ETHIOPIAN PUBLIC HEALTH INSTITUTE

STRATEGIC PLANNING AND MANAGEMENT-III (SPM-III) 2020/21-2029/30

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List of Acronyms

AMR	Anti-Microbial Resistance
ANC	Antenatal Care
APHI	Amhara Public Health Institute
AWD	Acute Water Diarrhea
BPR	Business Process Reengineering
BSC	Balanced Score Card
BSL	Bio Safety Level
CCV	Cell Culture Vaccine
CDC	Center for Disease Control
CPD	Continue Professional Development
CSA	Central Statistical Agency
DGs	Director General
DHS	Demography and Health Survey
e PHEM	Electronic Public Health Emergency Management
EDHS	Ethiopia Demography and Health Survey
EDKs	Emergency Drug and Kits
EHNRI	Ethiopian Health and Nutrition Research Institute
EID	Early Infant Viral Load Diagnostics
EMDHS	Ethiopia - Mini Demographic and Health Survey
EOC	Emergency Operation Center
EPHI	Ethiopian Public Health Institute
EPHIA	Ethiopia Population-based HIV Impact Assessment
EPRP	Emergency Preparedness and Response Plan
ePT	Electronic Proficiency Testing
EQA	External Quality Assessment
ESCM	European Society for Composite Materials
ESHPT	Ethiopian's Selected Hazardous Pathogens and Toxin
ESIA	Environmental and Social Impact Assessment
ESMF	Environmental and Social Management Framework
EVID	Evidence Informed Decision Making
FDRE	Federal Democratic Republic of Ethiopia
GAVI	Global Alliance for Vaccine and Immunization
GBD	Global Burden of Diseases
GERD	Grand Ethiopian Renaissance Dam
GMP	Good Manufacturing Practice
GTP-II	Growth Transformation Plan Two
HAD	Health Development Army

HEWs	Health Extension Workers
HMIS	Health Management Information System
HSTP I	Health Sector Transformation Plan One
ICT	Information Communication Technology
ICWMP	Infection Control and Waste Management Plan
IFMIS	Integrated financial management information system
IHME	Institute for Health Metrics and Evaluation
ISO	International Standard Organization
JEE	Joint External Evaluation
KT	Knowledge Translation
LFA	Logical Framework Approach
LIS	Laboratory Information System
LQMS	Laboratory Quality Management System
LTT	Long Term Training
MNH	Maternal and Neonatal health
MoH	Ministry of Health
MTBDR	Mycobacterium Tuberculosis Drug Resistant
NADHIC	National Animal Diagnostic and Health Investigation Centre
NDMC	National Data Management Center
NGO	Non-Governmental Organization
NICD	The National Institute for Communicable Diseases
NNP	National Nutrition Program
NPHTC	National Public Health Training Center
NTD	Neglected Tropical Disease
NTV	Nerve Tissue Vaccine
NVI	National Veterinary Institute
PHE	Public Health Emergency
PHEM	Public Health Emergency Management
PMED	Plan Monitoring and Evaluation Directorates
PoE	Point of Entry
PT	Proficiency Test
QA	Quality Assessment
QMS	Quality Management System
RDT	Rapid Diagnostics Test
SARA	Service Availability and Readiness Assessment
SLIPTA	Stepwise Laboratory Improvement Process Towards Accreditation
SLMTA	Strengthening Laboratory Management Towards Accreditation
SO	Strategic Objectives

SOP	Standard Operational Procedures
SPA	Service Provision Assessment
SPM	Strategic Planning and Management
SR	Strategic Result
STT	Short Term Training
TB	Tuberculosis
THRI	Tigray Health Research Institute
UN	United Nation
VERI	Vital Events Registration Information
VRAM	Vulnerability Risk Assessment and Mapping
WHO	World Health Organization
PPV- EBS	Positive Predictive Value of Environmental based surveillance
QMRA	Quantitative Microbial Risk Assessment
OHT	One Health Tool

Forward

The Ethiopian Public Health Institute Director-General, Ebba Abate (Ph.D.)

Executive Summary

The Ethiopian Public Health Institute (EPHI) was established as a hospital in 1922 by an American missionary named *Dr.Thomas Lambie* and evolved many structures and mandates. Currently, the Ethiopian government re-established under Regulation No.301/2013 following the former Ethiopian Health and Nutrition Research Institute (EHNRI). The primary mandates of the institute are to conduct research and technology transfer, conduct public health risk surveillance for the early risk identification, detection, and prevention: strengthen national medical laboratories, alongside these to build the capacity of the Public Health workforces and manage national health data.

In the thick of the values of EPHI-continuous learning and improvement, creativity and innovation, evidence-based public health, human-centered, proactive and responsive problem-solving approach, professionalism, rule of law, transparency, accountability, and timely action, the institution missioned to be a center of excellence in Public Health in the World. In the process, the institution had implemented the SPM-I and SPM-II from 2010/11-2014/15 and 2015/16-2019/20, respectively; and accomplished remarkable and outstanding activities. The current SPM-III has been designed with the following listed strategic objectives:

- **SO-1:** Enhance Research, evidence synthesis, and production package innovation
- **SO-2:** Enhance digital health data science, analytics, and information system
- **SO-3:** Build a Resilient Public Health Emergency Management for Strong National Health Security
- **SO-4:** Enhance building sustainable and resilient laboratory system for High-Quality Laboratory Services.
- **SO-5:** Enhance Core Public Health Capacities for Proactive Governance.

Aligning the strategic objectives, the institution has put the expected results as listed below:

- **SR-1**: Scientific evidence-based information/knowledge that will be translated into policies, programs, public education & knowledge, product packages, and products.
- **SR-2**: Enhanced digital health data science, analytics, and information system
- **SR-3:** Protected and Treated General Community from Public Health Risk and Emergencies.
- **SR-4:** Sustained and resilient quality laboratory system and services
- **SR-5:** Enhanced Capacities and Enabling Environment for Public health

To achieve the strategic results and the planned ten years targets, detail major and specific activities of each of the directorates of the institution under the following strategic directions:

- Advance Evidence Synthesis, Policy Analysis, and Knowledge Translation for Evidence-Informed Decision-Making.
- Enhance communicable and non-communicable diseases Research and Surveillance
- Improve traditional and modern medical research and development
- Strengthen research and surveillance on nutrition, food science, and food safety
- Strengthen Research and Evaluation on Health system, MCH, health policy, program, and strategies
- Improve research and development, for Local Vaccines and Diagnostics Production
- Improve Health and Nutrition Technology Transfer
- Enhance national health data repository, data security systems, and strong data governance systems and maintain database interoperability
- Advance public health data science Computational Methods, statistical and mathematical Modelling and visualization techniques
- Strengthen national, sub-national, and local burden of diseases estimate using health metrics measurements
- Improve Public Health Preparedness and Readiness
- Strengthen Diseases and Health Events Surveillance and Information System Management
- Strengthen Prompt Public Health Emergency Response and Recovery
- Enhance Communicable Disease Control at PoEs and Cross Border collaborations
- Strengthen the Implementation of Laboratory Quality Management System and Accreditation
- Enhance the Standardization and Expansion of Laboratory Services
- Strengthen Laboratory Equipment Management System
- Strengthen Biosafety, Biosecurity and Hazardous Waste Management System
- Enhance the Implementation of External Quality Assessment (EQA) Schemes
- Strengthen the Implementation of Laboratory Information Management System (LIMS)
- Improve resource mobilization, utilization, and program follow-up

