deaths including causes of death, marriages and divorces); a push toward comprehensive household surveys that meet changing country needs; and use of technologies for 'real-time' measurement and reporting to deliver synthesized or summary results for decision-makers in simple, easily understood ways that drive action. Despite this impetus, countries still had diverse challenges in the space of Health Information system.

i. Increase the level of efficiency and investment by Government and partners
ii. Strengthen country capacity on data management (data collection to use) at all levels of the health system.
iii. Ensure that countries have well-functioning population health data sources.
iv. Maximize effective use of the data revolution, based on open standards, to improve health facility and community information systems including administrative data.
v. Promote country and global governance with citizens' and community's participation for accountability through monitoring and regular, inclusive transparent reviews of progress and performance at all levels.

Figure 1: The 5 point call to action

In 2015, the global health leaders working in the area of data, Monitoring and Evaluation launched the health data collaborative whose aim is to ensure that different stakeholders in national, regional and global health are able to work together more effectively to make better use of resources, and by doing so help to accelerate impact of investments and improvements in country health information systems. The Health Data Collaborative aims to put the IHP+ principles of country ownership and alignment into practice by translating them into a joint operational plan that specifies concrete collective actions at country and global levels.

Since 2015, several countries have launched country specific Health Data Collaborative with the aim of harmonizing the data and M&E systems in the country and ensuring that all actors in this space work towards a common M&E framework. Such countries include Bangladesh, Kenya, Tanzania, and Malawi. Botswana has also developed and launched The Botswana Health Data Collaborative bringing all actors in the space of HIS/M&E towards a more aligned and harmonized approach in implementation of HIS/M&E priorities. This is also aimed at improving the existing health data systems as well as improvement in generation of required evidence for better informed planning and decision making. This document therefore spells out the roadmap towards strengthening the Health Information System and Monitoring & Evaluation in Botswana through the Health Data Collaborative approach. The stakeholders working in the space of HIS and M&E have participated in defining the proposed BHDC structures as well as the priorities as spelt out in this roadmap.

1.1   The Purpose of Botswana Health Data Collaborative Roadmap

As already earlier mentioned, health sector under the stewardship of the Ministry of Health and Wellness conducted an assessment of the Health Information System and Monitoring and Evaluation in the country. The objectives were to assess the Health information systems; the alignment of the strategic documents related to Monitoring and Evaluation; and the Monitoring and Evaluation systems. Several challenges were identified ranging from poor coordination, poorly aligned documents, inadequate utilization of research data, multiple reporting tools, poor use of information for planning and decision making among many other challenges. It is in the backdrop of this assessment (the challenges and the recommendations) that it was necessary to establish and launch the health data collaborative in order to rally the actors in the M&E and health information towards a common M&E and HIS system for purposes of efficiency, transparency, accountability and ultimately lead to a better improved health system.

In-order to guide the implementation of identified priorities for Health Information and M&E system, the health sector through the leadership of the Ministry of Health has developed the Botswana Health Data Collaborative Roadmap. The Roadmap outlines the strategic approach towards strengthening the Health Information system, Monitoring and Evaluation in Botswana. It outlines the key priorities areas that all stakeholders working in the space of HIS and M&E are called to rally behind for a more efficient, effective, transparent and more accountable health information system. The Roadmap further spells out smart investments that actors in the space of Health Information System and M&E in Botswana are called to adopt to strengthen basic health Information and measurement systems. Additionally, it presents a platform for development partners, technical experts, implementers, civil society organizations, private sector and policy makers to work together for improved Health Information System and M&E especially in this era of SDGs.

The roadmap is an important management and governance tool that will assist the entire health sector in maintaining a clear focus on the goals of health information system in the country. This will ensure that the sector is working towards common health information Goals in a synchronized manner and is expected to result in the reduction of duplication of efforts and enhanced efficiencies in the use of existing resources.

1.2   The Process of Development

The development of the roadmap has been through a consultative process. The health sector began by identifying the challenges through the assessment of the Health Information and Monitoring and Evaluation System. The assessment report and the findings thereof were validated and agreed on by all stakeholders through a consultative process. Botswana then expressed the interest of establishing the heath data collaborative to address all the challenges as identified in the assessment.

Several Technical Working Groups were formed with representation from all actors in Health Information Systems and Monitoring & Evaluation. The formation of the working groups was based on identified priorities in the assessment report. The teams identified key strategic focus areas for improving health information system in the country. Further engagement was done with partners and other sector players who also identified key focus areas for the Botswana Health Data Collaborative.

Based on the discussions from these groups and the stakeholder's meetings, technical assistance was sought from World Health Organisation country office to source consultancy services to develop the roadmap which was shared to all sector players for further inputs and validation.

1.3   Positioning HDC within the Global SDG and UHC agenda

The SDG 3 seeks to ensure healthy lives and promotion of wellbeing for all, at all ages. Additionally, the achievement of UHC expressed under target 3.8, is deemed as critical to the realization of other health-related targets and indicators within the SDGs. In order to achieve the SDG targets for universal health coverage, countries need to ensure that, health measures as exemplified by health data and information leads to good health and wellbeing for all, at all ages. As such countries are called upon to;

i)   Maximization of healthy lives for their people – efforts at disease control should not just focus on the disease
ii)   Wellbeing – a reflection of the populations level of satisfaction with their health – is taken into consideration, and
iii)   Healthy lives are maximized for all age groups – from children to elderly persons

To ensure appropriate movement towards health and wellbeing as envisioned in SDG 3, data and health information and knowledge is critical. The HDC approach therefore comes in handy in an effort to rally all stakeholders to work towards better health information and M&E system in-order to track progress on SDGs and UHC. As such, it is envisaged that through the Health Data Collaborative approach the health sector will focus on information and knowledge around the following key areas;

i)   The 3 outcomes that define Universal Health Coverage, and
ii)   The 6 health & related service outcomes areas key for attaining SDG 3;
iii)   The 4 outputs that define performance of the health systems
iv)   The Health inputs/processes for the Health system

The framework for health systems evolution that is required to support the realization SDGs and UHC is elaborated by WHO/AFRO and presented in Figure 2 below:

WHO/AFRO framework for Health Systems Development for UHC in the context of SDGs
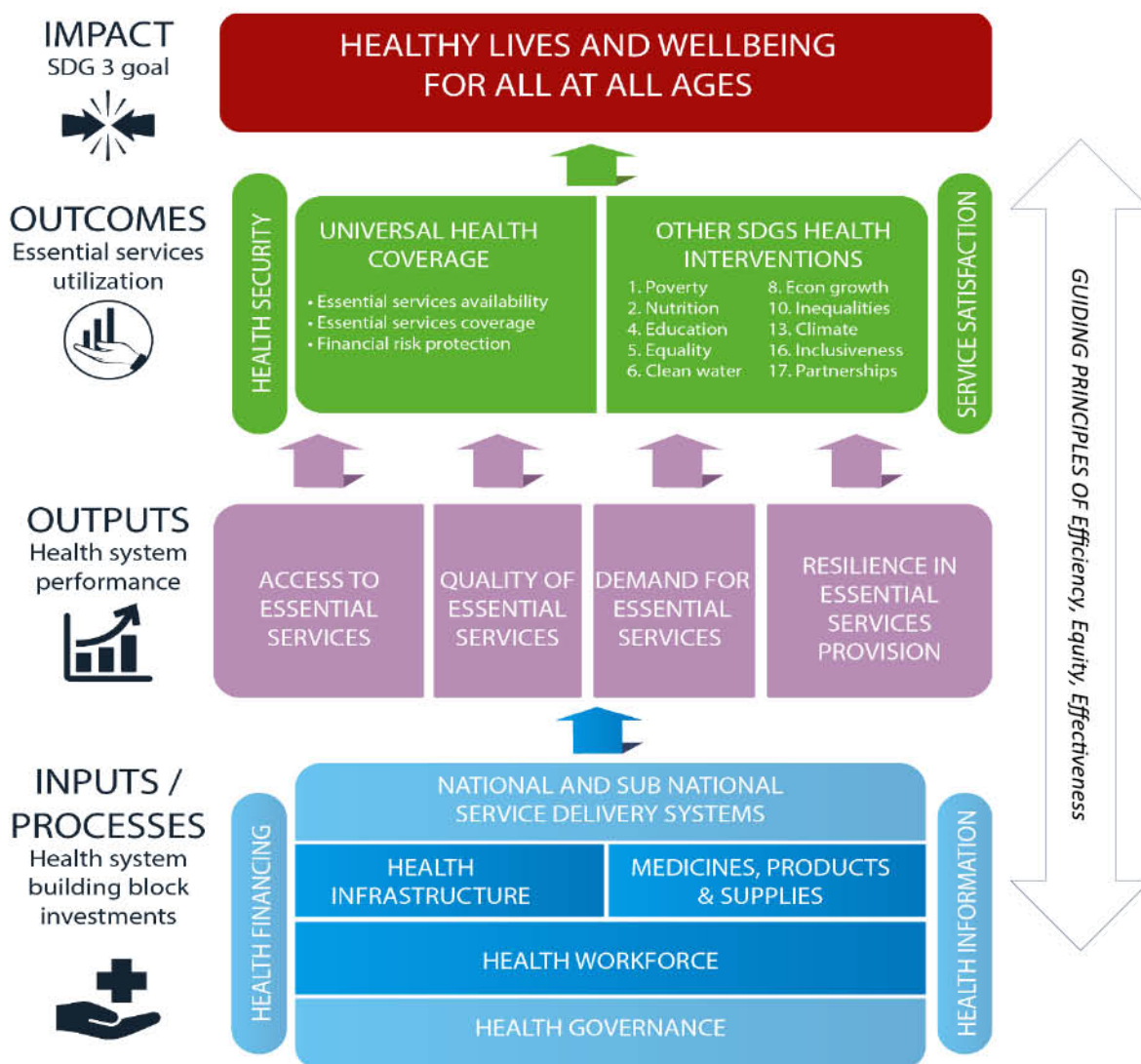
Figure 2; WHO/AFRO framework for Health systems Development for UHC in the context of SDGs

1.4   Status of Health Information System in Botswana

The health sector in Botswana under the stewardship of the Ministry of Health carried out a baseline assessment of Health Information and Monitoring and Evaluation System in 2019. The assessment revealed key progress as well as challenges in key HIS/M&E priority areas. The following section provides key highlights of the findings of the assessment which form the basis of defining the Botswana Health Data Collaborative Roadmap.

