

Ministry of Health and Wellness



Technical Report 2021

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Foreword

Strong health systems are fundamental in order to improve health outcomes and accelerate progress towards the Sustainable Development Goals 2030, Plan Belize Manifesto of the Government of Belize and Horizon 2030 aimed at reducing maternal and child mortality, and combating HIV, malaria and the control of Non-communicable diseases. At a time when the economy is fragile, the Covid-19 pandemic and climate change add to the challenges of meeting these goals, our health systems need to be robust more than ever.

The Ministry of Health and Wellness formulates its interventions in health based on the right to health and the human principles of protection and improvement of the lives of individuals, families and communities. The provision of services must be accessible, equitable, and affordable and of the highest standards. These services are firmly grounded on the pillars of respect for life, human rights and dignity, collaboration and participation based on the primary health approach, while at the same time responding to the demand for curative, rehabilitative and palliative care.

The 2021 Technical Report was completed through the efforts of the Policy Planning and Project Management Unit with the guidance from the Directors and Technical Advisors of the Health Units. This report attempts to present as accurately as possible, the work of the entire public health sector and related partners in health.

Belize has undergone significant transformation during the Covid-19 pandemic and has impacted the health status of the Belizean population. The MOHW has committed to the implementation of its Operational Plan 2022-2023 which reflects an innovative approach in the delivery of health and wellness services to Belizeans and the expansion of health services and NHI roll out through the Primary Health Care program. The importance of access to care, equity and efficiency in the health delivery systems and monitoring and evaluation are paramount to our development.

Challenges lie in all sectors, however, in improving policies and programs based on evidence-based data, monitoring and evaluation of health programs and accurate data gathering are essential for our health systems recovery. Successfully applying the results of monitoring and evaluation for sustained improvement is necessary to reach Universal Health Coverage and the SDG targets.



Hon. Kevin Bernard
Minister of Health of Health and Wellness

Acronyms

AIDS	Acquired immunodeficiency syndrome
ART	Antiretroviral therapy
BFLA	Belize Family Life Association
BHIS	Belize Health Information System
CARPHA	Caribbean Public Health Agency
CDC	Centers for Disease Control and Prevention
CHW	Community Health Worker
CICAD/OAS	Inter-American Drug Abuse Control Commission/ Organization of American States
CME	Continuing Medical Education
CML	Central Medical Laboratory
COPOLAD	Cooperation Programme between Latin America, the Caribbean and the European Union on Drugs Policies
COVID-19	Coronavirus disease 2019
CSO	Civil society organization
DHS	Department of Health Services
EU	European Union
GDP	Gross domestic product
HECOPAB	Health Education and Community Participation Bureau
HIV	Human Immunodeficiency Virus
HRH	Human Resources for Health
HSSP	Health Sector Strategic Plan
IADB	Inter-American Development Bank
IHSDN	Integrated Health Service Delivery Network
IPC	Infection Prevention and Control
KPI	Key performance indicator
MCH	Maternal and Child Health

MOHW	Ministry of Health and Wellness
NCD	Non-communicable disease
NDACC	National Drug Abuse Control Council
NGO	Non-governmental organization
NHI	National Health Insurance
nPEP	non-occupational Post Exposure Prophylaxis
PAHO	Pan American Health Organization
PNP	Psychiatric Nurse Practitioner
PPE	Personal Protective Equipment
PPPMU	Policy, Planning and Project Management Unit
PrEP	pre-exposure prophylaxis
PUP	People's United Party
SE-COMSICA	Secretaría Ejecutiva del Consejo de Ministros de Salud de Centroamérica
SOP	Standard operating procedure
STI	Sexually Transmitted Infections
TB	Tuberculosis
UNICEF	United Nations Children's Fund
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization

Executive Summary

Over the past two years, the Ministry of Health and Wellness has made the response to the Covid-19 pandemic a priority. Most resources were re-directed to this response and to the safety of staff, patients and communities. The pandemic has also highlighted the many gaps within the health system. Some of these gaps include the lack of trained medical and nursing personnel in areas of respiratory care and intensive care, the lack of a public health emergency budget, the lack of medical supplies (PPEs), the lack of modern medical equipment and the lack of adequate infrastructure. The threat of emerging diseases and climate change place emphasis on continued surveillance of diseases. It is also inclusive of training key personnel in areas of surveillance of health systems to monitor and evaluate existing programs, to respond to outbreaks in a timely and adequate manner for efficient case investigations.

The availability of the Covid-19 vaccine in Belize was made possible by the Government of Belize and since March of 2021 approximately 49.5% of the population have received their full vaccination. The objective of the Ministry of Health and Wellness is to vaccinate at least 70% of the population in order to achieve herd immunity. One major issue in achieving this target has been vaccine hesitancy. However, the MOHW continues to educate people to inform them of the benefits of receiving the covid-19 vaccine.

Now that the cases of the covid-19 virus have fallen and the pandemic is on the wane the Ministry of Health and Wellness has embarked on producing a two-year operational plan 2022/2023 to address the health issues that are plaguing our communities. Aligning the National Health Strategic Plan 2014-2024, the Plan Belize Manifesto, Horizon 2030, and the Sustainable Development Goals 2030 gives a clear picture and path in achieving Universal Health Coverage.

In order for the Ministry of Health and Wellness to fulfil its mission of providing quality, affordable and comprehensive health services, with a resilient environment that promotes equal health and wellbeing for all the Government must roll-out the NHI with a focus on primary health care services that will allow health services to be easily accessible and equitable for all Belizeans. The continued investment in Human Resources for Health and building capacity is just one action to address the HRH gap, however, investing in retention is of equal importance. Without the necessary tools, doctors and nurses will not be able to carry out their duties efficiently, so, investing in modern technology and equipment is important for patient care. Without the adequate infrastructure the quality of care and safety for patients and staff is affected dramatically.

Continued efforts must be carried out in order to strengthen the Belize Health Information System in order to capture data for analysis, research and decision making. Efforts must be

directed in combating non-communicable diseases, maternal and infant deaths, vector borne illnesses, HIV and mental health.

Chapter 1: Mission Statement and Priorities of the Ministry

The new leadership of the Ministry of Health and Wellness considered that the Ministry needed a new vision and mission statement in line with the Government's Plan Belize. In December 2021 at the Operational Planning meeting the Technical Advisors of the MOHW came up with a new vision and mission.

Vision:

- QUALITY HEALTH CARE AND WELLBEING FOR ALL NOW AND BEYOND

Mission:

- THE MINISTRY OF HEALTH AND WELLNESS AIMS TO PROVIDE QUALITY, AFFORDABLE, COMPREHENSIVE HEALTH SERVICES; WITHIN A RESILIENT ENVIRONMENT THAT PROMOTES EQUAL HEALTH AND WELLBEING FOR ALL

Priorities:

In 2021, the Government and the MOHW has prioritized the country's response to the Covid-19 pandemic. Much needed resources were directed toward the pandemic in order to provide proper care and management of patients who contracted the diseases. Unfortunately, there were over 600 deaths associated to the Covid-19 virus and over 60,000 people were diagnosed with the condition. The investment and introduction of the Covid-19 vaccine took over precedence above all other public health measures to mitigate and control the spread of the Covid-19 virus. The country has a 49.8% coverage of fully vaccinated individuals.

The Covid-19 pandemic brought a halt to health services. Efforts were placed on the response which led to staff being redirected from other health services to the Covid-19 units. Elective surgeries were suspended and chronic patients were advised not to expose themselves in a hospital setting. Many patients were unable to access health care services and were unable to refill their prescriptions in a timely manner. In addition, many pregnant mothers could not attend their prenatal clinics and monitoring of pregnancy was deficient.

As the country now recuperates from the negative consequences of the Covid-19 pandemic so does the health system. The goals and objectives of the MOHW for the next two years will focus on building a resilient health system that can overcome any difficulty and can respond adequately to health emergencies. The focus will be on:

1. Achieving Universal Health Coverage
2. Provision of a Basic Package of Health Services for primary and secondary care
3. Investment in Human Resources for Health
4. Build Resilient Health Infrastructure
5. Strengthen the Belize Health Information System

6. Strengthen Public Health Policies
7. Malaria Elimination

Chapter 2: Introduction

2.1 Epidemiological Profile of Belize

Mortality and Morbidity in General Population

One of the significant epidemiological trends worldwide is the far reaching effects of the COVID-19 Pandemic and the social inequalities caused in the general population. For the past year, data from the Epi Unit of the Ministry of Health and Wellness continues to indicate a trend of an increase in morbidity and mortality related to COVID-19 and Non-communicable diseases including Cardiovascular Diseases, Diabetes and Cancer. Data being provided through the epidemiology unit show that the leading causes of death have shifted from what was once related to non-communicable illnesses to show diseases related to COVID-19. This Epidemiological shift is attributed to the pandemic.

The health system continues to face many challenges as we respond to the COVID-19 pandemic and COVID-19 is the first among the ten leading causes of death during 2021 (*See Tab. 1*). Of the total deaths, covid-19 accounted for 14.1% of all deaths, followed by diseases of the heart and neoplasms at 13.2% and 10.2% respectively. Deaths related to COVID-19 showed that 82.1 % were individuals NOT fully vaccinated, while 17.9% were fully Vaccinated. Diseases of the heart, Cancers and Diabetes Mellitus as Non-communicable diseases remain among the top five causes of death as illustrated in the table below.