- Improve Institutional Capacity Building
- Ensure Institutional Accountability, Transparency, and Good Governance
- Strengthen Coordination, Collaboration, and Partnership

EPHI follows the principles of equity, solidarity, decentralization, participatory and all-hazard approach in implementing the planned activities. The institutes utilize the existing structures of the health system so that Regional Health Bureaus will establish their own Public Health Institutes. So far, the four regions (Amhara, Tigray, Afar, and SNNPR) established their institutes while the rest five regions (Oromia, Somali, Gambelia, Harari, and Beneshangule-Gumez) and two city administrations (Addis Ababa and Dire-Dawa) are in the process of realizing the institute.

The regional health bureaus and public health institutes will develop their strategic planning and management by cascading this strategic planning and management (SPM-III) as the main benchmark and source of pathways. The implementation of the strategies playing their role and take responsibility will demark the EPHI and the regions through establishing Joint Public Health Steering Committee (JPHSC). The committee will provide overall guidance for the preparation of the sector-wide public health plans, select priority programs, and allocate resources across different development components. It serves as a linking mechanism between the public health institute and the major partners in public health development.

SPM-II will utilize the Top-Down and Bottom-Up mixed approach. The strategic cellar with a variety of governmental directions will follow the Top-Down flow of ideas and the bottom institutions' leadership and experts will comment and adjust the comments. As an integral part of this SPM, the Monitoring and Evaluation Framework has been adapted the logic model which is based on the Ethiopian health system framework and adaptation of the recent WHO's Monitoring and Evaluation framework.

In tracking overall performances, the PMED team designed the Monitoring and Evaluation system by structuring it as two reporting mechanisms. The first one is the institute level performance measurement and reporting system through which periodic or short-term (monthly or quarterly) reports will be collected using an internally developed management tool

in capturing data of the composition of input, process indictors and most of the early stage of the plan while the second one focuses in measuring the strategic objectives and directions indictors.

Considering the advancement of the information and communications technology (ICT) industry and the growing magnitude and type of information needed in public health, the PMED team shift traditional and custom-based data management systems to modern digital technology. Thus, the team has planned to automate the routine high-quality data timely collection, visualizing trends, progresses, and other performances by creating user-friendly dashboards for better data utilization. Besides ensuring the availability of an adequate amount of data, the team strongly works in supporting all eligible data users to access any data that they require for their utilization.

CHAPTER ONE

1. INTRODUCTION

The Ethiopian Public Health Institute (EPHI) developed this Strategic Planning and management -III (SPM-III) document following the institution SPM-II, the country health sector transformation plan (HSTP), and the overall country development Plan. In this period Ethiopia has progressed in terms of universal health coverage, key health outcome measures, economy, and education. However, there are still public health challenges that include epidemics, climate change, un-proportional population growth, internal displacement, drought, and famine.

1.1 Country Context

1.1.1 Geography

Ethiopia is a country located in the Eastern part of Africa, and its Capital Addis Ababa is the set for Africa Union (AU) and center for Diplomacy. Ethiopia is one of the oldest independent countries in the world and rich in history with diverse ethnicity, culture, and languages. Ethiopia has 10 regional states and 2 charter city administrations, 86 zones, and 960 districts (Woredas). It is home to various ethnicities, with more than 80 different spoken languages.

Ethiopia is in the tropical zone having three different climate zones according to elevation Tropical zone (*Kolla*), Subtropical zone (*Woina dega*), and Cool Zone (*Dega*) with 4 distinct seasons, Summer (*Kiremt*), Autumn (*Belg*), Winter (*Bega*) and Spring (*Tseday*). The country is rugged which constituted mountains, hills, plateau, plains, valleys, and gorges. The varied topographic features represent diversified elevations and slopes with the lowest point at Danakil depression at about 126m below sea level and the highest on the top of Ras Dashen Mountain which is about 4,620m above sea level.

1.1.2 Population

Ethiopia has an estimated population of 101 million[2] and at the end of this strategic period the total population is expected to be 122million: Characterized by predominantly young, with 44% of the population being under the age of 15 years[3] and rapid population growth (2.6%), Consecutively, the demand for quality healthcare services is increasing because of a rapidly growing population, the re-emerging and emerging diseases like COVID-19, epidemiological transition, rapid urbanization, and broader social and economic changes exhibited in the country.

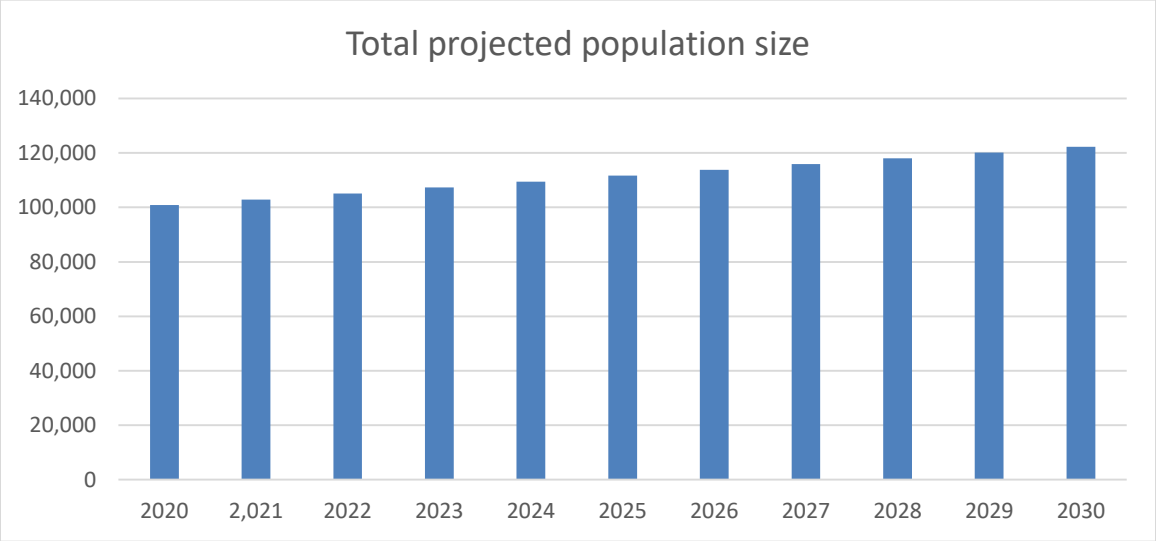


Figure 1.1 Expected total population size in the coming years

[2] CSA 2018 calculated projection - (2007-2037)
[3] Central Statistics Agency. Accessed at http://www.csa.gov.et/images/banners/csa2