1.4.1   Health Information Governance

The Government of Botswana has made great strides in ensuring availability of key policy and strategic guiding documents within the health sector and beyond. These include the National Development Plan 11 2017-2023;

The National Development Performance framework 2017-2023; The National Health Policy 2011; Integrated Health Service Plan (IHSP)2010-2020, Botswana National Health Monitoring and Evaluation Plan 2014-2019; Botswana National Health Data Management Policy 2014 and a draft eHealth Strategy 2016-2020. The documents are however poorly aligned in terms of timelines as well in terms of priorities and indicators for monitoring within the health sector. The M&E Plan that is supposed to guide the monitoring of implementation of the IHSP is by and large a Ministry of Health and Wellness document rather than a health sector M&E Plan. It also predates the IHSP by 4 years and therefore is also not aligned to the SDG agenda. The indicators are also poorly aligned among the various documents hence limiting a comprehensive monitoring of the overall health sector performance.

1.4.2 Partnerships and coordination

Implementation of the health agenda and the monitoring thereof calls for functional multi-sectoral platforms and stakeholder coordination mechanisms. According to the HIS and M&E Assessment Report, the partnerships in HIS and M&E are at best poorly functional and in some cases non-existent. There is no multi-sectoral platform for M&E. In addition, there are no systematic and institutionalized stakeholder (including the private sector) participatory platforms on HIS and M&E issues, at national and district level. Partnership and engagement with the private sector is also very limited and on ad-hoc basis as there is no framework for the engagement.

1.4.3 Data and Information use

Data at the point of generation is captured through mixed systems in the country; paper based and, in some instances, electronic systems. The health sector is riddled with multiplicity of data collection and reporting tools. For example, the HIS and M&E Assessment 2019 found up to 42 registers in one health facility with 12 registers in one of the program areas, making data management process take a longer time. Equally heavy is the number of reports that health facilities have to make averaging between 23-30 reports monthly.

There exists parallel reporting system and data is not integrated into the mainstream reports at the national level. The current HMIS has data only from the public health facilities but neither from the private facilities nor NGO facilities, therefore underscoring the overall health services delivered to the general population. Further, there are no established feedback mechanisms for ensuring that the data flow process is seamless between all the levels of the health system. Further capacity on data analytics is limited and hence hindering the effective use of information for planning and decision making.

1.4.4 Disease Surveillance

Disease surveillance systems detect, report, and respond to notifiable communicable diseases. Like in many other countries especially among the low and middle income bracket, Botswana disease surveillance system experiences challenges including; lack of integration of disease surveillance data into the routine reporting data system (such as the DHIS2); inadequate participation of communities and health workers in notifying medical officials about suspected cases and outbreaks, and the failure to comprehensively analyze the data for informed decision making.

Immediate action needs to be taken on any data generated through notifications for the sole purpose of outbreak control. As such, disease surveillance data need to be integrated with existing routine data system.

1.4.5 Civil Registration and Vital statistics

The mandate of Civil and National Registration department is to register all births, deaths, marriages, and divorces that occur in Botswana regardless of citizenship status. The Ministry of Health and Wellness (hospitals and maternity clinics) personnel completes the births and death notification forms (CRB-2 and CRD-2 respectively) upon occurrence of birth and death. The completed forms are then taken to the Civil Registration offices for production of the birth and death certificates. This manual and lack of a comprehensive civil registration system

and capacity of health care workers on certification of cause of death as outlined in ICD codes at facility level was found by the assessment as a gap that requires to be addressed. Additionally, not all details are registered with the cause of death. It is even complex for deaths occurring in the community which are either not captured in the system or if registered are with no proper cause of death.

1.4.6 Health Surveys and Health Research

Population health surveys are crucial in assessing population health status, service coverage, health related behaviors and risk factors. The country undertakes several surveys covering all the key service delivery areas. Statistics Botswana coordinates these surveys supported by the MOHW and partners. The latest demographic health survey was conducted in 2017 (Botswana Demographic Survey Report 2017) and the Population and Housing Census in 2011.

On the other hand, Institutions of higher learning in the country do conduct research. However, the information from research is rarely used for decision making within the health sector. There is a lack of research repository, and a platform bringing together researchers and policy makers to foster uptake of research evidence into policy.

1.4.7 Digital Health System

Digital revolution is rapidly changing the landscape of health information systems in countries. Botswana has made substantial investments in building strong systems for health data management through adoption of advanced technology. Botswana was among the first countries in Sub Saharan Africa to roll out an electronic health system, popularly known as the Integrated Patient Management System (IPMS) to all public hospitals. Besides the IPMS, the country has other information systems (PIMS, OpenMRS, and DHIS2 etc.) which are operational at various levels. Currently, electronic data from these different data sources go to the data warehouse through the Government Data Network (GDN). In summary, the country has three strong milestones in IT infrastructure: significant efforts to automate data generation and reporting processes; existence of government data network and infrastructure; and existence of a data warehouse.

However, these systems are vertical systems and do not share data readily. The full utilization of the systems is hampered by factors such as unstable power supply; poor internet connectivity; lack of systems integration (interoperability); limited capacity among health care workers; poor enforcement of SOPs for introduction of new software within the sector.

1.4.8 Investments in the health Information system

The estimated health sector allocation for the Ministry of Health and Wellness is 17% of the total government budget which is more than the percentage of 15% proposed by the Abuja Declaration (WHO, 2011). However, it is not clear how much of this goes towards the Health Information, Monitoring and Evaluation system. There is also indirect funding from partners who prefer to channel their funds directly to field activities. There are three major donor agencies providing support in different ways and at different levels: UNAIDS, PEPFAR and Global Fund. The funding by these partners is mainly through implementing partners (e.g. Jhpiego, FHI 360, ITECH, CDC, and ACHAP) who have their own workplans which they implement themselves with involvement and participation of the MOHW staff only at implementation stage.

CHAPTER 2.0 STRATEGIES FOR IMPROVING HEALTH INFORMATION AND M&E SYSTEM IN BOTSWANA

Botswana Health Data Collaborative overall aim is to rally all stakeholders to work together to improve the Health Information and Monitoring & Evaluation System (HIS and M&E) in the country. Such an approach will help in improving the challenges of the HIS and M&E existing within the health sector and as identified in the 2019 HIS and M&E Assessment Report.

2.1 The Guiding Principles for Botswana Health Data Collaborative

The following Principles shall guide in the operations of the Collaborative;
a. Promotion of country stewardship and ownership of health data.
b. Promotion of increased transparency and accountability in health data
c. Alignment and harmonized support for one country led platform (support around common HIS and M&E framework and plan)
d. Leveraging on existing structures within the country
e. Promote use of common sector plans including common M/E plans and enhance linkages between planning and Monitoring and Evaluation

2.2 Strategic goals towards improving health Information system

The strategic goals for improving the Health Information and Monitoring and Evaluation in the country include;
i. Strengthen the capacity for the country to collect quality health data and promote sharing and the use of information for planning and decision making
ii. Leveraging on the digital revolution to improve on the Health Information System
iii. Strengthening the Civil Registration and Vital Statistics
iv. Increasing, aligning and harmonizing the investments towards health Information system
v. Improving the Governance and coordination for Health Information system
vi. Leveraging on quality health information system to improve quality and safety of care.