Table 1: Top 10 Leading Causes of Death 2021	Total	%
Total	2,471	100.0
COVID-19	348	14.1
Diseases of heart	326	13.2
Malignant neoplasms	253	10.2
Diabetes mellitus	159	6.4
Assault (homicide)	135	5.5
Unintentional injuries	117	4.7
Cerebrovascular diseases	110	4.5

Influenza and pneumonia	107	4.3
Human immunodeficiency virus (HIV) disease	71	2.9
Certain conditions originating in the perinatal period	59	2.4
Top 10 Total	1,685	68.2
Signs, symptoms, and ill-defined causes	31	1.3
All other diseases (residual)	238	9.6
Total Other Causes	517	20.9

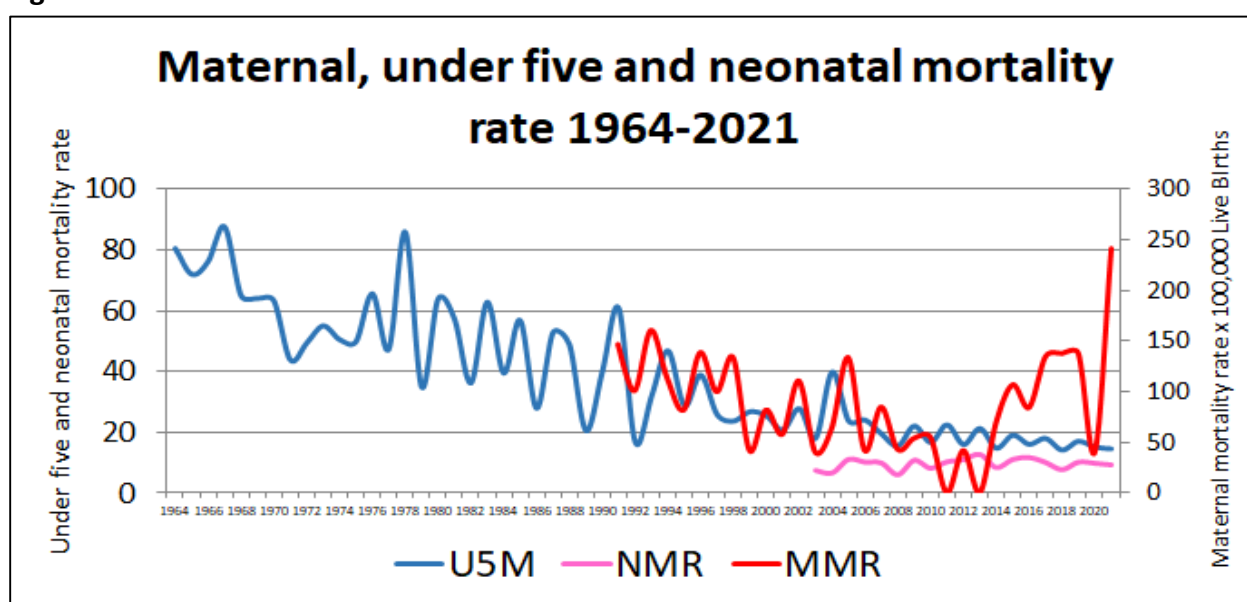
Maternal Mortality

The maternal mortality ratio has increased from 2020 to 2021 where in 2020 the ratio was 55.5 per 100,000 live births to 166.7 per 100,000 live births in 2021. (See Fig. 2)

Mortality in Children

The under-five mortality rate decreased from 17.3, 15.4 and 14.85 / 1000 live birth when comparing 2019, 2020 and 2021 respectively [98/6,599x1000]. The infant mortality rate for the year 2021 is 12.58 / 1000 live births or 84.7% of total under five deaths. The neonatal mortality rate is 9.10 / 1000 live births or 61.2% of total under-five deaths and 72.3% of infant deaths. Eighty-one percent of neonatal deaths occurred within the first week of life. Conditions originating in the perinatal period continue to be the major causes of death followed by congenital malformations.

Figure 2:



Morbidity in the General Population

In relation to morbidity, the top three causes are responsible for almost half of all hospitalizations on a national level: Complications of Pregnancy, Childbirth and Puerperium (ranked 1st); Injury, Poisoning and Certain Other Consequences of External Causes (ranked second); and Acute Respiratory Infections (ranked 3rd).

Morbidity among Children

The morbidity among infants under one year of age is primarily due to conditions originating in the perinatal period and acute respiratory infections, followed by hypoxia and birth asphyxia.

Morbidity among Adults

The same is true for persons between ages 30 and 39 years with the leading cause of hospitalization is due to pregnancy, childbirth and the puerperium, which is about 51% of the total hospitalization. This is followed by injury, poisoning and certain other consequences of external causes mostly due to violence and road traffic accidents among males.

2.2 Major Communicable Diseases

Vector Borne Diseases

At the end of 2021 Belize had no reported cases of malaria, maintaining three consecutive years without a local case, a tremendous accomplishment from 10,411 cases at its peak in 1994. The country has achieved its strategic goal of eliminating local transmission and is currently planning and implementing measures to prevent re-introduction and charting out preparations for the possibility of 'Malaria Free' certification by the World Health Organization (WHO) in 2022.

Between 2019 and 2020, all 4 serotypes of dengue have been documented in Belize. A total of 52 samples confirmed positive by Baylor College of Medicine shows that Corozal had serotype 2, Orange Walk, 1 & 2, Belize 1, 2, and 3, Cayo 1, Stann Creek 1, 2, and 3 and Toledo type 1. The circulation of the 4 serotypes of dengue and factoring the high number of persons with previous exposure over the past decade increases the risk for severe cases in the coming years.

2.3 Major Non Communicable Diseases

Belize continues to undergo an epidemiological transition in which NCDs have become increasingly prominent in the disease profile and have been increasing in their share of the disease burden for well over a decade. Cardiovascular diseases, cancers, diabetes and Cerebrovascular Diseases are responsible for around 35% of deaths annually, 848 out of the total of 1,685 deaths in 2021. However, even with the increase number of cases of non-communicable disease, the continued newly diagnosed HIV infections, infant deaths, maternal mortality and

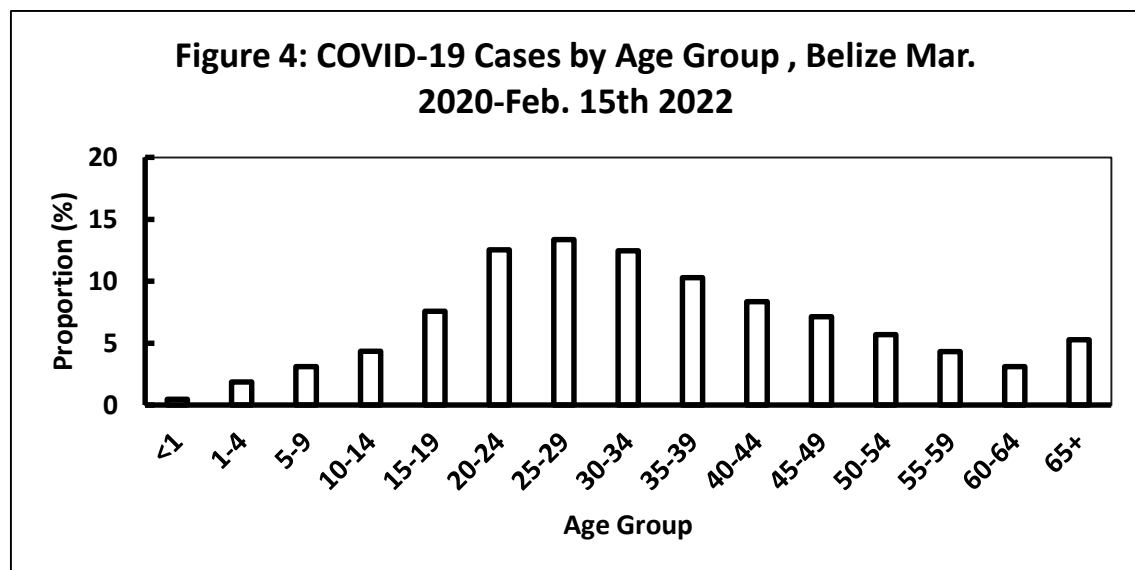
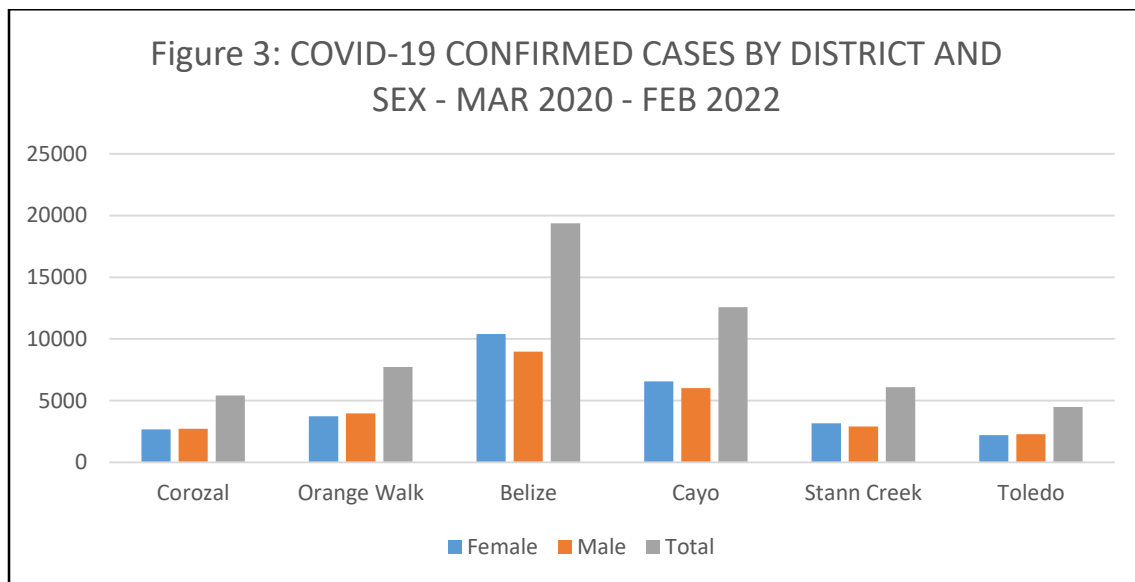
suicides and by extension other mental health illness poses an urgent need for redress and a call for action to present more targeted interventions within the health care system. These efforts clearly need to be monitored closely, however, with the familiar challenges resounding from health regions, programmatic and strategic interventions may perhaps need to be revisited with an innovative view to capture key audiences that may be overlooked or may not be seeking health services. Traditional health messaging and prevention measures may perhaps not be working in all facets of the health system and now is the time that we need to seek innovative actions to address health seeking behaviour in the society. It is evident especially during these times, when COVID has pushed for messaging, education and knowledge of public health awareness, to move away from traditional based operations to be more inclusive of technological platforms that are catered to multi-generational groups through the use of social media.