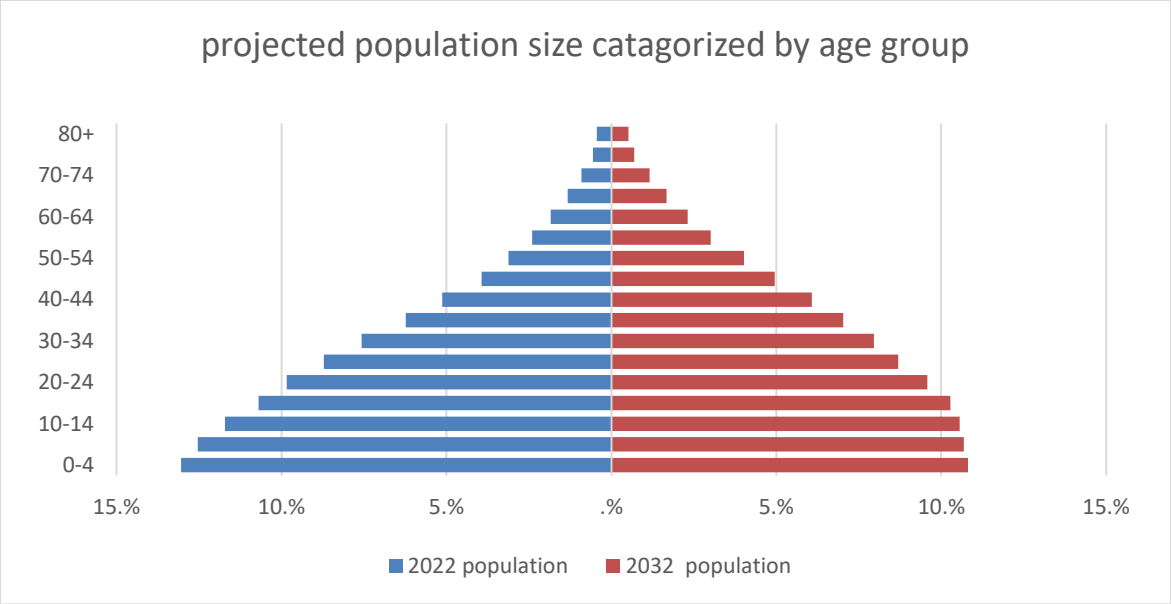


Figure 1.2 Proportion of age group among the total in the year 2022 vs 2032

1.1.3 Health

Ethiopia is progressing in some key health performance indicators. For example, under-5 mortality rates declined from 123 deaths per 1,000 live births in 2005 to 55 deaths per 1,000 live births in 2019. Similarly, infant mortality decreased from 77 deaths per 1,000 live births in 2005 to 43 deaths per 1,000 live births in 2019. Neonatal mortality decreased from 39 to 29 between 2005 and 2016 but has remained stable since 2016.

The 2019 EMDHS results show that 74% of women who gave birth received antenatal care from a skilled provider at least once for their last pregnancy. The percentage of women receiving antenatal care from a skilled provider was 28% in 2005, it has shown an increment of 46 percentage points over the 14 years. Among the total live births, 50% were delivered by a skilled provider and 48% were delivered in a health facility. The number of women receiving a PNC check-up in the first 2 days after birth has increased to 34%.

The prevalence of stunting has decreased considerably, from 51% in 2005 to 37% in 2019. Moreover, the prevalence of wasting decreased over the same period, from 12% to 7%. The

percentage of underweight children has consistently decreased from 33% to 21% over these 14 years.

There is an increase in life expectancy at birth to 65.5 years and Maternal mortality Ration (MMR) to 401.

Despite the significant improvement in the health sector the country is experiencing a quadruple burden of disease mainly attributed to communicable infectious diseases, nutritional deficiencies, non-communicable diseases, and traffic accidents. This is evident across different age, gender, location, and socio-economic status groups in the country. Maternal and neonatal health conditions remain a challenge, especially in rural areas and amongst poor women. NCDs such as hypertension, strokes, cancers, diabetes, eye disorders, traffic accidents, substance/medicine abuse, and related conditions are increasing in prevalence. In addition, Ethiopia has been experiencing the worst locust invasion in decades. This may undermine development gains and threaten the food security and livelihoods of millions of Ethiopians. where the health system is fragile and lacks responsiveness for diseases such as non-communicable diseases.

In this strategic period, Ethiopia is planning to increase Universal health coverage (UHC), which is about attaining effective coverage of essential health services and protecting people from financial hardship. In 2019, the UHC index for Ethiopia was 0.43; the target in 2024/25 is 0.58. There is also a plan to increase the resilience index from 0.49 in 2019 to 0.50 in the first five years of the strategic plan implementation period.

1.1.4 Socio-Economy

Ethiopia has experienced rapid economic growth over the last several years since 2003/2004. The economy has been registering almost double-digit growth rates, more or less with slight balanced growth in all sectors. Two periods of Growth and Transformation Plans (GTPI & GTPII) which were launched in 2010/11 and 2017/18 were used to put economic growth as the major pillar strategy to eradicate poverty in the country. However, the country's socio-economic

condition is still not satisfactory. According to World Bank 2019 report, GDP per capita was 856 USD[4] and It is rated the poorest and most heavily indebted countries of the world, about 26% of the populations of the country, mostly women and rural residents, are living with their income less than one dollar a day. In terms of health and welfare, it ranks among Africa's and the world's poorest nations and the infant mortality rate is among the highest in the world. Political instability is another major problem of Ethiopia for socio-economic development.

Ethiopia aims to achieve middle-income status by 2025 while developing a green economy. The country prepared the second Growth and Transformation Plan (GTP-II) sector-wide and the Health Sector Transformation Plan (HSTP) following the GTP-I and implemented it from June 2015 -June 2020. Currently, the country's ten years development plan and Health Sector Transformation Plan II (HSTP II) are being prepared with the main aim to create a country exemplary of prosperity in Africa and to improve the health status of the population respectively.

1.2 Context of the Institute

The Ethiopian Public Health Institute (EPHI) was established as a hospital in 1922 by an American missionary named *Dr. Thomas Lambie* and evolved many structures and mandates. The EPHI re-established under Regulation No.301/2013 with its current name replacing the former Ethiopian Health and Nutrition Research Institute (EHNRI). Ethiopian Public Health Institute is a pioneer National Public Health Institute in Africa combining public health research, nutrition, public health emergency management (PHEM), strengthen the National Laboratory Management System, Traditional medicine, National Data hub system, and Public Health training disciplines.