2.2.1. Strengthen the Capacity for the country to collect quality health data and promote sharing and the use of Information for decision making

As Botswana makes progress towards attainment of the SDGs, including UHC and other regional and national priorities, quality data and the promotion of the use of health information thereof shall be very critical. The scope shall include, improving the health information system that includes facility level data, disease surveillance as well as data on health systems investments. The improvement shall include making the routine health facility information system more transparent; application of data management standards and data quality assurance. Additionally, this will also include integration of the community health information system into the national health information system. The strategic approach towards this shall include;

Table 1; strategies towards quality health data and information use

S No.	Strategic objective	Strategic Interventions
1	Improved Data Governance within the health sector by 2025	Definition of data architecture with clear standards for the country. This will ensure that the country has uniform data architecture and functional standards for data.
		Common plans (Health sector M&E Plan)
		Definition of common Health sector indicators
		Define common datasets
		Harmonization of data tools (e.g. data collection; reporting tools; registers)
		Definition of data exchange standards
2	Ensure availability of high quality data across the health sector and use it to review progress against the Health sector plans and the SDGs by 2025	Institutionalize the data quality audits/reviews within the health sector
		Generate quality data for key indicators (these serve as basis for reporting on National and International goals)
		Strengthen the disease surveillance system • Integration of surveillance data with the routine reporting system • Promote analysis and dissemination of data especially in areas with frequent outbreaks
3	Institutionalize health sector reviews to measure progress in health and health system performance by 2025	Focus on regular analysis of data at all levels of the health system for assessing progress and for performance in reviews
		Health sector performance reviews • Quarterly reviews • Annual reviews • Mid- term and end term reviews of strategies
4	Enhance data sharing and feedback and accountability across the health sector by 2025	Avail Data on health coverage and outcomes, health systems and ensure access to all stakeholders according to their need
		Create platforms for data and knowledge sharing across the health sector
		Community engagement and feedback (have information synthesized and provided to beneficiaries and community to promote demand and accountability)
		Explore use of accountability tools—dashboards; score cards
5.	Improve Capacity for using health statistics and data for clinical and population health program decision making by 2025	Build the relevant skills for data management across the health sector • Capacity building on data management, data collection and collation, • Capacity building on data analytics, interpretation, presentation and delivery
		Institutionalize knowledge translation platforms bringing together researchers, policy makers; health workers and other actors in the health sector
6.	By 2025 have in place a regular comprehensive program of relevant health surveys/ Promote the use of quality survey data across the health sector	Establish regular program for relevant health surveys • Quality population census carried out • National health surveys that respond to the needs of multi sector stakeholders carried out periodically as per plans (Population health surveys; health facility surveys)
		Harmonization of approaches for various health surveys to enhance efficiency

2.2.2 Leveraging on the digital revolution to improve on the Health Information System

The main purpose is to strengthen the relevant skills, to coordinate systems development, implementation and deployment. Additionally, this will include sustaining and monitoring the digital health ecosystem. The country has identified seven (7) key pillars towards improving eHealth in the country. The strategic focus areas for BHDC are based on these seven pillars that include; Leadership and Governance, Strategy and Investment, Service and Applications, Standards and Interoperability, Infrastructure, Legislation, Policy and Compliance and Workforce

Table 2; Strategies for leveraging on digital health to improve health information

Strategic objectives	Strategic interventions
Strategic Pillar 1-Leadership and Governance for eHealth	
Management and coordination of the implementation of the eHealth Strategy strengthened by end of 2020	Establishment of eHealth structures to manage and coordinate eHealth activities at various levels of implementation
Strategic Pillar 2; Strategy and Investment	
Sustainable funding for implementation of eHealth Strategy attained by 2021	Advocacy for increased government budget allocation for eHealth
	Mobilize for private sector to provide financial support for implementation of the eHealth strategy
	Mobilize donor funding for implementation of the eHealth strategy
Strategic Pillar 3; Service and Applications	
Botswana's eHealth Platform established by 2024	Identify priority user requirements and relevant applications to address these needs
	Facilitate data sharing through creation of a data warehouse /data repository (Establishment of National Data Warehouse)
	Establish approach to the development of eHealth services and applications
	Establish a home-grown EMR for Botswana
Patients' experience of care improved by implementing priority applications by 2021	Establish a web-based engagement tool to support implementation of the eHealth Strategy
Reporting improved by developing the DHIS2 platform by 2020	Establish one Integrated DHIS2 system as the default reporting system with other systems exporting data to it.
Strategic Pillar 4; Standards and interoperability	
Health information availability and sharing strengthened by 2021	Enhance broad integration and synergy across multiple Health Information systems / ensure interoperability of health information systems
	• Establish a standards and interoperability framework for Botswana
	• Design the interoperability platform
	• Implement the interoperability platform
Strategic Pillar 5; Infrastructure	
Access to eHealth information and tools improved by end of 2023	Connect all health facilities in the country with minimum bandwidth
	Provide users with devices required for accessing information
	Address equipment needs e.g. computers; barcodes readers; scanners
	Establish a health unique identifier (UID) and Master Patient Index (MPI) for all people in Botswana
	Establish registries and national data dictionaries
Strategic Pillar 6; Legislation, Policy and Compliance	
A regulatory framework for eHealth established and functional in the country by end of 2023	Review and update policies and laws that govern eHealth in the country
	Monitor compliance with the policies and laws
Strategic Pillar 7; Workforce	
Capacity of the Ministry of Health and Wellness for implementing the eHealth Strategy strengthened by 2021	Develop a Human Capital Development plan for those managing and leading the eHealth Strategy
	Implement the Human Capital Development plan for those managing and leading the eHealth Strategy
Terms and conditions of service for eHealth professional staff improved by 2022	Develop a staff retention policy for eHealth professional staff

2.2.3 Strengthening the Civil Registration and vital statistics (CRVS)

Civil registration and vital statistics provide a very critical component of the health data. Botswana has committed to strengthen this health information sub sector through the following strategies;

Table 3; strategies for improving CRVS

SNo.	Strategic objective	Strategic interventions/actions
1.	By 2021 all births are registered through the civil registration system	• Improve the infrastructure including ICT infrastructure for CRVS and linkage with other health sector data platforms
		• Improve on the registration of births
		• Community programs on importance of birth registration
		• Generation of representative statistics using available data.
2.	By 2025, all deaths are reported and registered including causes of death	• Improve the registration of deaths
		• Improve on cause of death certification through use of standards
		• Disaggregation of deaths data by age, sex and by causes
		• Enhance use of ICD in hospitals / capacity on certification and coding according to standards (ICD)
		• Use of verbal autopsies to ascertain cause of death at community level • Capacity building across the sector including the community on verbal autopsies
		• Generation of representative statistics using available data

2.2.4 Increasing, aligning and harmonizing the investments towards Health Information system.

One of the tenets of the Health Data Collaborative is to have more efficient and harmonized investments by stakeholders in implementation of priorities of Health Information system and Monitoring and Evaluation. Botswana Health Data Collaborative prioritizes a more harmonized investment in the Health Information system.

Table 4; strategies towards efficient investments in health information and M&E system

Sno.	Strategic objectives	Strategic interventions
1	By 2025, the government shall invest adequately in health information and Monitoring and evaluation system in the country.	Progressively increase the resources allocation to HIS/ M&E
2	By 2025, health sector stakeholders; development partners are fully aligned to a single country framework for Health Information system and M&E	One planning framework for the health sector
		One Monitoring and Evaluation framework for the health sector
		Mapping Governments /partners resources (who is doing what where and what resources)

2.2.5 Improving the Governance and coordination for Health Information System

Botswana Health Data Collaborative shall endeavor to build strong governance of the Health Information System.

Table 5; strategies for improving Governance and coordination for Health information system

	Strategic Objective	Strategic Interventions
1	By 2023, put in place all necessary legal safeguards /legal frameworks and standards for health information system	Put in place data management policies
		Put in place frameworks to enhance data security
		Adoption of standards for all aspects of monitoring of heath sector including public private sector
2	By 2021, Botswana health sector shall have fully functional HIS/M&E management and coordination structures	Establish HIS/M&E coordination structures at all levels
		Establish and operationalize BHDC coordination structures
		Establishment of data management units at all levels with clearly defined responsibilities
		Strengthen partnership with the private sector

2.2.6 Improving quality and safety of care

A strong Health Information system is a means to ensuring that quality and safe health services are provided to clients. As such Botswana Health Data collaborative (BHDC) shall endeavor to ensure that the strong Health Information system is positively linked to improved quality of care. Improving quality and safety of care hence becomes one of the major priorities of the Collaborative. The strategies towards this include;

Table 6; strategies for Improving quality and safety of care

	Strategic Objective	Strategic Interventions
1	Improved quality and safety of health care across the health sector in Botswana by 2025	Put in place necessary guiding policies ; strategies /guidelines, standards (e.g. Quality improvement framework ; clinical guidelines /protocols)
		Follow up on adherence to the existing guidelines /protocols
		Establish Quality Improvement teams across the heath sector
		Promote use of evidence informed practice (use of existing data and information to inform practice)
		Conduct mortality and morbidity reviews
		Conduct clinical audits
		Conduct client and employee satisfaction surveys
		Institutionalize the use patient charter
		Use providers charter
		Conduct capacity building on quality and safety of care. Institutionalise infection prevention and control surveillance.

CHAPTER 3.0 IMPLEMENTATION ARRANGEMENTS FOR BHDC ROADMAP

The roadmap shall be implemented by all the stakeholders in the space of HIS and M&E under the stewardship of the Ministry of Health and Wellness and within the existing health sector structures and processes as;

3.1 Alignment of BHDC roadmap with the Health Sector planning framework

The roadmap is anchored on the existing policy and strategic guiding documents. These include among others, the National Health Policy 2014 and the Integrated Health Strategic Plan (IHSP) 2010-2020. With the IHSP coming to an end in the year 2020, efforts shall be made to align the contents of this roadmap with the next strategic plan as well. Additionally, an Overall Health Sector Monitoring and Evaluation framework and plan shall be developed and shall be implemented in tandem with this roadmap. It is envisaged that the roadmap shall be implemented through specified actions spelt out in health sector operational plans at the national and sub-national levels. This roadmap includes a section of the Financial Year 2020/21 operational plans for the various BHDC Technical working groups.

3.2 The BHDC Governance and Coordination structures

The health sector has defined Governance structures to coordinate the BHDC priorities as follows;

3.2.1 The Steering Committee

The BHDC Steering Committee (SC) is the highest decision-making organ for BHDC and serves to advice on the HDC's technical and strategic direction. Further, the steering committee provides oversight of the HDC and promotes shared accountability of all HDC actors including partners in the country. The SC shall be responsible for fund raising /resource mobilization; decision making; high level advocacy for the BHDC. The team shall review, approve and validate workplans and reports from the BHDC technical working groups.