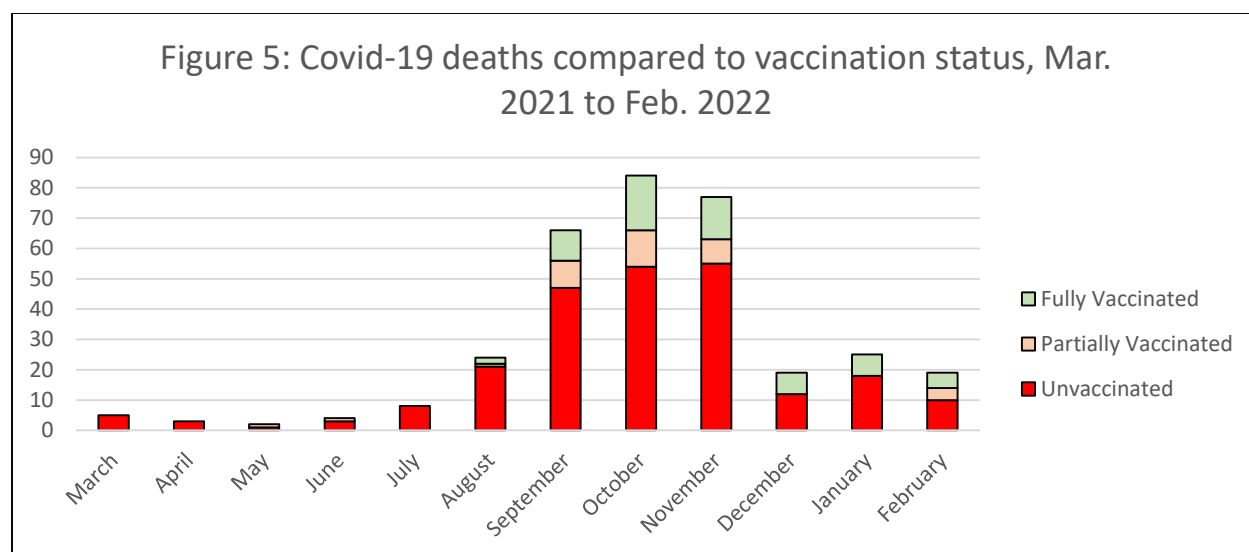
2.4 COVID-19 PANDEMIC:

There has been a total of 55,653 confirmed Covid-19 positive cases in Belize as of February 15, 2022. The majority of cases have occurred in the Belize District, followed by the Cayo and Orange Walk Districts. *(See Figure 3)* This is expected since these areas have the most urban population of the country. Patients within the age group 20-40 years represent the highest the number of Covid-19 positive cases. *(See Figure 4)* There has also been a higher number females being confirmed as Covid-19 positive than males.

Most deaths associated with Covid-19 infection occurred in the months of September to November when the Delta Variant was in circulation. *(See Figure 5)* The majority of deaths (72%) also occurred in the unvaccinated individuals. In addition, further assessment showed that the majority of unvaccinated also presented with co-morbidities, specifically hypertension, diabetes, chronic renal failure, cancer and obesity. *(See tab. 2)*

For the most part, since the pandemic started in 2020, most of the work from the epidemiology unit has been centered on the COVID-19 response. With strengthening of the surveillance systems in the regions to embarking on an innovative and electronic platform for data capturing, reporting and management the staff invested many hours on the work site and outside to prepare the teams with tangible and user friendly applications that in real time could feed to our central location at headquarters. Knowing that for many years' teams capture information via paper-based tools there has been a need to minimize exposure of officers in the field and move away from the traditional paper-based methodology to electronic platforms. Granted that COVID brought around much difficulties across the country it pushed us to think on innovative and technological methods that would meet the needs of the region and of the unit and be able to produce data for policy development and decision making.





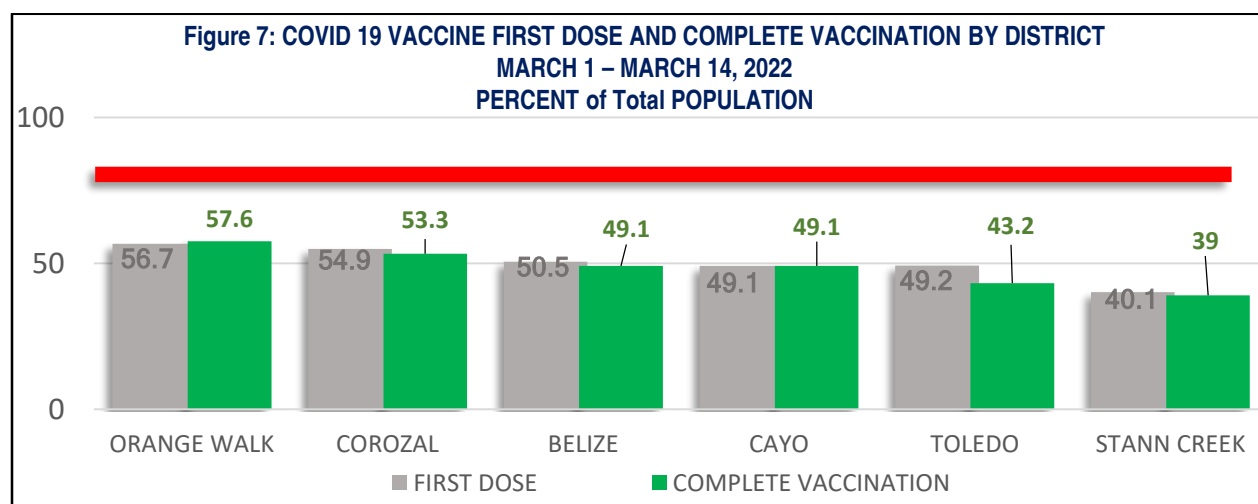
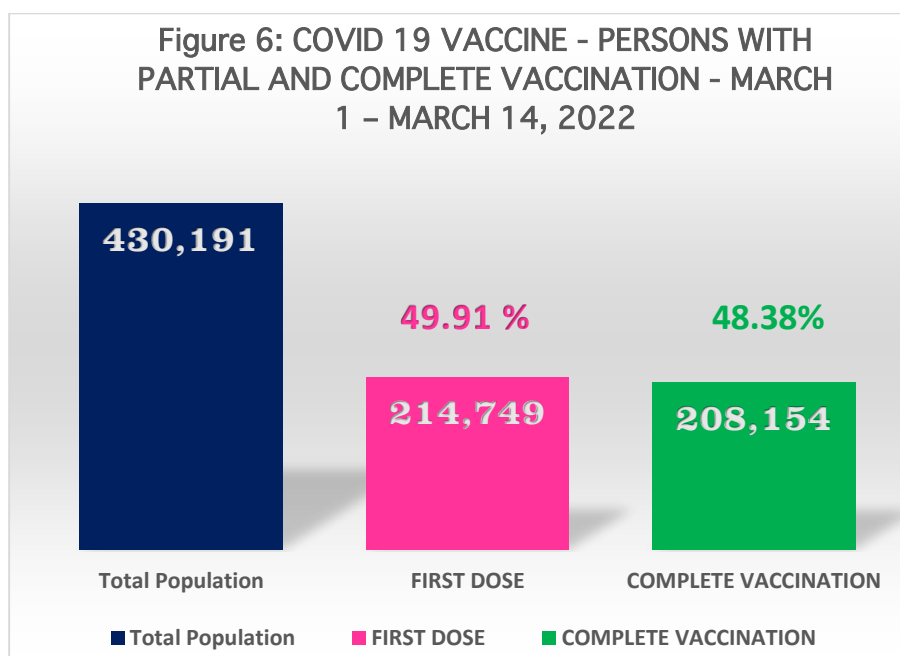
**Table 2: COVID-19 Deaths by Month and Comorbidity
(March 1, 2021 - March 3, 2022)**

Vaccination Status	Hypertension	Diabetes	Chronic Renal Failure	Cancer	Obesity	HIV	Asthma	AFIB	None	Total Deaths
March	0	1	0	0	0	1	0	0	3	5
April	1	2	1	0	0	0	0	0	1	3
May	0	0	0	0	0	0	0	0	2	2
June	1	2	0	0	0	0	0	0	1	4
July	4	1	2	0	0	0	0	0	4	8
August	8	7	4	0	1	0	1	0	11	24
September	28	21	11	0	4	0	0	1	29	66
October	34	34	13	4	2	1	1	0	37	84
November	27	25	9	2	0	2	0	0	36	77
December	8	7	4	0	0	0	0	0	8	19
January	21	11	11	0	0	1	0	0	6	25
February	5	9	5	0	0	2	0	0	4	19
Total	132	111	55	6	7	5	2	1	138	317
Percentage	41.64%	35.02%	17.35%	1.89%	2.21%	1.58%	0.63%	0.32%	43.53%	100.00%

Please Note: Percentages add up to over 100% due to some patients having multiple comorbidities

2.5 Covid-19 Vaccination Coverage

Since the initiation of the covid-19 vaccination campaign there have been 214,749 eligible persons who have received a first dose and 208,154 that are fully vaccinated. (See Fig. 6) In other words, 49.91% percent of the population have received at least one dose of the Covid-19 vaccine and 48.38% of the population are fully vaccinated against the Covid-19 virus. The Orange Walk District is the district with the highest coverage of covid-19 vaccination with 57.6%, followed by the Corozal District with 53.3% and then the Belize and Cayo Districts, both with 49.1% coverage. (See Fig. 7) The Stann Creek District is the district with the lowest coverage at 39%, followed by Toledo with 43.2%.



Chapter 3: Major Achievements, Challenges and Recommendations by Departments

3.1 Nursing Department

3.1.1 Achievements

1. Approval received for the creation of 27 new nursing post and all 27 filled.
2. Hiring of temporary nurses to support COVID-19 response and the COVID-19 Vaccine program through the Immediate Public Health Response Project financed by the Inter-American Development Bank, CDC and Rotary.
3. The Ministry liaised with Chi Mei Hospital in Tainan, Republic of China Taiwan for training of nurses in specialized area. This was done with support from the Taiwan Embassy in Belize. This collaboration lead to the training of five Staff Nurses in the Area of Operating Room Nursing. The program is for eighteen months. All five successfully completed is July 2021.
4. Annually the Ministry Issued 15 Registered Nurse Scholarships in partnership with Ministry of Education (MOE). This scholarship includes tuition by MOE and fees by MOHW. Each student is required to sign a bond with the MOHW.
5. Issued 30 scholarships for the License Practical Nursing Program at the University of Belize. This scholarship included tuition and fees. The program commenced August 2021 for an eighteen-month period.
6. Approval for cohort of Nurses for engagement in a Midwifery Program to be provided by the University of Belize. The program started January 18th, 2021. Nineteen (19) Nurses have been accepted into the program; 2 from KMH, 3 from NHI/ MOHW and 14 from MOHW. The program is fully funded by the Government of Belize.
7. Develop and submit proposal to Ministry of Public Service (MPS) and Ministry of Finance in relation to creation of seventy-four new post for Nurses for fiscal year 2022/2023. Pending response from MPS.