Primarily, the institute is mandated to conduct research and technology transfer, based on the national public health research agendas, on priority health and nutrition problems, generate and disseminate scientific & technological knowledge: to undertake public health emergency preparedness, surveillance and early warning, detection, response and recovery: strengthen

[4] World Bank national accounts data

national Medical Laboratories to providing quality laboratory services with trained manpower and advanced technologies, and carry out referral diagnostic and analytical tests. On top of the three mentioned primary mandates the institute shall have a responsibility to build the capacity of the Public Health workforces and to manage national health data and provide synthesized evidence for decision-makers.

Hence, EPHI has implemented the SPM-I and SPM-II from 2010/11-2014/15 and 2015/16-2019/20 respectively, remarkable and outstanding achievements in health research and technology transfer, laboratory quality management system and public health emergency management activities that have contributed to the Ethiopian Health system. Through SPM-I, two vital public health functions were initiated and implemented i.e., national data management system and public health training center.

To sustain these remarkable achievements, and to fill identified gaps and to address the challenges that were encountered, and to practice the lessons learned including that of COVID-19 preparedness and response, to build the National and Global health security capacity (IHR-2005), EPHI initiated the development of this ten years (2020/2021-2029/2030) third strategic planning and management (SPM-III) aligning with the second Health Sector Transformation Plan (HSTP-II), the government ten years development plan and relevant global health initiatives.

During the implementation period, the institute carried out compressive research, surveys and surveillances nationwide, the results of which are extremely crucial for the Ministry of Health, and the health sector in general through providing evidence for evidence-based formulation of policies, development of strategic plans, designing of initiatives and programs aimed at protecting the public from health threats as well as improving the quality and accessibility of health care services. These are SPA, Nutrition baseline and end-line surveys, Food Consumption Survey SARA, Steps NCD risk factor Survey, Mini EDHS, DHS-HIV, EPHIA, TB Prevalence Survey, Malaria Indicator Survey, and Micro Nutrient Survey, ANC surveillance, and so on. The NDMC is responsible for nationwide health and health-related data hub, data governance and data exchange, data interoperability and integration, data security system, web-based applications

and visualizations, data curation and standardization, and applying data science and advanced analytic methods to generate robust scientific results. In addition, EPHI has prioritized and initiated GERD health research, surveillance, and emergency response actions and working on cross-border public health emergencies and other issues. The institute supports the ministry of health COVID-19 pandemic prevention and control decisions through generating strong and dynamic scientific results using predictive models, established online research data repository and tracking systems, analytic and visualization tools. The public health training Centre is responsible for short-term and collaborative long-term training to fill public health skill and knowledge priorities. Public health leadership and governance have also advanced in the institute to suffice both national and continental needs. Additionally, the institute has been conducting laboratory-based surveillance of Ant-Microbial-Resistance (AMR), HIV CBS, and Malaria elimination through establishing different sentinel sites and aggressively working to expand it with further scale-up in the following years. Guinea Worm and polio eradication surveillances have been also conducted. Additionally, the institute developed a cell culture-based rabies animal vaccine and transferred it to the National Veterinary Institute (NVI) for large-scale production. Currently, cell culture-based rabies vaccine development for human use is an ongoing process produce.

The institute has successfully managed and established 13 fully functional Regional Reference Laboratories during the last two strategic periods. Three of these have haven even been promoted to the extent of being Regional Public Health Institutes, and the rest are going to reshape as public health institutes. The institute, working with health facilities to give a quality-assured laboratory service through implementing the Laboratory Improvement Process towards Accreditation (SLIPTA) and ISO 17025/15189 accreditation process programs. And also, the institute launched and implemented Medical laboratory equipment placement initiatives to standardize and maintain the quality of services.

The Public Health Emergency Management (PHEM) aims to improve how the health system deal with existing and evolving disease endemics, Epidemics, Pandemics, and natural disasters of national and international concerns. PHEM is designed and structured to ensure early

detection of any public health threats, preparedness related to logistic and fund administration, and prompt response to and recovery from various public health emergencies. The institute recently time outshine in the disease outbreak investigate, prevent, detect, effectively respond to and control public health threats and Risks through activating Public Health Emergency Operation Center (PHEOC) such as COVID-19 pandemic, Cholera, Ebola, Dengue, Measles, Polio, Malaria, and Conflicts (IDP). The coronavirus disease 2019 (COVID-19) is currently an ongoing pandemic in Ethiopia, with the number of confirmed cases increasing daily.[5] To tackle the pandemic COVID 19, the institute has strengthened its preparedness and response efforts to combat it the set up a well-organized national preparedness and response coordination mechanism through an Emergency Operation Center. As of 31st March 2020, a synergistic approach COVID-19 humanitarian action has coordinated by the established Emergency Coordination Center, and national and regional task forces were established in all regions.

Therefore, this ten-year strategic planning and management-III (SPM-III) (2020/21-2029/30) to extend these remarkable achievements and support the health system aimed to achieve its mandate with aligning to the second health sector transformation plan. This SPM-III Plan consists of seven chapters aimed to succeed in five strategic objectives and twenty-four strategic directions.

1.3 Methods and materials for Planning Process

This SPM-III design and preparation follow the mixed (top-down and bottom-up) planning approach. logical Framework approach (LFA) is used to connect the big pictures of the strategy elements (mission, vision, values) to the operational elements (Strategic Objectives, Strategic Directions, major activities, and measures). Then, the operational elements are cascaded thematic area to respective departments[6]. The planning processes were carried out through establishing a multidisciplinary SPM-III preparation committee with a pre-approved Term of References (ToRs). During the preparation period, multiple brainstorming and consultative workshops were conducted. Alignment of the SPM-III with the HSTP-II and other relevant National and Global health security documents such as Joint External Evaluation, the National Action Plan for Health Security (NAPHS) was done.

[5] https://covid19.who.int/region/afro/country/et
[6] EU Integration Office Guide to the Logical Framework Approach, 2011

1.4 Document structure

The SPM-III plan design is framed into seven major chapters; Introduction, Situational Analysis, Strategy, Performance Measurement and Targets, Implementation Strategies, Monitoring and Evaluation Frameworks, and Implementation Cost and Resource Mapping. It follows the logical frame indicated here below.

CHAPTER TWO

2. SITUATION ANALYSIS

2.1 The SPM-II Performance Analysis

The Ethiopian Public Health Institute had planned and implemented its SPM-II (2015/16-2019/20), which was part of the Health Sector Transformation Plan (HSTP-I), which in turn aligned with the Second Growth and Transformation Plan (GTP-II). The plan comprised of 4 thematic areas: Research and Technology Transfer, Public Health Emergency Management, Quality Laboratory System, and Leadership and Management. In addition, it had 15 strategic objectives and 65 performance measures (indicators).

In this section, the major achievements of the four thematic areas for the previous five years are presented below.