The SC shall establish strategies for building relationships and participation from a broad range of actors in health and especially those working in the space of Health Information System and Monitoring & Evaluation in the country, technical partners – domestic and international. Further the SC shall identify opportunities and incentives for greater alignment and improved efficiency.

The committee shall have representation of the key actors'/stakeholders' organizations including, development partners in Health; NGOs, the private sector, the civil society organization and line Ministries. The committee shall be chaired by the Ministry of Health and Wellness preferably through the Deputy Permanent Secretary of the Department of Health Services Monitoring & Evaluation and Quality Assurance.

The Botswana Health Data Collaborative shall comprise of institutions and entities, rather than individuals acting in a personal capacity. As such, the high-level agency participation in the SC serves to ensure that the HDC approach remains relevant and productive. The lead agencies leaders are senior decision-makers and have the capacity to provide technical and strategic advice and direction for the BHDC. Additionally, they are empowered within their respective organizations to promote the BHDC principles as well as aligning their agencies respective work plans to the BHDC priorities.

The SC shall seek to promote support for investing in health information systems – and the use of BHDC outputs in a broader health systems development context. Hence the committee shall export BHDC products to the leadership of the Ministry of Health and Wellness and to the country at large.

3.2.2 The Technical Working Groups

The Technical Working Groups (TWGs) shall focus on deliverables as agreed on by BHDC Steering Group. The TWGs are established for specific/particular technical work. The membership shall include technical members of key partners in HIS and M&E, civil society and non-governmental organizations, private sector, Ministry of Health and Wellness including the staff from the programs and sub national level (Districts), training institutions and representatives from other Government line Ministries and departments.

The main roles of the Technical Working groups include;
- Preparation of technical workplans including the resource requirements
- Review of progress/preparation of progress reports
- Seek to ensure Working Group (WG) function and are supported and productive
- Seek overlap and hence co-opts members as necessary

The TWGs shall meet as frequently as required depending on the technical tasks at hand. The teams will however be expected to have at least a minimum of monthly meetings. Each of the technical working group shall have several tasks based on the TWG's workplan. The Group shall report to the BHDC steering committee.

The BHDC specific technical working groups that have been established to drive the BHDC technical agenda are outlined below. The specific roles for each of the Technical working group are elaborated in Annex 1.

- **Data and Information Use Technical working group:**
  The overall aim of this Technical working group is therefore to promote use of information for planning and decision making. This in effect calls for action beyond the products for use but includes ensuring that the system is generating good quality data.
- **Digital Health Technical working group;**
  The team is expected to strengthen relevant skills to coordinate systems development, implementation and deployment
- **Civil Registration Technical Working Group;**
  This particular working group shall focus on strengthening the civil registration and vital statistics and ensuring that the relevant information is available for use by the stakeholders for decision making.
- **Quality of Care Technical working group**
  This group shall focus on improving the quality and safety of care across the health sector

3.2.3 The Secretariat;

The secretariat comprises of a technical management team drawn from the Ministry of Health and Wellness coordinated by the Department of Health Services Monitoring and Evaluation and Quality Assurance. The specific roles of the secretariat include;
- Administrative and communication role.
- Following up on the entire process – organizing process and information flows, managing resources and ensuring the progress is made
- Forms the link between the TWGs and the Steering committee
- Collates all the reports from the TWGs and reports to the steering committee.

It is envisaged that the secretariat role will be a permanent function and will carry out the day to day coordination of BHDC activities.

3.2.4 The District Health Stakeholders Forum;

The District Health Stakeholders Forum comprises of representation from all actors/stakeholders in health in the Regional Health Teams under the stewardship of the MoHW. This is an ideal platform for the HDC at the regional

level. The main purpose is to harmonize and align implementation of the M&E framework at the district level. The Forum is expected to hold meetings on a quarterly basis.

3.3 Linkage of BHDC coordination structures with health sector coordination structures

The BHDC structures are further linked and anchored to the overall health sector coordination structure; **the health sector partnership forum** and the government coordination structure (i.e. The **Sector Thematic Working Groups in this case the Social Upliftment Thematic Working Group**). This is to ensure that the health information agenda is represented in the overall Health sector agenda and that the coordination structures are aligned to the overall sector structures as per the HDC principles. This linkage further serves to achieve high level political coherence and support.
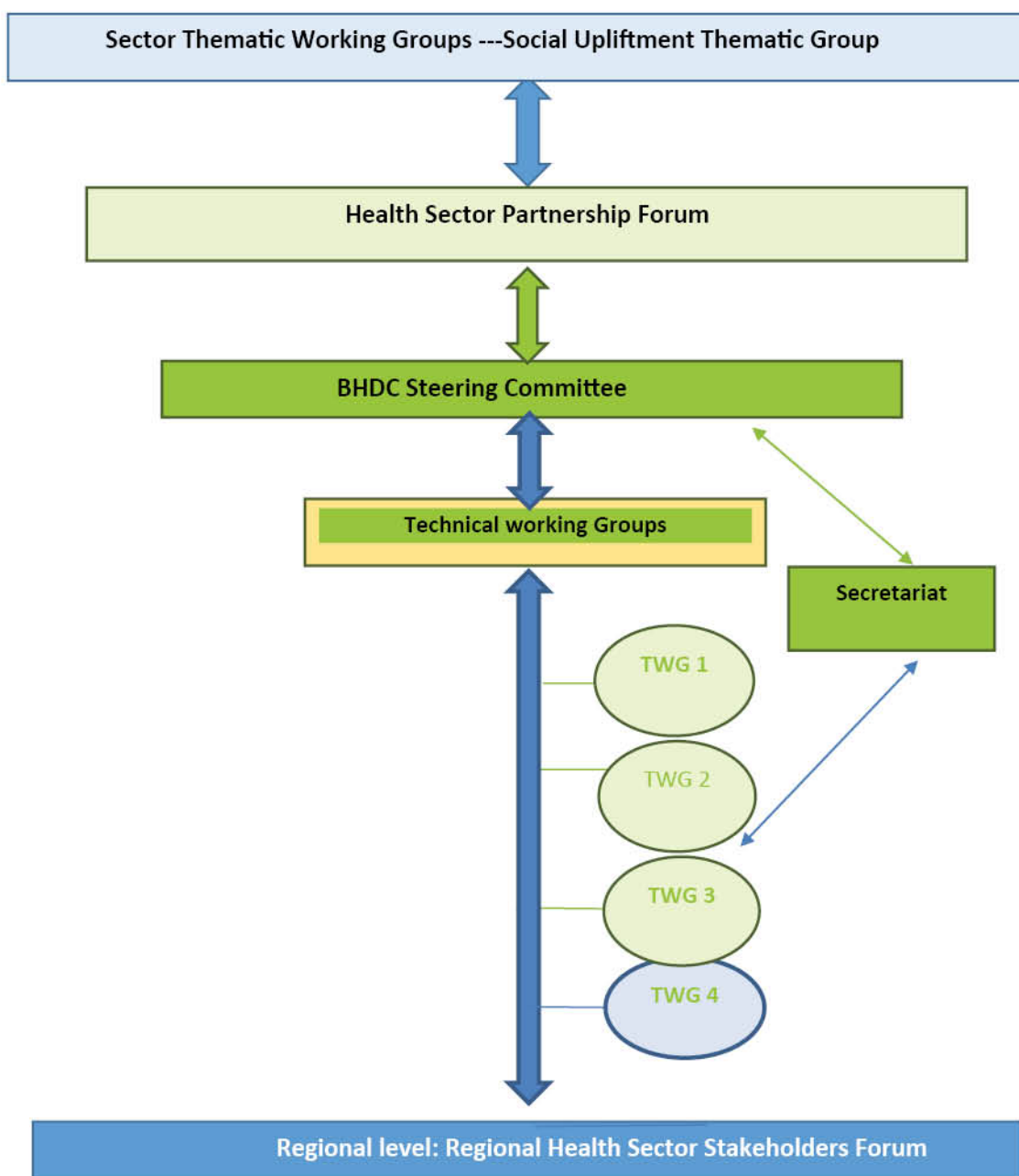
Figure 3; Botswana Health Data Collaborative Governance structures

3.4 Advocacy and Communication for BHDC

Effective communication with key stakeholders and the public is essential to ensuring the success of the Botswana Health Data Collaborative. This Roadmap will be implemented along with a communication strategy aimed at informing, educating and engaging all stakeholders to support the Health Data Collaborative initiatives. This will ensure that all stakeholders are aligned towards a harmonized Health Information and Monitoring & Evaluation system for Botswana.

Enhanced communication will promote BHDC agenda of ensuring that different stakeholders in the national and sub-national level are able to work together more effectively and efficiently to make better use of resources, and by doing so help to accelerate impact of investments and improvements in country Health Information and Monitoring &Evaluation systems. The communication strategy will create awareness, catalyze a positive attitude change towards public health services, and create behavioral changes towards better service utilization informed by data. Further communication will advocate for quality health data for planning and decision making as well as to promote healthy living with the general public.