3.1.2 Future Plans and Priorities/Staffing and Financial Consideration

1. Training programs for specialization in nursing (Intensive Care, Public Health, Anesthesia, Operating Room Nursing).
2. Increase the cadre of nursing based on population and nurse –patient ratios.
3. Provide the necessary inputs for nurses such as appropriate equipment and supplies in order for nurses to provide superior care to patients.
4. Adjustments to the compendium of allowances for healthcare workers
5. Removal of overtime capitation for healthcare workers due to the shortage and unavailability of nurses, specialist on the market

3.2 Pharmacy Unit

3.2.1 Achievements

1. Fully electronic approvals of Pharmaceuticals being imported into the Country.
2. Third Party Selectivity Partner on Asycuda alongside the Belize Customs Department.
3. Processing of approvals for Pharmaceutical Importation by only Licensed Importers
4. Having 90% of all Pharmaceuticals being imported Registered with the Ministry of Health.
5. Ongoing population of a Shared Excel Database which records all Pharmaceuticals that has been and continues to be Imported.
6. Conducted First Sitting of the Pharmacy Board Licensure Exam in March 2021 of a total 13 Candidates which yield a total of 8 passes a 61.5% passage.
7. Conducted Second Sitting of the Pharmacy Board Licensure Exam in November 2021 of a total of 5 Candidates
8. Having 100% Precursor Chemical Importation be by legitimate institutions in compliance with PEN Online Program within the specified timeline for feedback
9. In contributing to the Covid-19 response, tasked with managing the receipt, distribution, storage and proper record keeping of Personal Protective Equipment for the Ministry of Health.
10. Alongside the Public Health Unit initiated the review of quality assurance documents and permit issuance of Hand sanitizers to ensure safety after the advisory as alerted by the FDA on Methanol tainted products.
11. Oversee 90% importation of SARS-COV2 Antigen and PCR Test Kits provide approval permit on the advice of the Director of Health Services.
12. Celebration of World Pharmacist Day 2021 under the theme –Pharmacy Always Trusted for your Health –Assisted with the Vaccine Campaign
13. 100% approvals of Medical Missions that entire the country for Customs and Ministry of Finance Exemption request.
14. Offer full technical support to Central Medical Stores on adjusting Forecasted tender figures in Tender Cycle 2021 -2022.
15. Amend SI 54 of 2017 of the Food & Drug Act to include Reliance Pathway of Drug Registration
16. Establish a working Technical committee for the review of the proposed Pharmacy Act and Control of Pharmaceuticals Act.
17. 88% of Private Pharmaceutical Facilities duly Licensed in accordance with the Food and Drug Amendment.

3.2.2 Challenges

1. Many of the schedule activities for the Pharmacy Unit could not be carried out as oversight was request by the CEO for the Drug Inspectorate Unit, as the Director had resigned.
2. Technical Support was also request for the Central Medical Stores with the resignation of the Assistant Procurement Manager.
3. The Pharmacist post still remains vacant, this presented several difficulties in completing tasks.

3.2.3 Recommendations

1. Proper forecasting as well as realistic usage rates from all health facilities would positively impact continuous availability of drugs.
2. Data needed from prescriptions, as opposed to what is dispensed, would probably provide a more accurate figure.
3. Emphasis must be placed on human resource needs in the Pharmacy and Drug Inspectorate Department specifically the employment of the Director of the Drug Inspectorate Unit.
4. Follow up trainings on Pharmacovigilance monitoring and reporting is needed. P&T Committees should be fully functional at the regional hospitals.
5. The Passage of the pending legislations is important such as the Pharmacy Bill, Precursor Chemical Act, and the Antibiotic Act which will regulate pharmaceuticals, precursor chemicals and medical equipment.
6. Development of monitoring and evaluation indicators to monitor Standard Operational Procedure for the implementation processes.

3.3 National Drug Abuse Control Council (NDACC)

3.3.1 Achievements

1. Activities conducted for High School Drug Weeks (1 online)
2. Substance Abuse Prevention Intervention carried out in (24 school of all level nationally)
3. Continued Outreach Services carried out for (179 Cases)
4. Continued Community Empowerment activities for a total of 79 activities at National Level)
5. Strengthen partnership with the three Rehabilitation Facilities and the National Prison
6. Completion of the MEM 8th Evaluation Round for Demand Reduction
7. Successful inclusion of Belize in COPOLAD III
8. Network with all support group in country (17 AA Groups countrywide)

9. National Commemoration World NO Tobacco Day, International Day Against Drug Abuse and Illicit Trafficking, World No Alcohol Day.
10. Continued Staff capacity building
11. Participation in a number of media interviews district and national level
12. Participation in a number of regional and international virtual meetings and training

3.3.2 Challenges

1. One of the major challenges faced by NDACC - Belize continues to be the lack of transportation. This cripples our service coverage in the rural communities. However, our officers try their best where possible to use public transportation or liaise with our Ministry of Health and Wellness Regional Offices for support as well with our other counterparts.
2. In the area of finances in relation to funding for drug week and other programs it has been challenging due to the time set out and because the approval process of these proposals are lengthy.
3. In the area of Outreach confidentiality the Council should provide for utmost Clientele Confidentiality in all District Offices by ensuring that all Outreach rooms are sealed and safe for both clientele and officers.
4. This year once more COVID-19 continued to place an added challenge to the work done at NDACC - Belize. The ongoing closure of schools ceased the delivery of substance prevention education, the ability to organize community empowerment activities due to the limitation to the number of people that can gather together. The outreach services were put on pause for a period of time where there was no face to face client interaction. This contributed to the low numbers of persons impacted by the services that we offer.

3.3.3 Recommendations

1. The NDACC - Belize requires a restructuring so as to make the Council function for what it was created to be; a policy and research entity that advises the government in matters related to the abuse of illicit and licit substances in the country of Belize as stipulated in the Misuse of Drugs Act.
2. The Council recommends the creation of an Implementing Unit, Substance Abuse Prevention Unit within the Ministry of Health and Wellness that will consolidate the work that has already begun in mainstreaming addiction into the primary health care services provided by the Ministry of Health and Wellness through the Regional Health Management System.
3. This approach, if well implemented will also contribute towards cost effective operation of the Council and the Implementing Unit resources, be it material, human or

otherwise. Since in principle at first phase it will see the reduction of rental and utility cost to operate offices country wide. This recommendation will also provide the opportunity that officers in the District be effectively supervised both administratively and technically.

4. The overall objective of this recommendation is to drastically reduce the operations cost at National and Regional level.

3.4 Mental Health Program

3.4.1 Achievements

1. Virtual CME carried out in collaboration with Mt. Sinai. Beth Israel Department of Psychiatry, New York.
2. Activities carried out in observance of World Suicide prevention day on September 10th.
3. Activities carried out in observance of world Mental Health Day, October 10th.
4. Virtual training session on improvement of Mental Health and Psychosocial support system in disaster situation.
5. Training of trainers for problem management plus facilitators.
6. Development of MHPSS plan.
7. Mental Health and coping during Covid-19
8. Training carried out of Police recruits and district police officers.
9. Central American Suicide Observatory continued. Nurse Alaide Vallejo serves as the focal point for the country of Belize. Participated in 8 meetings with **SE-COMISCA** members for suicide surveillance and a capacitation on use of PRICARD.
10. Revision of the National Gender Policy
11. Co-chair of the National special needs and disability committee
12. Review of the draft National Suicide Prevention Plan.
13. Continuous medical education session/workshops and media campaigns.

3.4.2 Challenges

1. The Main Challenge is in Human resource:

The mental health workforce is comprised of:

- 14 psychiatric nurse practitioners
- 3 psychiatrists (1 Nicaraguan, 3 Cuban)
- 1 psychotherapist
- 1 social worker
- 1 Occupational therapist (Cuban)

Of urgency is the filling of posts of Psychiatrist and Psychologist which are available as well as strengthening of the Headquarter Unit with available posts of Nursing Administrator, Project Manager and Secretary. All these posts are covered in the

available budget of the Program except for the Nursing Administrator Post which falls under DHS cost center.

2. The creation of posts for two additional Psychologists to be able to have one per Region is also urgently needed especially as we continue to provide services to the population that has been affected by COVID – 19 be it patients, family, and frontline staff. There is a high demand for Psychologist services in all the regions as the program receives more and more referrals for interventions for substance abuse, family conflicts, and children and adolescents' disorders.

3.4.3 Recommendations for Future Priorities and Plans

The proposed plan for the mental health program is to:

1. *Integrate telemental health services as we continue to face the COVID -19 pandemic. (Laptops and wifi required at the clinics).*

COVID-19 is highly contagious and may be deadly for at-risk and elderly individuals. However, these risks should not prohibit individuals from receiving mental health care. Therefore, Telemental Health may be an ideal solution to reduce the risk of clinicians or patients being infected while still providing care, especially in settings with shortages of mental health professionals. Through Telemental Health the Mental Health Program can effectively respond to the mental health needs of people who are admitted, in isolation, quarantine, or restricted mobility whilst at the same time reduce patient and clinician infection risk. Thus, Telemental Health adheres to social distancing, avoids care interruptions, and maximizes public health outcomes.

2. *Retrofit one (two bed) room in each public hospital for the admission of acute mentally ill patients.*

Acute mentally ill patients are generally managed at the Acute Psychiatric Unit, in hospital and KHHM. Having moved away from institutionalization some 20 + years ago, the aim remains in integrating mental health into primary care. The Belize Mental Health Program encourages treatment in one's own community as promoted by best practices in mental health. This provides the greatest benefit to the patients as it allows treatment in familiar surroundings and closer family involvement which promotes a faster recovery. It is also less costly for families who do not have to travel far distances to receive mental health care.

Admission to the general hospitals has created challenges for both staff and patients as these patients are admitted along with other patients who suffer from medical conditions. Due to the nature of the mental illness, when acutely ill, patients become

disruptive, loud and aggressive. Hospitals do not have designated rooms to admit and properly manage patients.

3.5 Health Education and Community Participation Bureau (HECOPAB)

3.5.1 Achievements

1. Partnering with SIF Projects Consultancy Services to Provide Water Conservation, Sanitation and Hygiene Education to Community Members in Belize.
2. Conducted Training of CHWs on COVID-19 Testing & Contact Tracing also trainings around COVID-19 were delivered to teachers (68 teachers trained).
3. Activities organized to celebrate Wellness Week 2021; Global Handwashing Day 2021 under the theme “Our Future is at Hand – Let’s Move Forward Together” and Handing Over Ceremony (29 Handwashing Stations) for schools in the Toledo District
4. Training of new recruits-CHWs started and is ongoing for San Ignacio, Belmopan, Corozal, and PG; Certification of these new recruits is scheduled for early 2022. Also the Establishment of an operating organizational structure for HECOPAB.

Table showing the number of CHWs in each of the four regions

Region		Communities	Active CHWs (Certified)	Recruits
Northern Health Region	Corozal	27	22	10
	Orange Walk	30	43	-
Western Health Region	Belmopan	13	21	19
	San Ignacio	30	22	7
Central Health Region	Belize	36	37	0
Southern Health Region	Dangriga	24	10	24
	Independence		10	
	Punta Gorda	50	33	14
Total			198	74

3.5.2 Lessons Learnt

- 1 Working with Limited Resources: HECOPAB has benefited from consistently applying a multi-sectoral approach to health education and prevention by sharing of scarce resources to include transportation and training costs with its partners.