2.1.1 Research and Technology Transfer Performance

The institute, during the strategic Plan implementation period (2015/16-2019/20), had generated and disseminated evidence-based information for decision-makers, policymakers, and different stakeholders on key priority communicable & non-communicable diseases, nutrition program evaluations, and the health system issues. The institute also has made continuous efforts to develop traditional to modern medicine and Vaccine production packages and products.

In the Second SPM, EPHI has planned to generate and disseminate 52 synthesized evidence-based information for decision-makers but achieved 42 (81%) of synthesized evidence-based information that has been generated and disseminated. The synthesized evidence information in the past five years are policy briefs: On Reducing stunting in Ethiopia from promise to impact, improving antenatal care services utilization in Ethiopia, improving the health workforce in remote & rural areas of Ethiopia, improving nutritional status through consumption of quality protein maize in Ethiopia, and improving modern contraception utilization in Ethiopia. Also, evidence briefs have been generated, on the burden of CVDs in Ethiopia, Burden of injuries in Ethiopia, Cholera deaths in Ethiopia, forecasting disease burden for Ethiopia's envisioning strategy, tracking progress in HIV/AIDS in Ethiopia across ages, Tracking progress in HIV/AIDS; Ethiopia vs regional countries. Furthermore, Issue briefs on a silent death: An urgent call to address newborn health care and sociocultural beliefs affecting institutional

delivery in three regions of Ethiopia. And rapid reviews, of the Prevention of neural tube defect in Ethiopia and the impact of palm oil on health, conducted. On other hand, In the past five years, most of the activities were addressed except the impact of information-based decision making from disseminating synthesized evidence.

As the main function, The Institute generated and disseminated 191 technical reports and 238 peer-reviewed journals. The key elements that were covered in the dissemination were disease and its determinants, Traditional and modern medical research, health system research, environmental, occupational health and their determinants, and reproductive and health system research. (*Figure 2.1*). The institute also, disseminated its research outputs by organized the third and fourth scientific congress in the presence of relevant stakeholders and the scientific communities. Besides this, through 29 thematic areas-based workshops that covered nutritional and food science, HIV, TB, Zoonotic diseases, Parasitology, Bacteriology, and health system ideas.

The Nutrition and Food Science department had conducted different activities like national micronutrient survey, National Nutrition Program Performance assessment (NNP), global tobacco assessment, Iron tablet distribution, vitamin A supplement coverage assessment, stunting (underweight) assessment, and Sekoto declaration program implementation as the main activity. And also, the department produced two complementary food production packages in the past five years.

The institute had undertaken nationally relevant health system surveys to evaluate the health sector program's impacts. In the past strategic years, the department goes through Service Availability and Readiness Assessment (SARA 2016, 2018), Ethiopia demography and health survey, min Ethiopia demography survey, Maternal and New-born Healthcare Program Evaluation, reproductive health researches (tens of ANC, Iron tablet Distribution, contraceptive prevalence trend, skilled delivery, Penta-3 vaccine delivery, vitamin A supplement, stunting/underweight), and Emergency Obstetric and Neonatal Care survey.

Additionally, different Studies and surveillances on drug and insecticide resistance, maternal death, environmental tracking, and climate-sensitive diseases (dengue fever, yellow fever, and rift valley fever) were conducted. However, the research and Evaluation face major challenges in lack of designing extra-large across thematic area projects, shortage of some priority research funds, shortage in caliber and

skilled researchers on the subject matter, and in the unavailability of project inputs such as chemical, reagents, and laboratory tools.

In the previous five years, four production packages were developed (Herbal-based broad-spectrum antimycotic formulation, Herbal-based broad-spectrum antimicrobial formulation, Herbal composition for controlling ectoparasites in ruminant, and Herbal based anti-Dermatophyte formulation), and their utility models were registered. Moreover, the institute worked with traditional medical practitioners and signed a Memorandum of understanding, and provides offices for the Ethiopian Traditional Medical practitioners' association and also, The National Traditional Medicine Research and Development Road Map was launched and has been implemented with collaborating stakeholders. However, the department faces many challenges, for example, lack of financial or budget, lack of interest or support from partners, failure to transfer production package to industry, lack of manufacturing facility, and lack of experienced experts.

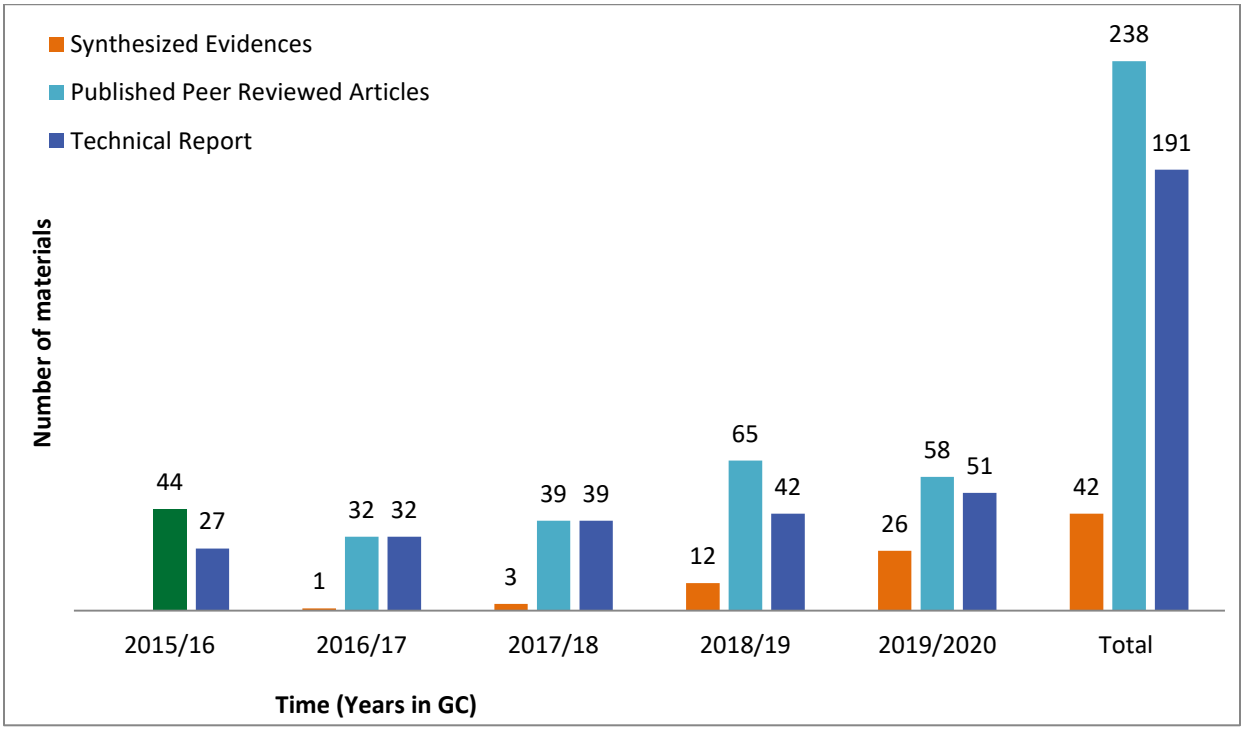


Figure 2.1: Research output last five years

One part of the research translation and technology transfer thematic area is technology Evaluation and scale-up for use. Over the five years, EPHI evaluates and scale-upped nine types of diagnostics technology for use in health facilities BD FACSPresto for CD4, Genotype MTBDR plus VER-2 LPA for MDR-

TB, Gene Xpert evaluation of extra-pulmonary TB diagnostic capacity, and malaria RDT lot testing; Malaria rapid test (RDT) kit: malaria RDT lot testing and evaluation of Gene Xpert for early infant viral load diagnostics (EID) were evaluated: RDT for malaria and Anti-rabies testing technology was expanded in two regions.