The communication efforts shall be geared towards;
* Developing a strategic and content driven campaign aimed at raising awareness about Health Data Collaborative agenda
* Championing for an overall change in behavior of the target audience towards improving the existing Botswana's health data systems
* Behavior change towards improvement in generation of required evidence for better informed planning and decision making.
* Educating the public on the importance of healthy living.
* Highlights the importance of collaboration on data as one of the tenets towards achieving Universal Healthcare

Table 7; The BHDC communication blue print

Audience	Their interests	Channel of communication	Our interests	Role of communication
The general public	Access to affordable quality healthcare Access to information on healthy living To be treated with respect and confidentiality	Mass media; -interviews (TV & radio) -press release Social media Digital e.g. Website & microsite with educative information videos on YouTube and social platforms Lead generation landing page	To communicate the importance of quality data and linkage to their own health.	Educate and drive behavior change through the initiative
Health workers	Offer high quality services to clients Recognition for contributing to better health care	Relation building courtesy visits Docuseries Short videos Advertisements features on TV & print	To communicate on the importance of quality health data for informed decision making for client's health To communicate the link between quality data and health clinical outcomes (the health of the people)	Educate and drive behavior change through the initiative

Government, private sector partners & NGOs	-Publicity on their contribution to healthcare in the country -	Relation building courtesy visits Docuseries Short videos Advertisements features on TV & print	Partnership to effect change in health for the benefit of all	To inform and create interest in the initiative that will translate to partnerships
Media	News stories Human interest stories	Press briefing Launch event Feature cover event on location	-drive publicity around the 'HDC' initiative to reach the target audience. -position HDC as an organization that promotes healthy lifestyle choices -push the right messaging to our target audience	Drive publicity Inform Educate

In-order to reach as many target audiences as possible and hence ensuring success in achieving the communication objectives depending on the target groups, various channels of communication shall be used. These include among others, radio, Television, print media, social media and traditional media.

Figure 4; Media mix for communication

Best Media Mix
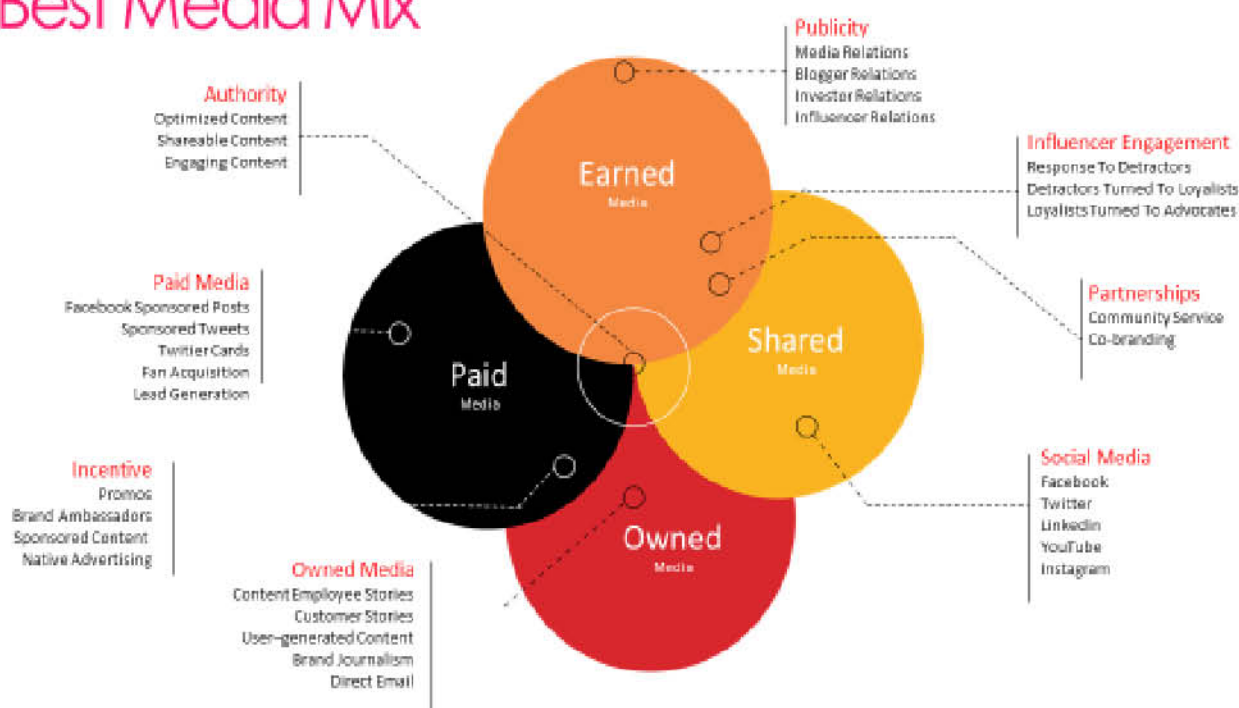
CHAPTER 4.0: MONITORING FRAMEWORK FOR BHDC ROADMAP

Monitoring and Evaluation for the health sector in Botswana shall be guided by the overall health sector comprehensive monitoring and Evaluation framework and plan. This will guide in tracking efforts   towards the health sector priorities as outlined in the health sector plans.

The priorities as outlined in the BHDC roadmap shall also be monitored in order to ensure that progress is being realized and that all stakeholders are committed to a common course of improving the Health Information and M&E system. The following framework shall guide the monitoring of the BHDC roadmap.

Table 8 M&E framework for priority BHDC actions

Strategic objective	Measure of success
Strategic Goal: Strengthen the Capacity for the country to collect quality health data and promote sharing and the use of Information for decision making	
Improved data governance within the health sector by 2025	• Relevant data governance policies and standards in place. • Policies and laws that govern eHealth in the country in use • National architecture and eHealth standards defined and agreed • Common health plans and M/E Plan in use across the health sector • Common health indicators in use across the health sector • Harmonized data and information tools in use across the health sector
Ensure availability of high quality data (including surveillance data) across the health sector and use it to review progress against the Health sector plans and the SDGs by 2025	• Quality of data /Data completeness; timeliness • % of facilities submitting timely, complete and accurate information • % of districts repotting on disease surveillance onto the default reporting system (DHIS2) • Effective real-time outbreak disease surveillance information
Institutionalize health sector reviews to measure progress in health and health system performance by 2025	• Proportion of Districts carrying out health sector performance reviews (e.g. quarterly, annual reviews) • National level health sector performance reviews (quarterly, annual, midterm, end term reviews)
Enhance data sharing and feedback and accountability across the health sector by 2025	• Reports produced and disseminated • Stakeholder's meetings held to disseminate /share information/ health reports • Number of Community engagement and feedback forums held • Community information packages produced and disseminated • Accountability tools available and in use (dashboards, score cards)
Improve Capacity for using health statistics and data for clinical and population health program decision making by 2025	Data managers with relevant skills • Proportion of staff trained on data management /data analytics • Functional Knowledge translation platforms
By 2025 have in place a regular comprehensive program of relevant health surveys / Promote the use of quality survey data across the health sector	Availability of National guideline on population-based surveys and other research • Quality population census carried out • Harmonized health surveys carried out
Strategic Goal: Leveraging on the digital revolution to improve on the Health Information System	
Botswana's eHealth Platform established by 2024	• Functional data warehouse (with relevant sector data and information and in use) • Botswana home grown EMR in use (% of facilities using the EMR)
Reporting improved by developing the DHIS2 platform by 2020	DHIS2 system in use as default reporting system in the sector (% of health facilities reporting onto the DHIS2)

Strategic objective	Measure of success
Strategic Goal: Strengthen the Capacity for the country to collect quality health data and promote sharing and the use of Information for decision making	
Health information availability and sharing strengthened by 2021	Interoperable health information system platforms in the health sector
Access to eHealth information and tools improved by end of 2023	Proportion of health facilities Connected with minimum bandwidth
	Proportion of facilities with adequate eHealth tools e.g. computers, scanners etc.
	Health unique identifier and Master Patient Index (MPI) for all people in Botswana in use (% of population using the MPI)
Strategic Goal: Strengthening the Civil Registration and vital statistics	
By 2021 all births are registered through the civil registration system	Birth registration coverage
By 2025, all deaths are reported and registered including with causes of death	• Proportion of hospitals using ICD standards • Death registration coverage • Verbal autopsy coverage • Cause of death (COD) coverage and quality Representative statistics reports
Strategic Goal: Increasing, aligning and harmonizing the investments towards health Information system in the country.	
By 2025, the government shall invest adequately in health information and Monitoring and evaluation system in the country	Proportion of the Government health expenditure invested in the Health Information/monitoring and Evaluation system. (% of Government health expenditure on HIS and M&E.)
By 2025, health sector stakeholders; development partners are fully aligned to a single country framework for Health Information system and M&E	• % of partners aligned to the common health sector plans and the M&E plans • % of expenditure for Health information and M&E allocated by partners
Strategic goal: Improving the Governance and coordination for Health Information system	
By 2023, put in place all necessary legal safeguards /legal frameworks and standards for health information system	• Put in place data management policies • Put in place frameworks to enhance data security • Adoption of standards for all aspects of monitoring of heath sector including public private sector
By 2021, Botswana health sector shall have fully functional HIS and M&E management and coordination structures	• Functional HIS and M&E coordination structures across the country • Functional coordination structures at the National level • % of Districts with HIS and ME unit • % of Districts with functional District Health Stakeholder's Forum • Functional health sector partnership framework
Strategic goal: Leveraging on Health information system to improve quality and safety of care	
Improved quality and safety of health care across the health sector in Botswana by 2025	• Availability of necessary policies, strategies, and SOPs to guide quality and safely of care • Proportion of Districts with quality improvement teams • Proportion of health facilities with quality improvement teams • Proportion of health facilities carrying out mortality and morbidity reviews • Number of clinical audits carried out • Number of supportive supervision done/proportion of Districts carrying out quarterly supportive supervision to the health facilities • Proportion of health facilities with client charters • % of clients satisfied with services/client satisfaction index • Employee satisfaction index

CHAPTER 5.0 BHDC OPERATIONAL PLAN FOR FINANCIAL YEAR 2020/21

Implementation of the strategic priority areas in the BHDC roadmap requires specific activities to be implemented and supported by relevant stakeholders in the country. The health sector has committed to the following specific priorities for the financial year 2020 /21.