- 2 Despite the pandemic, this year HECOPAB started trainings for new recruits and aims to have certification of these new recruits by mid-2022.
- 3 Partnership and support from NGO's, local businesses, companies and community village councils in relation to COVID-19 testing and vaccination within their communities.
- 4 In the last year, HECOPAB made major efforts to strengthen its capacity at the local level. Increased knowledge and skills developed in new areas of research and testing.



3.5.3 Future Priorities and Plans

1. It is imperative to promote training and capacity building that gives CHWs the information, skills, and tools to address community health issues, including policies around sustainability and program evaluation.
2. A comprehensive health promotion policy needs to be established to set objectives, establish structure, clarify functions, strategies for collaboration, address diversity issues and develop protocols with other health education stakeholders
3. Empowering communities through education to advocate on their own behalf involves a more open, specific, and clear dialogue about power relations that impact different aspects of health. Additionally, an awareness of all involved parties that profit from decision making that undermine health, consequences of diseases, and the benefits of health promotion is necessary.
4. Because CHW programs have resurfaced as an effective strategy for strengthening community health, it is imperative that CHWs' roles, uniqueness, and functions are clearly outlined in order for these volunteers to address an appropriate fit between the responsibilities they are allocated, their abilities, and their coverage.

5. Because of the pandemic, adjusting to the new norms has been challenging and there will have to be innovative ways to keep the CHWs engaged in their communities. Supervisory visits to Community Health Workers will have to be done weekly to different catchment areas. Furthermore, virtual trainings and monthly meetings with them has to be implemented to keep them updated and passionate about the duties expected of them, particularly at this time
6. Currently, the stipend of \$100.00 monthly (before social security deductions), has become a growing issue of dissatisfaction. Therefore, it is recommended that the CHWs become employed as Open Vote employees in the Public Service or receive an increase in stipend (\$200/month instead of \$100).

3.6 Environmental Health Program

3.6.1 Achievements

1. Routine sampling of drink water from public system, Belize Water Services, Rudimentary water systems, Bottled/purified water/ packaged water, Hand pumps.
2. Routine sampling of drink water from private system: Private wells, Rainwater tanks, Private water systems, rivers, creeks.
3. Monthly collection of ice samples.
4. Conduct bacteriological and chemical testing of water to ensure water parameters are met as per WHO guidelines.
5. Provide recommendations for the treatment and disinfection of systems once identified to be contaminated.
6. Acquisition of Autoclaves to support proper disposal of medical waste in all districts
7. During 2021 a total of **2,413** water samples were collected and analyzed countrywide for bacteriological and chemical analysis by the National Drinking Water Quality Laboratory. This represents a 5% increase 2020.

3.6.2 Lessons Learnt

- 1 Results of rural water system is of lower quality than that derived from the other systems. It demonstrates that the Water Boards management system has not worked very well for many of these systems and as a result some of these systems faced are facing a number of challenges to keep their respective systems operational. Financially in many instances Rural Water Boards does not have the need finances to purchase chlorine hence they go untreated. Similarly, when repairs are need there are not done in a timely manner leaving the system expose to contamination. In general, the rural water needs better management to ensure water reaching their communities is and remains safe

3.7 Dental Health Unit

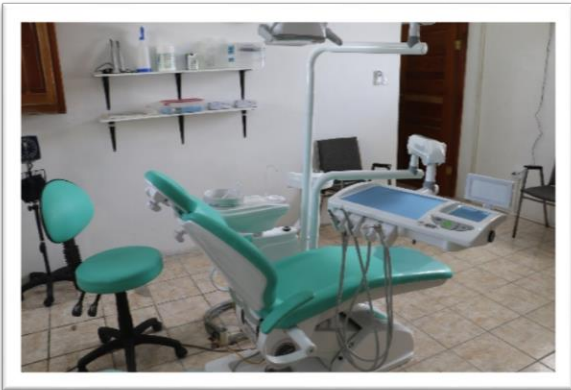
3.7.1 Achievements

1. **Program 1 (Dental Health Education Program)** Saw in 2021, 1 school at The Dental Clinics out of a total of 40 planned. We carried out 2 **visits** out of 40 planned and **50 patients** benefited. Some School remain closed since March or April 2020. Covid-19 pandemic has affected the overall patients benefitting from this program. The activities included: -1. Comprehensive Dental Health Education program introduced in 6 different districts at the Primary Schools level. 2. Conduct at least two school visit per school per clinic per month. 3. Conduct at least two Dental Health Education sessions per clinic per month
2. **Program 2 (Out Patient Care Program)** In 2021 it shows that a total of 12022 patients were examined and treated at the 10 the dental clinics. 4621 Patients received extractions in 2021 and 5763 teeth were extracted at the GOB Dental clinics in 2021. This shows that 38% of all patients that came to the dental clinic received extractions. The activities for this program are: 1. Provide oral exam for dental diseases to the general population. And 2. Provide extraction of all teeth which are irremediable
3. **Program 3 (Prenatal Clinic Program)** In 2021 a total of 1069 pregnant mothers were attended from January to December. The activities for this program included: - 1. Dental health Educational sessions provided to all pregnant women attending Prenatal clinics and 2. Dental screening to all pregnant women referred from MCH clinic
4. **Program 4 (Prison Program)** In 2021, 0% completed since there was no attempt by prison to engage in meeting to negotiate the way forward. this then includes 0 prisoners examined, 0 prisoners underwent extraction 0 received medication at the department of correction. prisoners who needed dental treatment were seen at nursing school at any given time. The activities for this clinic were: - 1. Conduct 12 outreach clinics per year. And 2. Provide dental health education to all prison inmates attending the clinic sessions
5. **Program 5 (Mobile Dental Clinic)** We Carried out 0 mobile visits out of 18 programmed. And 0 educational sessions out of 36 sessions programmed. 0 children benefitted as this program is dependent on schools being opened. The activities for this program are: - 1. Conduct 18 mobile outreach clinics to the rural schools with children 5-14 years and 2. To conduct 36 Dental Health Education sessions in rural schools.

3.7.2 Lessons Learnt

The Dental department underwent a struggle with man power shortage as the Regions used dental staff in covering such areas as clerks, vaccination, Covid Testing sites. There was staff shortage in Dangriga, and San Pedro policlinic as the Dental staff moved to another department and the replacement was not made immediately. Transportation was prioritized in areas to assist in covering the pandemic staff. The post of Dental

Surgeon at Cleopatra white was not filled for several months adding to the decrease in the statistics seen. It would also have helped if the Prison Department would have organized itself better to allow for The dental team to be able to give service at the Department of correction. Now that the posts are being filled we hope that there will be a slow gradual increase in the statistics presented. Several recommendations were made by program that would assist in stabilizing the dental services



Cleopatra White New Dental Clinic inaugurated June 24th 2021

3.7.3 Recommendations

The recommendations are:

1. Make annual schedule by Clinic
2. Send the annual letter to the schools. AGAIN DEPENDING ON SCHOOL REOPENNING.
3. Get more literature for distributions and
4. Obtain projector and laptop for dental educational sessions.
5. That monies be made available especially during Dental Health week since it is a national event where emphasis is made in educating the General population on the importance of oral health.

Recommendations for Out Patient Care Program

The Recommendations are: -

1. Urgent distribution of PPE's as it is Dental first line of defence.
2. Activate the immediate distribution of PPE's or at least surgical gowns
3. Immediate purchase distribution of anaesthetic.

Inform to all dental clinics by a monthly report of the pharmaceutical available so as to prescribe and avoid any patient from having to return for a change in prescription when the prescribed drug is not available. Knowledge of substitute drugs available will also avoid the abundance in expired drugs.

Prenatal Clinic Program

The recommendations include: -

1. More educational material is needed.
2. Inform nurses that the purpose of the dental section in their pregnancy clinic card is there for dentists to sign encouraging pregnant mothers to visit the dentist.

Prison Program

The recommendations include: -

The way forward: -

1. Engage prison in meeting to negotiate the way forward and ensure security of dental staff at the prison.
2. Prisoners who needed dental treatment were seen at nursing school at any given time.
3. Provide annual schedule of prison visits.

Mobile Dental Clinic

Recommendations include: -

1. Plan ahead and schedule schools as if they will be opened this coming year.
2. Obtain laptop and projector for the dental team to be able to carry out dental education.
3. Send out the schedule of mobile visits intended for this year using the calendar template already e-mailed to all dental clinics
4. Avoid rescheduling schools as they also have to plan for the visits as they are making space to accommodate the dental team coming in.
5. That all Dental Post be filled.
6. That all Dental Clinics be standardized in terms of equipment, material, services and way of reporting.
7. That monies be allocated for the purchase of more material for the mobile outreach program.
8. That all dental clinics be upgraded with computers compatible so as to hook on to the BHIS.
9. Get technician to service the dental chairs regularly and Mobile units.
10. Need management and educational courses and workshop.
11. Need one new dentist for Central Region as Dr. Raphael Samos has been covering..
12. Better communication when it comes to Dental voluntary group.
13. The Establishment of posts of several persons need to be followed up as they have many years in the system.
14. Create a post for Dr. Efrain Cima as Oral Pathologist

3.8 Licensing and Accreditation Unit

3.8.1 Achievements

1. Monitoring and licensure COVID-19 Testing Site to improve standards.
2. Develop manual and monitoring tool for COVID-19 testing site.
3. Revision of inspection checklist of COVID-19 testing site Public Hospital.
4. Conducted an assessment of the infection control program at hospital level and develop major recommendation for improvement. Conducted self-assessment of the Infection prevention and Control program using IPCAT/IPCAF.tool, WHO Guidelines on core component for Infection prevention and control programs at the national and acute health care facility level. PAHO is providing technical support in evaluating and providing recommendation on how to improve the program.
5. Provided support for IPC measures and structural layout with SMART Initiative for Palm Center and San Ignacio Hospital.
6. Provide IPC advice for establishing mobile COVID-19 testing sites set up by the MOHW.
7. Develop Linen Management system and draft Floor Plan and technical direction for MOHW new Linen facility
8. Policy review and adherence at public hospitals (peer review, incident and complaint system, ambulance policy, surveillance committee and Quality Committee response -1/3 conducted annually)
9. Assist with reviewing and providing IPC advice to established autoclaves for medical waste disposal, a project with PAHO and IDB (Collaborate with PAPU/PMU).
10. Review and audit of rural health facilities (1 of 2 visits conducted).
11. Assist in reviewing Environmental and Social Management Plan revision and development with World Bank and PMU.
12. Developed license application form for ambulance services and mobile and stationary medical laboratory.
13. Develop private facility Covid 19 testing site checklist for inspection purpose and approval requirements.
14. Develop an inspection checklist for the licensing of Belize Dry cleaner, the contract laundry cleaning provider for the public and private health facilities.
15. Conducted health facilities inspection for licensing adherence (private facilities including dialysis center
16. Develop draft Radiology Quality Manual in collaboration with IAEA.
17. Work with IAEA with radiation safety measures and investigation and collaboration.
18. Develop and submit Draft Quality Improvement Framework MOHW to Superiors for approval.
19. Review licensure Inspection Checklist to include SMART Indicators for all health facilities.