In the institute, Fermi type rabies vaccine is produced and distributed to prevent the disease. The production was (88%), (92%), (91%), (87%) and 85 % when we compared with the plan in 2014/15, 2015/16, 2016/17, 2018/19, and 2019/2020 fiscal years, respectively. Meanwhile, it was planned to replace the Fermi type with cell culture rabies vaccine since the end of the 2016/17 fiscal year. But still, it has not been implemented as planned. Hence, the production of Fermi has been actively going until it was replaced by cell culture.

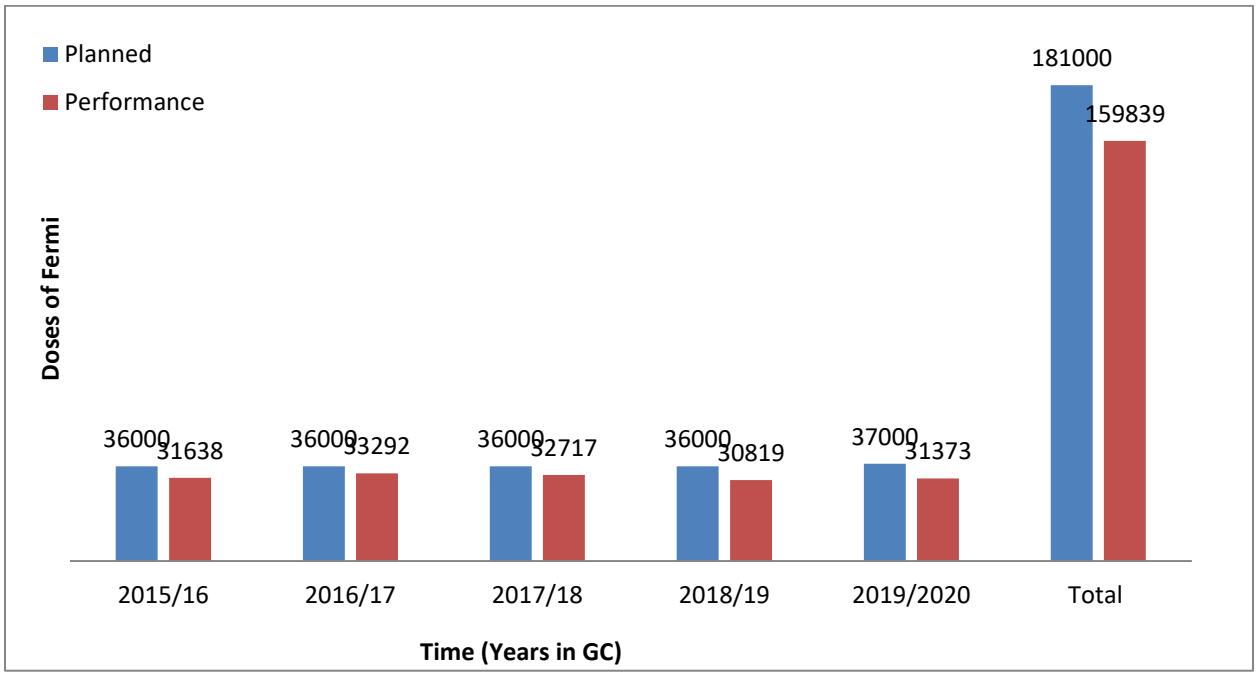


Figure 2.2: Fermi production and distribution

2.1.2 Public Health Emergency Management

There were different activities implemented within this thematic area to protect and avert public health emergencies(threats) like, alert communication, outbreak investigation with laboratory confirmation, provision of prompt response to the emerging and re-emerging public health emergencies on time, prevention and control activities up to recovery (psycho-social support). The institute achieved an average

cumulative performance of 89% for rumor verification, outbreak investigation, laboratory confirmation, and provision of prompt response to control epidemics with the expected level of mortality and to avert public health risks. However, according to midterm evaluation reports some of the output indicators were not properly documented to measure for instance indicators like public health risks averted, health facilities rehabilitated, epidemics controlled within the standard of mortality and Morbidity, and affected people provided rehabilitation can be mentioned. After the midterm evaluation, some outputs were documented in the year 2018/19 and 2019/20 the institute achieved 95% that means most of the public health risks were averted with minimal/lowest possible risk according to VRAM and EPRP.

Through this strategic period the communities were initiated to empower to produce their health and decision making in all matters, hence each member of the community behaves responsibly to carry out surveillance of reportable diseases (Community based surveillance) and any unusual events at the community level using the existing structures such as households, 1 to 5 HDAs, and development teams this is through the implementation of community-based surveillance at kebele level. The institute targeted to cover 80% of the country kebeles at the end of the 2nd SPM, however, through the SPM implementation period the program didn't start instead resource mobilization, assessment, and guideline preparation were carried out. In the year 2019/20 Pilot implementation was undertaken in the south nation, nationality People regional, Amhara, and Benishangul Gumuz Regions. When we compared with the plan 12% of the country's kebele were covered by community-based surveillance.

Provision of timely and effective information for all stakeholders allows preparing for the effective response or taking appropriate action to avoid or reduce risk throughout the country, to achieve these health facilities expected to deliver a complete and timely based weekly routine diseases' surveillance report through system level up to the institute and the institute establish bulletin based on the data collected for identifying and closely monitoring public health threats for predicting the risk/events of the community. So, the institute performs progressive achievement on regional report timeliness and health facilities report completeness, *i.e.,* 76%, 79%, 95%, and 98% in 2015/16, 2016/17, 2017/18, and 2018/19 of report fiscal years, respectively. Based on the received weekly diseases' reports, weekly epidemiological bulletin distribution was made for all stakeholders*, i.e*., 50%, 57%, 78%, and 69% in 2015/16, 2016/17, 2017/18, and 2018/2019 fiscal years, respectively.