Table 9: Operational plan for civil Registration and Vital statistics TWG

CIVIL REGISTRATION AND VITAL STATISTICS YR 2020 WORKPLAN –FY 2020/21												
Result area	Intervention	Quarterly Milestones	Expected Output	Timelines				Responsibility	Budget distribution (BW Pula)			
									Est. Cost	Available amount	Source	Gap
Policy/ strategy and guidelines formulation	End term Review of Civil Registration and vital statistics and identity management Investment plan 2015-2020	Development of TORs and Appointment of taskforce to coordinate the work	Civil Registration, vital statistics strategic plan end term review report	x				Department of Civil and National Registration	-	-	-	-
		Task force working meetings to develop draft report		x					25000			
		First stakeholders Consultative meeting on the draft report		x					15000			
		Second stakeholders consultative meeting on the draft report		x					25000			
		Taskforce working meetings to update draft report		x					10000			
		Report validation meeting by stakeholders		x					40000			
		Editing and printing of the report (print a 1000 copies @ 300)		x					300000			
		Dissemination of the report			x				120000			
	Development of Civil Registration and vital statistics Strategic plan (2021-2026	Develop a concept note and TORS for task team	Civil Registration strategic plan 2020-2025		x			Department of Civil and National Registration (DCNR)	-		-	
		Taskforce working meetings to develop draft strategy			x				30000			
		Consultative meetings (Internal and External			x				40,000			
		Taskforce working meetings to update draft strategy based on stakeholders' inputs			x				10,000			
		strategy document validation workshop			x				40000			
		Finalization. Editing. Printing				x			300,000			
		Document launch/ dissemination				x			30000			

CIVIL REGISTRATION AND VITAL STATISTICS YR 2020 WORKPLAN –FY 2020/21												
Result area	Intervention	Quarterly Milestones	Expected Output	Timelines				Responsibility	Budget distribution (BW Pula)			
									Est. Cost	Available amount	Source	Gap
Capacity Building and Technical assistance	1CD 11 training	Engage an ICD11 t raining consultancy to develop training materials and train Trainers of Trainers (TOTs)	Health workers trained on ICD 11	x				MOHW/ CRVSWHO	210,000		WHO	
		Training of 25 Trainers of Trainers (TOTs)			x			MOHW/CRVS	540,000		WHO	
		Training of 400 Medical doctors on ICD 11				x		MOHW/CRVS	4,400,000		WHO	
		Training of 400 nurses on ICD 11				x			4,400,000			
		Training of 120 Health Information Officers (HIOs) on ICD 11 and Medical Records Officers (MROs)				x		MOHW/CRVS	1,333,000		WHO	
		Training of 150 CRVS team on ICD 11				x		MOHW/CRVS	1,663,000		WHO	
	Development of Verbal Autopsy (VA) Standards and guidelines	Engage consultants to develop /adapt Verbal autopsy standards/guidelines and prepare training materials (2 consultants for 20 days @ 3000)		x				MOHW/CRVS	120,000		WHO	
		Consultancy fee for TOTs trainings						MOHW/CRVS	90,000		WHO	
		TWG working meetings to develop draft the standards and guidelines (work with the consultants)	Verbal Autopsy standards and Guidelines	x				MOHW	152,000		WHO	
		1st and 2nd Consultative meetings with stakeholders on the guidelines		x				MOHW	56,000		WHO	
		Guideline validation workshop			x			MOHW	25,000		WHO	
		Editing and Printing (500 copies			x			MOHW	250,000		WHO	
	Trainings on verbal Autopsy	Training of TWG/ Trainers of Trainers (TOTs)	Health workers trained verbal autopsy			x		MOHW/CRVS	To be done during ICD 11 training (see ICD 11 training budget)		WHO	
		Training of Health care workers on Verbal autopsy				x		MOHW/CRVS	To be done during ICD 11 training		WHO	

CIVIL REGISTRATION AND VITAL STATISTICS YR 2020 WORKPLAN –FY 2020/21										
Result area	Intervention	Quarterly Milestones	Expected Output	Timelines			Responsibility	Budget distribution (BW Pula)			
								Est. Cost	Available amount	Source	Gap
		Training CRVS staff			x		MOHW/CRVS	To be done during ICD 11 training		WHO	
		Training of 500 Community Health workers (CHWs)	Community members trained / sensitized on Verbal autopsy		x		MOHW/CRVS	1,440,500		WHO	
		Training of community leaders/ Community gate keepers and administrators				x	MOHW/CRVS	126,000		WHO	
		Sensitization of the community of community members				x	MOHW/CRVS	135,000		WHO	
Monitoring and Evaluation	Timely compilation and reporting of vital statistics reports	Compilation of health statistics reports • Maternal Mortality Ratio • Botswana Causes of death report • Primary health care report	Health statistics report in place	x			MOHW	176,000		WHO	
Total								15,393,710			

Table 10; Operational plan for the Data and Information Use TWG

Result Area	Intervention area	Key Milestones /Main activities	Output	Time Frame 2020 - 2021				Budget Distribution (BW Pula)			
				1	2	3	4	Est. Cost	Available	Source	Gap
Policy/ Strategy / guidelines formulation	Develop the health sector indicators manual and guidelines aligning it to SDGs and other National Health Indicators	TWG working meetings to revise health sector indicators and align to SDGs and other National health indicators.	**National Health Sector Indicator Reference Manual and guidelines**	x	x			22,500			
		First stakeholders consultative meeting to review the draft manual			x			45,000			
		TWG working meetings to update indicator reference manual and guidelines. (3 meetings)			x			4000			
		Hold Stakeholders consultative meetings / validation			x			45,000			
		Printing of National Indicator Manual and Reference Guidelines. (1000 Copies)			x			300,000			
	Harmonization of the health registers and reporting tools in line with the national indicator manual	Review the existing paper-based data collection and reporting tools in accordance with the key national and international indicators (Local consultancy to lead in the assessment and rationalization of paper-based registers)	**Harmonized data collection and Reporting tools**			X		90,000			
		Six TWG Meetings to harmonize selected data collection and reporting tools				X		27,000			
		Transformation of the harmonized paper tools to electronic tools.	**Electronic data collection and reporting tools**				X	Costed under digital TWG work-plan			
		Activate the data forms control committee - Review ToRs of the forms control committee with a view to extend membership to stakeholders.	**Functional / Active forms control committee**	X				0			
	Development of a national health sector framework to ensure there is reporting of data from all the actors in the health sector (Public, private and faith-based organization)	Desk review of the existing M/E documents	**Health sector M/E framework**				x	43,200		PEPFAR /ACHAP	
		TWG working meetings to draft the health sector M/E framework					x	27,000		PEPFAR /ACHAP	
		Stakeholders consultative meeting					x	45,000		PEPFAR /ACHAP	
		Health sector M/E framework validation meeting					x	45,000		PEPFAR /ACHAP	
		Editing / Printing of 1000 copies of the health sector M/E framework					x	300,000		PEPFAR /ACHAP	
		Dissemination of the M/E framework					x	90,000			

Result Area	Intervention area	Key Milestones /Main activities	Output	Time Frame 2020 - 2021				Budget Distribution (BW Pula)			
				1	2	3	4	Est. Cost	Available	Source	Gap
Capacity building	Strengthen Feedback and data dissemination platforms at all levels.	TWG working meetings to draft the Health Sector M&E Framework meeting.	M/E practitioner's forum held				X	20,000			
	Strengthen Data Analysis at all levels.	Stakeholders consultative meeting	**Health workers trained on data analytics**								
		Health Sector M&E Framework validation meeting.						699,000			
		Printing of the Health sector M/E framework (1000 copies)						300,000			
Monitoring; Reporting and feedback	Develop Annual Health Sector Performance Report (AHSPR) 2020.	Engage consultants to develop the annual health sector performance report (30 days x3000x2)	2019 annual Health sector performance report	x				180,000		WHO	
		Hold consultative meetings with selected Health Programs and partners. (To mine the relevant data)		x				-	-	WHO	-
		Working meetings to develop draft report		x				27,000		WHO	
		1st and 2nsd Stakeholders consultative meeting on the annual report		x				90,000		WHO	
		Edit/print of the report (1000 copies)		x				300,000		WHO	
		Dissemination meetings		x				45,000		WHO	
	Develop relevant reports for regional and International reporting	Develop WHO score card report and SDGs Health indicators report).	Reports available (WHO score card; SDGs health indicators report)			x	x	100000	-		
Governance; leadership and partnership for Health information	Review of the 2014 Health Data Management policy to Align with the Data protection Act	Working meeting to review the policy	National Health Data management policy reviewed	x				45,000			
		Working meetings to develop the Health data policy implementation plan.		x				27,000			
		Develop SOP to guide policy implementation.			x						
		Stakeholders Dissemination of the revised data management policy.			x			45,000			
	Establishment of data management units at all levels with well-defined responsibilities and adequately resourced.	Development TOR for the establishment of the well-defined M&E.		x				-	-		
		Advocate for resources (HR and equipment for data management).		x	x	x	x				

Result Area	Intervention area	Key Milestones /Main activities	Output	Time Frame 2020 - 2021				Budget Distribution (BW Pula)			
				1	2	3	4	Est. Cost	Available	Source	Gap
	Strengthen Feedback and data dissemination platforms at all levels	Develop SOP for data quarterly review.		x				40,000			
		Conduct District consultative meetings to establish multi-sectoral M&E Committee.			x	x	x	11000			
		Conduct national biannual health data review meetings.		x		x		796,000			
Total								4,342,100			