20. Audit Pathology Lab and make recommendation for changes to enhance care, services and occupational safety measures.
21. Develop protocol and standards for terminal ill care facilities in Belize along with licensing requirements.
22. Develop protocol and standards for chemo-therapy facilities in Belize along with licensing requirements.
23. Develop training plan for field/mobile hospital system for surge response in collaboration with PAHO.
24. Working with the regions to ensure functionality of Quality Committee at the district level.
25. Capacity building of staff in key technical areas for quality assurance, patient safety measures, infection prevention and control, blood banking, covid-19 testing, quality infrastructure and radiology
26. Licensure application of Allied Health Professionals and Pharmacies. Maintain an efficient licensing system to establish, monitor and enforce quality standards in accordance with regulatory requirements.

3.8.2 MAJOR CHALLENGES

The major challenges remain the same as was for the past three years and have become even more chronic. Below is the list of them outlined in 2018 and 2019 reports:

1. COVID-19 impacting implementation of routine activities.
2. Non-adherence of quality indicators reporting by Regions and CML.
3. Health regions non-functional Quality Committee and internal auditing of services.
4. Issues with IPC supplies from CMS (quality of Clorox, liquid soap and medical waste bags).
5. Lack of requested adequate IPC Supplies submitted for tender supplies.
6. Poor collaboration by CML to institute and work jointly with Regulatory Unit to address laboratory quality assurance issues seen throughout the public laboratories and CML.
7. Impact of licensing timeliness due to long turn-around of inspection reports and response from Drug Inspectorate Unit.
8. Lack of documentation of quality monitoring, trainings and meeting files at regions for auditing purpose. No training plan and orientation plan at all levels.
9. Lack of electronic and hard copy documents (SOP etc.) to technical unit at the health districts for use and guidance when providing services.
10. Deviation of services and care not in line with relevant standards etc.
11. Non-approval to execute inpatient survey and over-night to execute audits in the regions.

12. Support from DHS Office to finalize and support the approval of Service Improvement Standards (radiology, nursing and waste management).
13. Lack of adequate legislations and standards to execute tasks etc. in the private sector.
14. Lack of secretarial support.
15. Deteriorating infrastructure in Rural Areas (West, Stann Creek and the OW District).
16. Lack of human recourses for IC prevention and control in health facilities (Domestics, Laundresses, and Attendant Supervisors) in Toledo, Stann Creek, and Western Regional.
17. Need for Infection Control Nurse at Punta Gorda and Northern Regional Hospital and an IPC person at HQ L&A Unit.
18. Lack of adequate infrastructure, transporting and final disposal of medical waste to improve the management and storage of infectious waste at public health facilities.
19. Lack of air condition and pharmacist assistant at rural health facilities.
20. Institutional commitment to IC prevention and control at local level.
21. Lack of training plan and National Quality Framework.
22. Lack of an IPC budget at L&A Unit and district level.

3.8.3 RECOMMENDATIONS

The list of recommendations remains as is since 2018 because the same concerns and issues exist and are not being addressed due to lacking support at the region and the Ministry's level. Hopefully, for the next reporting period, the list may be different. See below the list of recommendation for 2021 which are not much of a different from the last two years.

1. Timely feedback on policies, standards, guidelines etc. submitted for review and approval.
2. Provision of adequate resources (overhead projector, a secretary, driver and Health Facility Inspector) so we are able to administrate our duties more efficiently.
3. Provide support to the L&A Unit for the execution of quality audits reviews at the region, and the region executing their internal quality audits.
4. Regions to develop Quality Review Response Work plan to address quality review gaps.
5. Development of training schedule at national and local level to address training gaps which impact quality of care and patient outcomes.
6. Integrate radiation and occupational safety program at facility level and a system established at HQ.
7. Sensitization of regional management team of their role to all program areas at national level.
8. Establish emerging antimicrobial surveillance system.
9. Timely replacement of IPC and Housekeeping staff.
10. Implement the WHO Patient Safety Initiative for all public Hospitals.

11. Improved coordination and communication amongst units with cross cutting activities (the L&A Unit has not been supported to execute its 6 major objectives designed to support the MoHW).
12. Adherence of reporting as agreed by the regions for quality and infection control activities (there has not been no QI report produced by the region since 2017).
13. Continue with the review and merging of all nursing policies in a nursing standard guidelines and obtain timely approval from the DHS Office. Was initiated in 2017 and a few final draft was forwarded for approval, to date none has been approved.
14. Continuous monitoring of our deteriorated health facilities due to inconsistent up keeping and cleaning seen at the local level (plumbing issues, AC issues, poor security, dirty walls, clutter rooms, leaky roof, septic over-flow, broken down fences, snakes in facilities, whole in attics, lacking transportation to remove medical waste, staff are highly exposed when handling medical waste, hazardous allowance are not given to staff who handles medical waste and chemicals, increasing rate of needle stick injuries, etc.).
15. Increase to the minimal requirement, adequate clinical human resources to ensure quality of services is provided, e.g. Caretakers/domestic assisting staff with vital signs and on mobile services which duties and responsibilities in their job description, inadequate use of human resource to do technical clinical work, this is crucial and can lead to medical negligence and/or serious harm to patients. Infection Control Nurse are engaged in many other duties not related to Infection Control and prevention, leading to decreased in infection control practices seen in at our health facilities.
16. Succession plan is critical and need to be addressed at the administrative level due to long delays in filling of post at national and local level.
17. Quality Committee need to meet as scheduled and forwards minutes of meeting with action table to DHS and L&A Unit. Participation rate of key personnel is very low and some of the committee are dormant (Corozal, Stann Creek, Toledo, WHR, SI and OW mainly).
18. Sterilization is done in poor conditions, the MOH needs to support the relevant infrastructure requirements for the services offer/conduct at the health facilities. Sterilization room is lacking, facilities have inadequate space for MCH, filing cabinets, no asthma bay etc., pharmacy requiring air conditioners, need for extended waiting area/sheds for patients at rural facilities, training on cold chain management, terminal cleaning not done as often as needed.
19. The unit requires a transport to execute monitoring as needed and an infection control specialist. The demand for monitoring to ensure compliance in the health system has grown and the unit capacity is not growing with the demand.
20. Continued support from the Ministry as it relates to infection control – housekeeping aspect (purchasing of the right supplies that will enhance quality and efficiency and cost saving). Replacement of Infection Control Nurses at PG and NRH.

21. Support for hazardous and uniform allowances for Housekeeping Staff and Attendants, hazardous allowance for QAC, AHC, Director L&A, Ass. Radiographers and radiographers, Lab Aide, Porters, Groundsman, EMT's and uniform allowance for EMTs.
22. Review and approve Ambulance Operations Policy for the Ministry of Health.
23. Approve framework for Quality of Care for Public Hospitals.
24. Submit for enactment Medical Services and Institutions Bill, 2011
25. Consider inclusion of a representative from the Licensing and Accreditation Unit on the Tender Committee for the Ministry of Health since infection control supplies, medical device and equipment are all part of the list.
26. Develop a health facility approval committee for infrastructural approval at HQ for all new and renovated health facilities to ensure they meet required standards.

3.9 Nutrition Unit

3.9.1 Achievements

1. Coordinate National COVID Food Pantry Program (Dec 2020 – Feb 2022) and ongoing, Supervise staff of 5 and coordinate processing of over 12,000+ COVID food packages countrywide in all districts
2. Staff Wellness Assessment for public officers (55 persons from Ministry of Health and nearby ministries)
3. Planning and Conducting Nutrition training for Food vendors- Sodium Reduction Campaign for NCD prevention. Implemented in all districts. A total of 28 sessions conducted countrywide at food handlers training sessions
4. Assessment of Dietary Units at regions, provide guidance and recommendations, drafted memo to advise on meals. Conduct Dietary Unit training with dietary supervisors, cooks, dietary aides
5. Conduct nutrition through emergency trainings with 165 community workers and 45 rural health nurses country wide
6. Meetings and support for the relaunch of the new for Parliamentary Alliance for Malnutrition. Support update of work plan
7. Organize and start work on Nutrition Policy (PAHO, MOH, INCAP, UNICEF and others)
8. Organize and Coordinate National Breastfeeding Week Initiative Campaigns (Aug 2021) Exclusive breastfeeding campaign and sessions nationally for the week
9. Design 2 Breastfeeding Support videos for media promotion. Breastfeeding and the work place and coordinate and support National Breastfeeding Activities for regions. Distribute 200 care packages for breastfeeding mothers who are doing exclusive breastfeeding
10. Support Wellness Week for Sept 2021. Staff activities and nutrition assessment session for HQ in Belmopan

11. Training in Nutrition for schools feeding (210 teachers nationally held in February, August, Nov 2021)
12. Coordinate and support World Food Day regional activities and World Diabetes Day regional activities, nutrition promotion activities

3.9.2 Challenges

1. Limited support staff at regions (have to rely on HECOPAB, CHWS and rural nurses to support nutrition at community level)
2. Limited funds for dietary units and lack of staff for dietary units
3. Regions use nutritionists to support other COVID related activities
4. Limited transportation for community activities at regional level
5. More pressing COVID or other health related activities takes precedence over nutrition related activities
6. Limited funds from GOB at the national level to support Nutrition activities

3.9.3 Recommendations

1. More collaboration with HECOPAB, and MCH unit for outreach sessions, cooking sessions at the village level.
2. Training for nurses and doctors on Nutrition counseling and advice and recommendations for Nutrition Unit.
3. Look at the possibility of charging for meals served at hospital, to be discussed
4. Nutritionists that do consultations should request and keep INCAPARINA on hand also CHWs should have access to INCAPARINA in far rural communities. Not only MCH.
5. Meeting with regional managers to discuss challenges with dietary unit

3.10 Belize Health Information System IT Unit

3.10.1 Achievements

1. BHIS Upgrade to Latest Version (Main features includes:)

- Enhanced Security
- Functionality of multiple Nodes on 1 server (hardware)
- Appointments Calendar
- Program/Form Builder
- Linkage of Mother's to Child
- Cumulative Patient Profile (CPP)
- MCH – worksheets, Antenatal measurements, GA recording (ultrasound, Antenatal Measurements)
- SOAP Note style (Outpatient encounter only)