According to EPHI 2nd SPM midterm evaluation finding on Electronic based reporting system (e-PHEM) for reporting health facility, the promised partner (TULANE) HMIS program that the program agreed upon to

establish the system was phased-out without any achievement of e-PHEM. However, nowadays the institute is on the way to implement with the collaboration of MoH the DHIS-2 electronic reporting system option to cover 4000 reporting health facilities and 1000 *Woredas* will be planned to cover.

Additionally, from 2015/16 up to 2017/18, there was no post epidemic/emergency assessment carried out after any public health intervention was provided. Meanwhile, since 2018/19 the institute carried out five post epidemic assessments /After Action reviews/ for Yellow Fever, Internal Displaced Population, Cholera, Meningitis, and Chikungunya. This was a good start when compared with the previous years, even if it was not a good achievement with the target stated

To strengthen capacity in recognizing, detecting, and responding to public health emergencies through conducting annual risk identification through VRAM and putting in place the necessary logistic and fund, equipping public health personnel and respondents with the necessary knowledge and tools, and educating the public on related measures to be taken to prevent and control the event during the pre-emergency phase and ensuring their monitoring and evaluation through Emergency Preparedness and Response plan. Based on the budgeted EPRP plan the institute achieved progressively near to the target throughout the physical years that were identified, potential epidemics with adequate Emergency Drug & Kits (EDKs) and other supplies of 30%, 35%, and 40%, and 70% in 2015/16, 2016/17, 2017/18 and 2018/19 years.

To put in place the effective and efficient program/project management system, throughout the 2nd SPM implementation period the institute carried out joint planning and performance evaluation with Regions and Public Health Institutes annually, then quarterly based performance monitoring rounds were undertaken as per the planned targets and joint supportive supervisions were conducted in two modalities *i.e.* integrated (multi-disciplined from all EPHI directorates) and separately (by each directorate) for each fiscal year in the regions up to health facility level to ensure that EPHI's programs/projected have been implemented as intended and/ according to the standards. In addition, PHEM and laboratory quality system forums have been established and conducted every quarter with stakeholders to review and take action on their respective performances. Furthermore, the institute carried out three programs/projects/SPM evaluation research in the implementation period.

The setting, developing, and updating of the institutional policies, procedures, and guidelines for all services provided were mandatory to improve efficiency and transparency of administration, financial and technical

procedures, and lawful decisions. Regarding this, the institute performed 90% in developing and updating procedures, manuals, and guidelines for different services provided.

2.1.3 Lesson learned from COVID-19 Pandemics

The COVID-19 pandemic is evolving rapidly, and its course is altering the landscape for all citizens of the world, including other Health interventions. However, an increasing body of evidence is guiding swift global action against the virus. The novel coronavirus, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), responsible for COVID-19, was identified in Wuhan, Hubei Province, China, in December 2019

2.1.4 Quality Laboratories Management System

To improve the quality of laboratory services in the country, different approaches have been designed and implemented over the last five years. In the last strategy period, the institute fully engaged to improve the status of laboratories through the stepwise laboratory improvement process towards accreditation (SLIPTA) program i.e., 3-5 stars for Hospitals and 1-5 stars for Health centers and accrediting laboratories at all tiers. The progress toward SLIPTA for hospitals and Regional laboratories is from 5.5 % to 12.9%. And also, Health Centers in SLIPTA which achieved a 1-5-star level in the last five years were 30.2%. However, the enrolments of regional laboratories /hospitals and Health centers were increased to 33.3% and 30% respectively from the total national-wide functional laboratories. Despite many challenges faced in the implementation process, tangible changes and improvements were recorded for laboratory services nationwide.

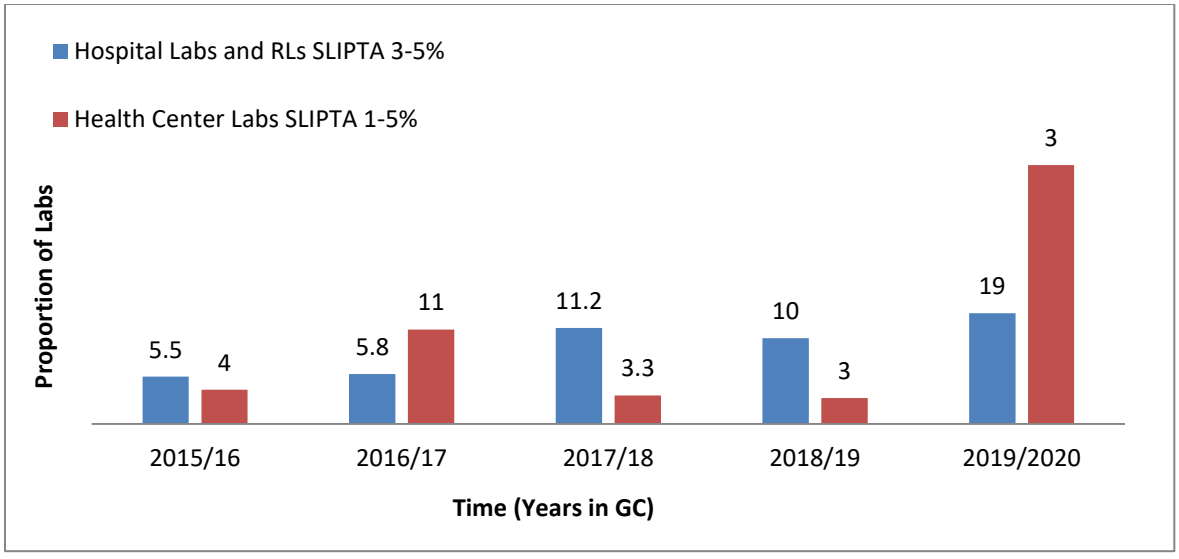


Figure 2.3: Laboratory improvement process towards accreditation

The accreditation program is the milestone to measure the quality management implementation and ensure the quality of services provided in the laboratory. EPHI design programs for accreditation in limited and full scope accreditation. Over the last five years, laboratories achieved limited and full scope accreditation was 19 and 2, respectively. In Addition, Customer satisfaction was also measured and 78.6% of customers said that they were satisfied with the service received from the laboratories. During the implementation of this SLPTA and accreditation program, the institute faces challenges in continuous quality improvement, maintenance, weak follow-up, monitoring, mentorship, and feedback, poor documentation, limitation in ownership to handle quality assurance initiatives in facilities, and unsuitable laboratory infrastructure.