Table 11: Operational plan for Digital Health TWG

Results Areas	Intervention Area	Key Milestones (main activities)	Expected Outputs	Timeline: 2020/2021				Responsible	Estimated Cost (USD)	Est cost in BW pula Pula	Available Budget	
				Q1	Q2	Q3	Q4				Amount (USD)	Source
Policy/ Strategy formulation	Establish strategic partnerships for the implementation of the eHealth strategy by 2020	Establish a functional Digital Health Technical Working Group (Standards, Regulation, Interoperability) led by MOHW	Digital Health TWG established				X	DPS: HSMEQA	93,750	1,000,000		
	Develop eHealth structures to manage and coordinate eHealth activities	Develop and publish a Data Governance framework for health information in Botswana,	Botswana Health Data Governance Framework developed and published				X	Director: HSMEQA	243,600	2,676,924		
	Develop a M&E framework for the eHealth Strategy	Review and align the National M&E plan with the National eHealth Strategy	National M&E plan aligned to E-health strategy	X				Director: HSMEQA	45,000	494,505		
		Present M&E milestones to the eHealth Council on a regular basis	Digital Health M&E Milestones				X	DPS: HSMEQA	31,250	343,407		
Investment	Advocate for increased Government budget allocation for eHealth	Submit an investment case for the eHealth Strategy for National Treasury to consider addressing through voted funds	eHealth Strategy Investment Case developed and submitted			X		PS: MoHW	15,000	164,835		
		Develop a standard Business Case template for use by individual initiatives to show prospective eHealth impact when request government funding	Developed Standard Business Case Template				X	Director: HSMEQA	USD 38,108	PULA 418,769		

Category	Objective	Activity	Output/Indicator	Y1	Y2	Y3	Y4	Responsible	USD	PULA		
Investment	Mobilize the private sector to provide financial support for implementation of the eHealth strategy	Hold a consultative meeting with private sector stakeholders to mobilize support for eHealth Strategy	Private sector stakeholders consultative meeting held					PS: MoHW	24,108	264,923		
	Mobilize donor funding to provide financial support for resourcing the implementation of the eHealth strategy	Invite donors to propose how they will support implementation of the eHealth Strategy	Donors eHealth Strategy support proposals					PS: MoHW	12,000	131,868		
Capacity Building	Develop a coordination guideline for the implementation of the eHealth Strategy	Engage with Ministry of Health and Wellness eHealth Stakeholders to detail the roles and responsibilities for coordinating the eHealth Strategy	eHealth Strategy Roles and Responsibilities			X		Director: HSMEQA	19,270	211,758		
		Develop and disseminate the coordination guideline for implementing the eHealth strategy	eHealth Strategy Coordination Guideline			X		Director: HSMEQA	30,000	329,671		
	Implement the Human Capital Development plan for those managing and leading the eHealth Strategy	Conduct skills assessment for the eHealth implementing workforce	Skills assessment conducted				X	DPS: HSMEQA	USD 30,000	PULA 329,670		
		Manage effective implementation of the Human Capital Development plan	Human capital Development plan implemented						45,000	494,505		
		Include the establishment of an eHealth Leadership Development programme	eHealth Leadership programme established						21,000	230,769		
Digital Infrastructure	Connect all health facilities in the country with minimum bandwidth	Assess connectivity landscape and identify gaps and, identify communication technologies to close the gaps	Assessed facilities on minimum band with	X					210,000	2,307,692		
		Establish a minimum specification for connectivity required by the MOHW, detailing specifications for different types of facilities, and different types of users	Established minimum bandwidth for health facilities		X				33,000	362,637		
		Implement a regular update schedule to update this specification according to new applications emerging in the Botswana eHealth environment	Minimum band with reviewed periodically			X			47,500	521,978		
		Complete the rollout of national connectivity to support the minimum connectivity specification	All facilities connected with minimum connectivity specification				X		53,400	586,814		

	Provide all users with necessary equipment for accessing information								USD	PULA		
D i g i t a l I n f r a s t r u c t u r e			Minimum specification for all user ICT equipment developed	X					4,500	49,450		
		Develop a minimum specification for all user ICT equipment										
		Develop a compliance plan for bringing user ICT equipment up to the minimum specification			X				4,500	49,450		
		Conduct an assessment on the use of emerging approaches such as BYOD				X			30,000	329,670		
		Develop a pro-active maintenance and replacement plan for all ICT equipment, including a plan for supply of consumables, where appropriate					X		48,000	527,472		
	Establish an electronic unique identifier (UID) and electronic Master Patient Index (MPI) for use for the health system in Botswana	Investigate UID options for Botswana and identify a preferred approach	UID and MPI options investigated for use			X			37,000	406,593		
		Publish detailed technical specifications on how the preferred approach will be implemented	UID and MPI options published for use				X		11,970	131,538		
		Build the technical infrastructure to support the preferred approach	Technical infrastructure developed to support the preferred approach						25,700	282,418		
	Establish registries and national data dictionaries	Establish an electronic national facility register	Electronic national facility register established				X		USD 28,000	PULA 307,692		
		Establish an electronic national data dictionary for the minimum indicator and data set	electronic national data dictionary for the minimum indicator and data set established				X		19,000	208,791		
		Establish an electronic national health workforce register	Electronic national work force register established						16,000	175,824		
Standards and Interoperability	**Establish a standards and interoperability framework for Botswana**	Review existing digital health system standards across public and private sectors, locally and internationally			X				20,000	219,780		
		Adapt and publish a Normative Standards Framework for National eHealth initiatives			X				20,000	219,780		

Category	Activity	Task				X	Responsible	USD	PULA		
Standards and Interoperability	**Design the interoperability platform**	Develop interoperability architecture for the National eHealth Platform (specifically prioritizing Master Facility List, National data dictionary and minimum indicator set, and registries)				X		40,000	439,560		
		Design and build the technical components required to deliver the interoperability architecture					X		38,000	417,582		
	Implement the interoperability platform	Publish the interoperability artefacts required for information systems to interoperate with the national platform							USD 10,000	PULA 109,890		
		Secure the required resources (human and infrastructure) needed to implement the Botswana eHealth Interoperability Platform							448,000	4,923,076		
		Deploy and maintain Botswana eHealth Platform							203,000	2,230,769		
Service and Applications		Identify key user types and for each type, establish a user group to review and priorities and evaluate usability of systems			X				21,000	223,076		
	Identify priority user requirements and determine relevant solutions to address these user needs.	Conduct a needs assessment, with extensive stakeholder and user group engagement, to establish the gaps, and publish findings				X			254,000	2,791,209		
	Establish Botswana's approach to the development of eHealth services and applications	Develop and publish an over-arching systems architecture to align systems development activities to the priorities identified in the needs assessment, which will be known as the Botswana eHealth Platform							70,000	769,231		
	Develop a Botswana National Data Warehouse	Assess requirements and options and for a National Data Warehouse that integrates all routine information systems, aligned to the National Minimum Data Set (see below) to meet the needs of users				X			USD 90,000	PULA 989,010		
		Establish the Botswana National Data Warehouse					X	Director: HSMEQA	220,000	2,417,580		

Service and Applications												
Establish a home-grown EMR for Botswana	Establish a roadmap for implementing a holistic patient-focused Electronics Medical Record (EMR), including utilizing FOSS where appropriate, for an affordable and sustainable systems environment, specifically to support the needs of patients and health workers, aligned with the Botswana eHealth Platform				X			160,000	1,758,242		
	Evaluate existing software solutions and establish a roadmap for transitioning them to the EMR roadmap					X		85,000	934,066		
Centralize PIMS to avail data rapidly to the data warehouse	Rollout centralized PIMS to all non_IPMS facilities.					X		USD 1,200,000	PULA 13,186,813.2		
Make PIMS/ IPMS and other key systems interoperable	Establishing a middleware solution to interface systems.					X		150,000	1,648,351		
Establishment of one Integrated DHIS2 system as the default reporting system with other systems exporting data to it.	Merge various instances of DHIS2.										
Linkage of the National Data Warehouse with Africa Health observatory	Link the national Data Repository to the Africa Health observatory.										
Total								4,221,572	46,390,855		

Table 12 Operational plan for improving quality and safety of care

Result area	Intervention	Quarterly Milestones	Expected Output	Timelines				Responsibility	Budget	Available	Source	Gap
									Budget	Available	Source	Gap
Policy/strategy and guidelines formulation	Review of Botswana quality of care framework	Development of TORs and Appointment of taskforce to coordinate the work	Botswana Quality of health Improvement framework		x			MOHW (Department M&E and QA)	-		-	
		Task force working meetings to review the existing draft framework			x				25000			
		First Consultative meeting on the draft framework			x				15000			
		Second stakeholders consultative meeting on the draft framework			x				25000			
		Taskforce working meetings to update draft framework			x				10000			
		Report validation meeting			x				5000			
		Editing and printing of the framework			x				30000			
		Dissemination of the framework t				x			120000			
	Development of clinical guidelines and protocols	Develop a concept note and TORS for task team	Clinical guidelines and protocols			x		MOHW (Department M&E and QA))	-		-	
		Taskforce (Multidisciplinary) working meetings to develop guidelines				x			30000			
		Consultative meetings (Internal and External				x			150000			
		Taskforce working meetings to update draft guidelines based on stakeholders' inputs				x			5000			
		Validation workshop for the guidelines				x			40000			
		Finalization. Editing. Printing					x		2000			
		Document launch/ dissemination					x		30000			
Capacity Building and Technical assistance	Training facility staff on quality improvement	Development of training materials by a taskforce	Quality improvement teams trained	x				MOHW (Department M&E and QA)	210.000			
		Form quality improvement teams at all levels of the health system (District and respective health facilities)			x				-			
		Training of 25 Trainers of Trainers (TOTs) on quality improvement			x				540,000			
		Training of District level quality improvement teams				x			400,000			
		Training of facility quality improvement teams				x			800,000	,		