- Enhancement of Allergies- medication and non-medication allergies
- Enhancements of clinical notes, diagnoses, referral, and update of diagnoses
- Attachment

2. Review/Acceptance of Terms of Reference for Clinical Exchange Data Platform: CDEP

3 Configuration of BHIS for Public access

4. BHIS rollout to 4 new sites

- Bullet Tree Health Centre
- San Antonio Health Centre
- Valley of Peace Health Centre
- Placencia Health Centre

3.10.2 Challenges

1. **Internet Services for Remote areas** • Health Centres still utilizing old technology (DSL)
2. Wireless Internet (not stable)
3. **Budget:** • Limited Finance. (Recurrent and Cap11 to purchase new equipment)
4. **Human Resource** • Additional staff needed

3.10.3 Recommendations

1. Ensure the roll out and Implementation of the following Upcoming projects in 2022

- BHIS enhancement package 11
- New Report Software for BHIS
- Clinical Data Exchange Platform and Data Warehouse
- Data Repository Project with PAHO
- Active Directory Servers - Regions (WRH, CHR, NHR)
- Upgrade of LAN networks at Health Regions (Cat 5 to Cat6 network)

2. Ensure the continued Rollout of BHIS in the following villages in 2022.

- Maskall
- Double Health Cabbage
- Burrell Boom
- Crooked Tree
- Cristo Rey
- Chunox
- Sartenja

3.11 Policy, Planning and Project Management Unit

3.11.1 Achievements

Policy and Planning Unit

National Cancer Plan	Completed
Human Resource Assessment	Completed
MOHW Vacancies assessment	Completed
Wellness Strategic Plan	80% completed
Staff Engagement Survey (SES) report	Completed
Patient Satisfaction Survey (PSS) report	Completed
Staff Engagement Survey (SES) report	Completed
PCP, Health Center, Regional and Community hospitals KPI assessment and report	Completed
Establishment of an ECHO hub in collaboration with MOHW, IDB and the University of Uruguay	Ongoing
Modernization of birth registration process project in collaboration with UNICEF	Partially completed
COVID education sessions prepared and presented to government agencies such as (Coast Guard, and Belize City Council)	Completed
Assisted with setting up of Covid-19 testing sites	Completed
IHSDN training for staff in all 4 health regions	Ongoing

Project Management Unit

- I. Successfully finalized (from tendering to contract award to management of contract) the procurement processes for the purchase of the following items under the IDB Funded Immediate Public Health Response Project:

Activity	Cost (BZ\$)	Details of Purchase
Procurement of Supplies for digital communication	\$73,993.50	Supply of 81 tablets to support application for tracking of distribution of personal protection equipment
Procurement of Enzymes and supplies for PCR test	\$353,525.60	Purchase of enzymes and supplies for Covid-19 PCR Testing
Purchase of Personal Protective Equipment	\$990,000.00	Purchase of various sizes of disposable coveralls, surgical gowns, and other personal protection equipment
Purchase of Medical equipment for COVID19 emergency	\$2,692,087.16	Purchase and distribution of various medical equipment to public health care facilities countrywide including KMH. Equipment

		include ventilators, patient monitors, EKG machine, infusion pumps, suction machine, etc.
Purchase of 100,800 COVID-19 Vaccines		Purchase of AstraZeneca vaccines from PAHO through the COVAX mechanism
Support to Risk Communication	\$23,893.38	Engagement of Graphic Designers and launch of COVID-19 Christmas Campaign
Engagement of Temporal Healthcare Workers	\$528,769.00	Engagement of about 58 temporary workers to support covid-19 efforts: Nurses, Medical Doctors, Medical Technologists, Pharmacists, Patient Care Assistants, Cleaners (multiple 3 to 6 months contract)

- II. Successfully finalized (from tendering to contract award to management of contract) the procurement processes for the purchase of the following items under the IDB Funded Program to Support the Health Sector to Contain and Control Coronavirus and to Mitigate its Effects on Service Provision (Vaccine Project):

Activity	Cost (BZ\$)	Details of Purchase
Purchase of Vehicles to Support Vaccine Deployment	\$132,800.00	Supply of 2 pickup trucks to supply vaccine deployment
Engagement of Temporal Healthcare Workers	\$292,735.00	Engagement of about 28 temporary workers to support vaccination efforts: Nurses, Medical Technologists, and Patient Care Assistants (6 months contract)

- III. Successfully finalized (from tendering to contract award to management of contract) the procurement processes for the purchase of the following items under the CDC/Task Force for Global Health Grant:

Activity	Cost (BZ\$)	Details of Purchase
Engagement of Temporal Healthcare Workers	\$129,088.00	Engagement of about 19 temporary workers to support vaccination efforts: Nurses, Medical Technologists, and Medical Officers (3 months contract)

- IV. Successfully secured grant from the CDC of \$150,000 US to be used to hire Human Resources for Covid-19 vaccine coverage.

- V. Assisted with the procurement of goods for the Ministry's national COVID-19 Response.
- VI. Successfully executed the Water, Sanitation and Hygiene (WASH) Projects in the following villages: San Jose/San Pablo. Funded by the Caribbean Development Bank.
- VII. Provided support to the Taiwanese funded Imaging Project, specifically managing the following procurement processes:
 - (1) Supply of Computers and Communication Equipment – bid evaluation stage
 - (2) Supply, Delivery, Installation, Training and Maintenance of a Picture Archiving & Communication System (PACS)
- VIII. Completed technical specifications for medical equipment to be procured under a grant from the Japanese Government.

Activity	Cost (BZ\$)	Details of Purchase
Support for Covid-19 Response in the form of donated medical equipment	\$1,846,250.32	Procurement of ambulances, blood gas analyzers, chemistry analyzers, ICU beds, EKG, Emergency Crash Cart, Infusion pumps, mechanical ventilators, mobile x-ray, Ultrasound, transport monitor and pulse oximeter.

- IX. Completed technical specifications for medical equipment to be procured under a grant from the Indian Government.

Activity	Cost (BZ\$)	Details of Purchase
Strengthening Clinical Management of COVID-19 Patients and Reducing of Risk of COVID-19 Transmission among Health Workers in Belize.	\$2 Million	Procurement of Autoclaves, Transport Trolley - medical waste, Emergency medication cart, Patient monitors, EKG machine, Suction machines, Incubators, and Medical Waste Incinerator

- X. Completed technical specifications for digital x-ray machines being bought through the International Atomic Energy Association (IAEA); equipment delivered to MOHW and awaiting installation.

Activity	Cost (BZ\$)	Details of Purchase
To strengthen the diagnostic imaging service to improve	\$2 Million	Procurement of Autoclaves, Transport Trolley - medical waste, Emergency medication cart, Patient monitors, EKG

diagnosis, treatment and safety standards		machine, Suction machines, Incubators, and Medical Waste Incinerator
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XI. Received and distributed Medical equipment from Korean Government:

- a. Patient beds
- b. ICU beds
- c. Laboratory supplies
- d. Digital X-ray unit

XII. INFRASTRUCTURE WORKS: SMART HEALTH FACILITIES UPDATE:

a. FUNDED BY UK AID

STATUS HEALTH FACILITIES AND TOTAL INVESTMENT		
HEALTH FACILITY	RETROFITTING	RETROFITTING CONTRACT VALUE
CLEOPATRA WHITE	COMPLETED	US\$1,304,675.16
PALM CENTER	COMPLETED	US\$647,090.80
SAN IGNACIO	COMPLETED	US\$1,567,844.29
INDEPENDENCE	COMPLETED	US\$1,320,501.62
SAN ANTONIO / ISABEL PALMA	COMPLETED	US\$478,744.74

b. FUNDED BY THE EUROPEAN UNION

- Design Phase completed for WRH, SRH, PGCH, CCH
- Contract awarded for retrofitting of PGCH

XIII. INFRASTRUCTURE WORKS: BUILDING OF NEW HEALTH FACILITY

- A. Maria Crawford HC in Crooked Tree – Completed
- B. Belmopan Polyclinic II – 98% completed
- C. Caye Caulker HC – Construction has started

XIV. OTHER INFRASTRUCTURE WORKS

Renovation of Bullet Tree Falls HC	Completed
Renovation of living quarters at Ladyville HC	Completed
Renovation of Hattieville HC	Completed
Renovation of Pueblo Viejo HC	Ongoing

Renovation of Santa Theresa HC	Ongoing
Design Phase for Pediatric wing for NRH	Ongoing
Mobile Field Hospital assembly and training	Completed
Design Phase for renovation of Pomona HC	Completed
Design Phase for construction of waiting area at CCH	Completed
Identification of Hospital Construction Needs	Belmopan City, San Pedro Town, Punta Gorda Town, and Orange Walk Town.
Identification of Health Centre construction Needs	San Estevan Village, Santa Martha Village, Hopkins Village and one in Toledo District.

3.12 Family and Community Health

3.12.1 Key achievements

1. No Vaccine Preventable Disease diagnosed in 2021
2. Vaccination coverage greater than 70% in 2021 – all vaccines
3. Two-third of population 12 years and older vaccinated against COVID 19
4. Rehiring of retired Rural Health Nurses to bridge the gap in HRH
5. Increased access to LARC methods by postnatal mothers with HIV
6. Reduced under five mortality rate from 15.4 and 14.85 / 1000 LB
7. Access to grant funds or technical assistance in support of public health interventions to improve maternal and child health outcomes: UNICEF, UNFPA, PAHO, Vitamin Angels, Salud Mesoamérica Initiative, IDB
8. The MCH unit supported the national response to COVID -19 (technical support at local level, Ag RT sites in the community, updating of management protocols).

3.12.2 Major Challenges

4. The COVID-19 pandemic response includes measures restricting the movement of persons within and outside of their community and/or district of residence. The number of face to face encounters is reduced to prevent transmission of the virus.
5. Fear in the community of contracting COVID-19 if they receive services at a health facility.
6. Involvement and access to multiple projects complementing GOB investment in health. Each project comes with unique dynamics and need of personnel time for coordination, intersectoral collaboration, monitoring and evaluation and reporting mechanisms.
7. The personnel dedicated to the Expanded Program on immunization continue to have limitations with transportation (assign vehicle and driver to MCH Unit at local level) to execute planned mobile clinics or outreach sessions (e.g. home visits, health fair).

8. The national response to COVID-19 demands a high proportion of personnel time.
9. Stock out of contraceptive methods due to lack of finances in addition to increase in charges for shipping, handling and insurance.
10. With a growing population, the number of nursing and medical staff at primary care level is insufficient, and this could be driving patients to secondary and tertiary care, where the health care services are costlier.
11. The community platform needs to be strengthened for early identification of health conditions in the most vulnerable population e.g. pregnant women and young children.
12. The health facilities require a review and revamp of medical equipment and supplies. The unit will work on a proposal to seek funding from partners.
13. Protocols and guidelines for services provided to improve maternal and women health and reduce child mortality requires updating.

3.12.3 Recommendations

1. Collaborate with line ministries with the establishment of the Early Childhood Development Commission
2. Establish the Quality Improvement Unit at the MOHW
3. Continue with the maternal and neonatal care clinical audits at hospitals
4. Update the obstetric, neonatal and pediatric care guidelines
5. Increase the access to screening for cervical cancer with the introduction of the human papillomavirus testing
6. Increase the vaccination coverage for routine vaccines targeting children, pregnant women and other population groups.
7. Continue with the COVID 19 vaccination campaign
8. Introduction of the early childhood development visiting program targeting pregnant women, women in postnatal period

Chapter 4: Future Priorities and Plans

A consultative group of high level technical persons from the MOHW have developed a very comprehensive Operational Plan 2022/2023 to implement the Strategic Objectives outlined in the HSSP, Plan Belize Manifesto and Horizon 2030. This operational plan highlights several indicators and targets which are summarized below.

1. Achieving Universal Health Coverage:

Rolling-out the National Health Insurance (NHI) to all Belizeans without prejudice to race, gender, or geographical location. Belize will be able to achieve Universal Health Coverage with an emphasis on Primary Health Care Services. This will also address the rising trends of maternal and infant mortality and early deaths associated with non-communicable diseases.

2. Provision of a Basic Package of Services:

Revisit the basic package of services being provided by primary and secondary health services to suit the epidemiological profile of the country. The package of services must be equitable and comprehensive with a focus on the life course. The MOHW must address the shortage of basic medications, medical supplies, and medical equipment needed for doctors and nurses to provide quality health services. Improvement in the care for patients who suffer from diabetes, hypertension, cardiovascular diseases, mental health illnesses, cancer and reduce the spread of dengue and HIV. The MOHW will re-institute a patient's bill of rights and responsibilities.

3. Human Resources for Health:

Investment in Human Resources for Health (HRH) is paramount in order to address the health issues of the population. Staff must be well trained, adequate and most of all must CARE for their patients. Interventions such as a retention package needs to be instituted in order to maintain HRH in-country and prevent their migration to developed countries. The MOHW must advocate and take the lead in creating educational opportunities to train more doctors and nurses and to build capacity in specialized care and support the development of the Faculty of Medicine at the University of Belize. This will also address the presence HRH in rural communities.

4. Resilient Health Infrastructure:

Health facilities managed by the MOHW must be built to standards and must be adequate and safe for health services being provided. New hospitals need to be constructed in Punta Gorda, San Pedro Town, and Belmopan City taking into account

major services. The retrofitting of existing structures to become SMART health facilities is also priority. Health Centres and Health Posts that have been neglected will be repaired and will have a robust maintenance plan.

5. Health Information System:

The Belize Health Information System (BHIS) is the main data collection system for the MOHW. This electronic medical record must be deployed to all health facilities, both urban and rural. The information captured can then be utilized for data capture, analysis and decision making.

6. Strengthen Public Health Policies:

Outdated policies need to be updated and revised to address the realities of public health. This includes the Medical Services and Institutions Act, the Public Health Act and the Quarantine Act.

7. Elimination of Malaria:

Belize is one of few countries on the verge of eliminating malaria. It has now been three years that Belize has not reported an autochthonous case of malaria and is now eligible to be certified malaria free. The process to being classified as malaria free has started and includes investments in heightened surveillance and interventions to prevent a new case of malaria to appear in Belize.

Chapter 5: Staffing and Financial Considerations

Human Resources for Health:

There are approximately 2,000 public officers employed in the Ministry of Health and Wellness of which approximately 976 are considered technical staff (Doctors, Nurses, and Dentists). A recent assessment of human resource for health showed the following conclusions and recommendations:

“The results of this Human Resource for Health assessment in the public health system clearly shows a disparity and uneven distribution of the health workforce. When compared with both HRH benchmarks for achieving Universal Health Coverage and for achieving the Sustainable Development Goals there is a shortage of approximately 32.6% and 47.7% respectively. There is disparity in distribution between health regions and between health facilities. It is also noted that there are a number of key available posts that need to be filled. This includes a number of administrative technical staff, specialists and nurse specialists. In order to move forward it is necessary to first fill the available posts within the four health regions. Based on the recommended benchmarks in order to achieve universal health coverage, the Ministry of Health and Wellness must fully implement the BELIZE HUMAN RESOURCES FOR UNIVERSAL HEALTH STRATEGIC PLAN 2019-2024. The HRH plan has five strategic objectives and seeks to address the HRH issues within the public health system. These include:

- SO1: Strengthen leadership and consolidate governance in human resources for health
- SO2: Develop conditions and capacities in human resources for health to expand access to health and health coverage with equity and quality
- SO3: Increase investment in human resources for health in order to increase the pool of qualified personnel, improve the health of the population, and contribute to national development
- SO4: Strengthen multi-sectoral collaboration to improve education systems for human resources for health
- SO5: Strengthen health workforce partnership to respond to the needs of the health system in transformation towards universal access to health and universal health coverage

An effective health workforce should be urgently mobilized to implement priority national programs resulting in long term building of sustainable human resource capacities, positive work environment, education and training, and enabling policies. Furthermore, evidence has shown that investing in human resources for health improves employment rates and enhances economic growth.”

Health Financing:

The annual budget for the Ministry of Health and Wellness has remained with a cap of approximately \$141,000,000. However, the Covid-19 pandemic highlighted the need to have a public health emergency fund that can be easily accessed in times of urgent need. With

new emerging diseases and the threat of climate change this is of utmost importance. Most of the budget is allocated to emoluments followed by hospital services. Primary Health Care services is allotted approximately 10% of what is allotted to hospital services, hence the need to re-strategize in order to invest more in primary care to achieve Universal Health Coverage.

PROGRAMME EXPENDITURE SUMMARY			
No.	Programme	2021/22 Forward Estimate	2022/23 Forward Estimate
034	STRATEGIC MANAGEMENT AND ADMINISTRATION	\$57,425,338	\$57,367,255
	Recurrent Expenditure	\$53,122,005	\$53,163,922
	Capital II Expenditure	\$3,520,000	\$3,520,000
	Capital III Expenditure	\$783,333	\$683,333
035	MEDICINE AND TECHNOLOGY	\$18,237,676	\$18,131,621
	Recurrent Expenditure	\$18,237,676	\$18,131,621
	Capital II Expenditure	\$0	\$0
	Capital III Expenditure	\$0	\$0
036	PRIMARY CARE SERVICES	\$5,465,777	\$5,570,537
	Recurrent Expenditure	\$5,465,777	\$5,570,537
	Capital II Expenditure	\$0	\$0
	Capital III Expenditure	\$0	\$0
037	HOSPITAL SERVICES	\$59,182,586	\$59,322,787
	Recurrent Expenditure	\$59,182,586	\$59,322,787
	Capital II Expenditure	\$0	\$0
	Capital III Expenditure	\$0	\$0
038	COMMUNITY BASED SERVICES	\$979,080	\$974,481
	Recurrent Expenditure	\$979,080	\$974,481
	Capital II Expenditure	\$0	\$0
	Capital III Expenditure	\$0	\$0
TOTAL BUDGET CEILING		\$141,290,456	\$141,366,682
	Recurrent Expenditure	\$136,987,123	\$137,163,349
	Capital II Expenditure	\$3,520,000	\$3,520,000
	Capital III Expenditure	\$783,333	\$683,333
SUMMARY OF RECURRENT EXPEMDITURE		2021/22 Forward Estimate	2022/23 Forward Estimate
230:PERSONAL EMOLUMENTS		\$60,724,978	\$59,798,066
231:TRAVEL & SUBSISTENCE		\$1,863,121	\$1,830,282
340:MATERIALS & SUPPLIES		\$19,408,473	\$20,446,602
341:OPERATING COSTS		\$3,610,881	\$3,692,921
342:MAINTENANCE COSTS		\$1,901,267	\$1,897,107
343:TRAINING		\$1,948,643	\$1,968,610
344:EX-GRATIA PAYMENTS		\$5,000	\$5,000
346:PUBLIC UTILITIES		\$1,087,100	\$1,087,100
348:CONTRACTS & CONSULTANCY		\$20,443,095	\$20,443,095
349:RENTS & LEASES		\$0	\$0
350:GRANTS		\$25,994,566	\$25,994,566
TOTAL RECURRENT EXPENDITURE		\$136,987,123	\$137,163,349

Chapter 6: Conclusions and Recommendations

The Belize Health System has been over-burdened, over the last two years, due to the Covid-19 Pandemic. The major gaps highlighted by the pandemic have exposed a fragmented and unprepared health system. Most of the health resources have been directed to tackle the pandemic and the priority intervention is to now vaccinate as much people as possible in order to achieve 70% vaccination coverage of the population. Even though health services were severely affected, there were many achievements in the year 2021. Investments from the Government of Belize and from donor partners allowed for an enhanced response to the Covid-19 pandemic and this also secured needed human resources, medical equipment and other medical resources of need.

Now that the pandemic is on the wane, it is now the time for the MOHW to redeploy its resources to tackle the major health issues affecting the population. In order to achieve Universal Health Coverage, investments must be made in the health sector to finance the NHI program to provide equitable and accessible health services to all. In addition, the MOHWs efforts should be geared towards prevention and promotion of health. However, without the necessary human resources for health it will be impossible to achieve the sustainable development goals or to meet the health needs of the population. An increase in the investment of HRH to at least achieve the bench mark of 3.45 health care workers per 1000 population is imperative.

The MOHWs Operational Plan 2022-2023 is a comprehensive plan developed by key technical personnel to address the health needs of the population. This plan has been developed to address critical health concerns and encompasses specific interventions and targets as stipulated by the Belize Health Sector Strategic Plan 2014-2024, Plan Belize of the Government, and Horizon 2030. Non-communicable diseases continue to be the major causes of morbidity and early mortality. Interventions should be aimed at decreasing the risks factors and educating the population on healthy lifestyle behaviors and wellbeing. No mother or newborn should die due to complications of pregnancy or during delivery. Quality prenatal care and neonatal care is essential to increase the chance of survival for both mother and child. Without adequate infrastructure it is impossible to provide quality health services in a comfortable and safe manner. Continued efforts should continue in the investment of SMART health facilities in order to build resilience against climate change and natural disasters. The Belize Health Information System must continue to expand to rural health facilities to capture data for analysis and better health planning. Lastly, the outdated policies and legislature that governs public health must be updated to meet the reality of the 21st century.