Monitoring and Evaluation												
Monitoring and Evaluation	Carry out mortality and morbidity reviews using existing data	Taskforce to Develop review tools	Morbidity and mortality reviews done			x		MOHW (Department of M&E and QA)	30,000			
		Training of Health care workers on the tools				x			40,000			
		Quarterly morbidity and mortality reviews		x	x	x	x		100,000			
		Feedback meetings with Districts		x	x	x	x		45,000			
	Carry out clinical audits	Form a multi-disciplinary taskforce to develop the clinical audit tools /working meetings	Clinical audits carried out	x				MOHW	30,000-			
		Sensitize staff on the clinical audit							40,000			
		Carry out quarterly clinical audits at facility level							100,000			
		Development of audit reports							30,000			
		Feedback/ dissemination of the reports							45,000			
	Carry out supportive supervision to the health facilities	Taskforce to develop supportive supervision tools	Quarterly Supportive supervision done	x				MOHW (Department of M&E and QA)	30,000			
		Carry out quarterly supportive supervision		x	x	x	x		100,000			
		Development of quarterly supervision reports (TWG meetings to develop report –(every quarter)		x	x	x	x		120,000			
		Feedback/dissemination of the reports		x	x	x	x		45000			
	Carry out a client and an employee satisfaction survey (independent survey	Engage consultant/ consultancy to develop the client and employee satisfaction survey materials and carry out the independent survey	Client and employee satisfaction survey done	x				MOHW (Department of M&E and QA)				
		TWG working meetings with the consultant to develop the survey tools							100,000			
		Stakeholders consultative and validation meeting on the survey findings							56,000			
		Edit/print the survey reports (500 copies)							250,000			
		Feedback and Dissemination of the survey finding s										
Total									3,363,210			

5.1 Financial requirements for BHDC 2020/21 work-plan

For success of Botswana Health Data collaborative, stakeholders have to pool resources including financial resources together. The priorities in each financial year shall be agreed on by stakeholders but guided by the health sector priorities as spelt out in the sector work plans including the Monitoring and Evaluation plan.

The financial requirements for implementing BHDC priorities for the **financial year 2020/21** are as summarized below;

Table 13; summary financial requirements for FY 2020/21

Sno.	Priority area	Estimated cost (BWP)	Amount available (BWP)	Gap (BWP)
1	Improving civil Registration and Vital statistics	**15,393,710**		
2	Improving data and information use for decision making	**4,342,100**		
3	Leveraging on the digital Health	**46,390,855**		
4	Improving quality and safety of care	**3,363,210**		
Total		69,489,875		

ANNEXES

Annex 1; TERMS OF REFERENCE FOR THE TECHNICAL WORKING GROUPS

Data and Information Use Technical Working group

The overall aim of this Technical working group is to promote use of information for decision making. This in effect calls for action beyond the products for use but included ensuring that the system is generating good quality data.

The specific tasks include;
i. Coordinate the Development of a compendium of health indicators that can be reviewed regularly, 2yrs for continued relevance
ii. Coordination of the development of the health sector Monitoring and Evaluation framework
iii. Definition of common dataset for regular reporting to ensure that only key useful information is collected
iv. Harmonization of the reporting tools in line with the key indicators
v. Streamline the processes of introduction of tools to the health system with all the tools in use having unique document numbers
vi. Guide in harmonized data quality audits/data quality reviews and also regular data review meetings
vii. Data Analysis and development of relevant health sector reports. Of the reports include but not limited to;
    a. Quarterly health sector performance reports
    b. Annual health sector performance report
    c. Mid- term review of the health sector strategic plan
    d. End term review of the health sector strategic plan
    e. Trends analysis focusing on key selected health sector indicators
    f. Relevant reports for regional and International reporting e.g. performance on SDGs
viii. Guide in the relevant health sector evaluations and the relevant surveys
ix. Integrations of disease surveillance as part of the routine reporting system
x. Foster the use of accountability tools such as the dashboards; score cards across the sector
xi. Organize in liaison with others stakeholders the sector performance review meetings
xii. Foster the use of information in the sector including use of research information to influence policies /for decision making
xiii. Capacity building and Technical support including training of health workers on data tools; data analytics

Civil Registration Technical working group

This particular working group shall focus on strengthening the civil registration and vital statistics and ensuring that the relevant information is available for use by the stakeholders for decision making.

The key tasks shall include;
i. Facilitating the development of policies/strategies/guidelines on civil registration
    a. Civil registration strategy
    b. Civil Registration monitoring framework
ii. **Strengthening** the civil registration system including cause of death information
iii. Introduction of the full set of classification (ICD 11, International classification of health interventions, (ICHI); international classification of functioning and disability (ICFD) ; procedures and costings.
iv. Building the capacity of the health workers on ICD11 Coding for better mortality and cause of death data
v. Support implementation of verbal autopsies
vi. Compilation, analysis and interpretation of vital statistics based on information generated through registration and certification

Digital Health Technical working group

The team is expected to strengthen relevant skills to coordinate systems development, implementation and deployment. This will also include sustaining and monitoring the Digital Health echo system.

i. Develop relevant documents /policy guidelines/strategies to guide the digital health in the country. These will include but not limited to;
   a. Finalization of the e-health strategy
   b. Dissemination of systems user manuals (ensure availability to the users)
   c. Development of the master facility List (MFL), Master Persons Index (Unique identifier) and integration Engine
   d. Develop the System Data Dictionary (Meta data) and nationally recognized standards for adopting and implementing information systems.
ii. Institutionalize knowledge translation platforms bringing together researchers and policy makers to foster uptake of research evidence in policy
iii. Establishment of one Integrated DHIS2 system as the default reporting system with other systems exporting data to it.
iv. Development of EMRs following global best practice and as per the defined country SOPs
v. Enhance Integration and Interoperability of the existing systems
vi. Establishment of a health data repository and linkage with Africa Health observatory
vii. Development of plans for development of the Health Information system infrastructure.
viii. Capacity Building and Technical assistance to health teams at both National and District level on key relevant areas of Digital Health

Quality and safety of care Technical Working Group

The main purpose of the TWG is to coordinate the improvement of quality and safety of care across the health system
Specifically; The TWG shall;
i. Coordinate the development of a clear strategy for quality improvement for the health sector. This will give a shared vision of quality improvement that all stakeholders have to rally behind.
ii. Coordinate the development /revision of the necessary Clinical guidelines and protocols (as need may be)
iii. Quality of care and performance improvement including facilitating set up of the quality and safety improvement teams across the Health sector
   a. District quality improvement teams
   b. Facility level quality improvement teams
iv. Follow up on adherence to the existing clinical guidelines and protocols
v. Promote evidence informed practice through use of evidence to inform good practice. This calls for Systematic analysis of data and information including research to inform service delivery
vi. Carry out clinical records audits
vii. Measurement of quality of care from client perspective.
   a. Carry out client satisfaction surveys
   b. Patient and staff experience surveys
viii. Carry out supportive supervisions to health facilities with frequent feed-back; action points and follow up
ix. Promote the use of charters across the sector. This will include client's and providers' charters.
x. Capacity Building and Technical assistance on quality of care especially to the Districts.

Annex 2; STAKEHOLDERS PARTICIPATION IN THE BOTSWANA HEALTH DATA COLLABORATIVE

	MEMBERSHIP FOR THE BOTSWANA HEALTH DATA COLLABORATIVE TECHNICAL WORKING GROUPS (TWGs)					
	Data and Information use		**Digital Health**		**Civil Registration and Vital statistics**	
1	Medical Aid	1	DIT	1	Statistics Botswana
2	UNFPA	2	BOFINET	2	Ministry of Nationality
3	WHO	3	BITRI	3	Local Government
4	UNICEF	4	University of Botswana	4	DHMTs
5	UNAIDS	5	BUIST	5	NAHPA
6	NAHPA	6	NAHPA	6	Business Botswana
7	BOMRA	7	BTC/Orange/Mascom	7	Private Hospitals
8	National strategy Office	8	Prisons	8	WHO
9	Ministry of Tertiary Education	9	Police	9	Referral Hospitals
10	Botswana Health Professional councils	10	Botswana Health Research Council	10	UNICEF
11	Nurses and Midwifery Council	11	PEPFAR ; CDC; USAID; DFD	11	ICT-MoHW
12	Police; Prisons and Botswana Defense forces	12	ICT-MoHW		
13	Statistics Botswana	13	Ministry of Tertiary Education		
14	DHMTS	14	DHMTS		
15	PEPFAR Organization ; CDC; USAID; DFD	15	National strategy Office		
16	Private Hospitals	16	Private Hospitals		
17	Botswana Health Research Council	17	BOTHO University		
18	MoHW programs (TB; NCDs, child health; HIV; SRH ; Malaria	18	Botswana Defense Force		
19	Department of Health services Management –MoHW	19	Ministry of transport and communication		
20	University of Botswana	20	The open data team		
21	ICT MoHW				
22	Business Botswana	21	Business Botswana		
23	UPEN				
24	BOTHU				
25	Central Medical Stores				
26	CSOs and NGOs-umbrella body/ BOCAIP)				