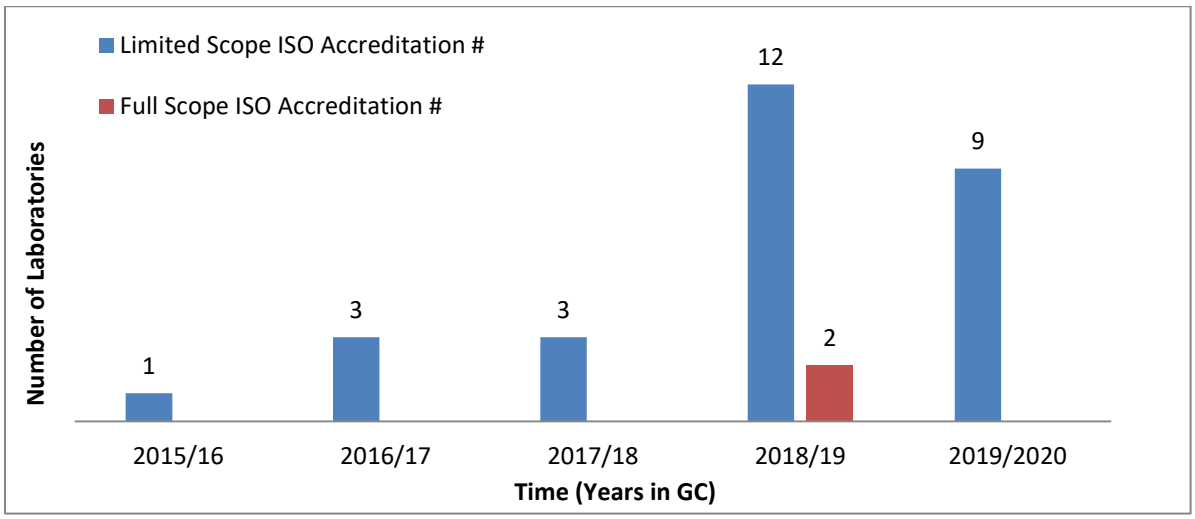


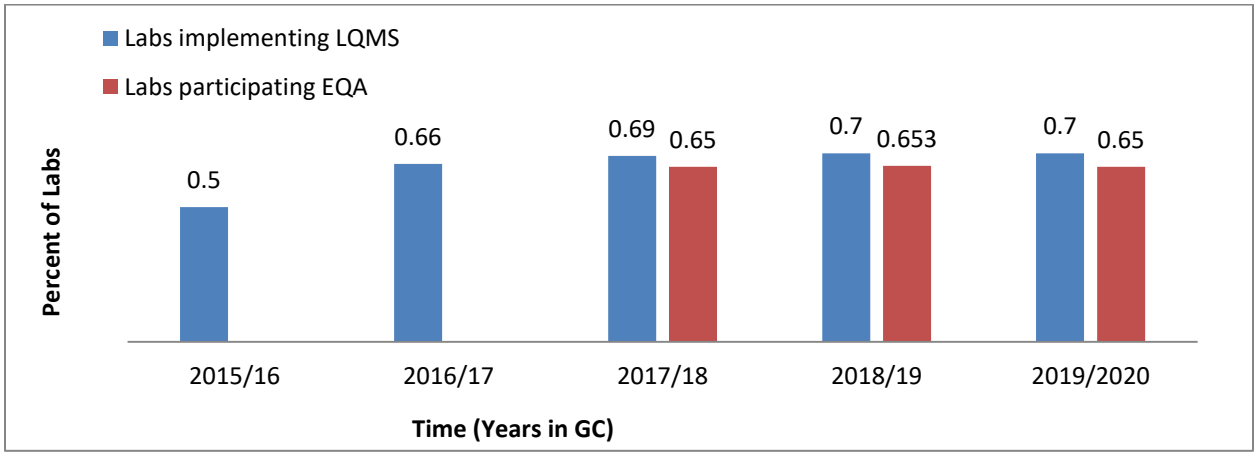
Figure 2.4: Laboratories ISO Accreditation

Laboratory equipment calibration is too important to support in produce quality results from the laboratories. There is no established laboratory calibration center used for laboratory equipment calibration. The activity is outsourced and done by the national meteorological institute. Due to this limiting factor laboratory equipment calibration is planned only for ISO-accredited laboratories. Even though there is a limited capacity of NMIE in the calibration of centrifuge and pipette, almost all laboratories included in ISO accreditation gate annual calibration for the past strategic years as planned.

To enhance the laboratory quality management system (LQMS) the institute implements 12 elements and clearly shows the progress from 50% at the beginning of the strategic period 2015/16 but now it progresses to 70% of laboratories that implemented basic laboratory quality management systems.

All tiers of facility laboratories participate in one of External Quality Assessment i.e., Coverage is 65.3 % of the total functional facilities. An innovative EQA sample and feedback transportation was established through postal services. Currently, 165 laboratories have participated in one or more EQA programs including one world accuracy, CDC-Atlanta, and NICD Programs using PT panel samples for Bacterial, Viral, and other laboratory testing's methods through the country in addition to that EPHI national EQA program enrolled around 265 laboratories on TB GeneXpert, Viral load, EID, HIV and Malaria. Overall EQA participation of health laboratories using either of PT, on-site supportive supervision, and blind rechecking around 2950 laboratories was enrolled.

However, during the strategy period, there was a challenge in establishing functional EQA rechecking laboratories with database, failure to establish standard EQA PT sample preparation center, and also failure to organize laboratories with electronic laboratory information systems as plan were major limitations in strengthening EQA and LQMS in the country.



NB:*No recorded data

Figure 2.5: Performance of laboratories in quality management system implementation

Moreover, EPHI provided mentorship on biosafety and biosecurity for 13 regional laboratories (Adama, Addis Ababa, Harari, DireDawa, Hawassa, Tigray, Bahir Dar, Dessie, Gambela, Benishangul Gumz, Nekemit, Somali, and Afar Regional Laboratories) and eight EPHI's National reference laboratories

(EPHI's Reference Laboratory for TB, Influenza, Polio, Clinical chemistry Laboratory, Parasitology, Clinical Bacteriology Laboratory, Haematology, and HIV Molecular). The major mentorship activities were focused on Biosafety practice, Biohazard and chemical spill management, chemical safety, risk assessment, safety inspection, and audit. In addition, as part of the Biosecurity program, EPHI conducted a baseline assessment to assess the status of Biosafety and Biosecurity practices at 10 Referral hospital laboratories nationwide that associated using a checklist. Following the assessment, laboratories prepared an action plan to address identified gaps to improve the Biosafety and Biosecurity in their respective laboratories. As part of the technical support, EPHI provided mentorship support and training, as a result, the majority of the laboratories have made good progress on the Biosafety and Biosecurity system.

Based on the gaps identified by Joint external evaluation (JEE), a draft proclamation of Ethiopian's Selected Hazardous Pathogens and Toxin is developed. And also, three consultative workshops were conducted with stakeholders on the draft proclamation. In addition, the list of Ethiopian's Selected Hazardous Pathogens and Toxin (ESHPT) is prepared. Moreover, as part of BSL 3 laboratory construction project to enhance biosafety and biosecurity system, Safeguard documents such as Environmental and Social Impact Assessment (ESIA) for BSL 3 National Reference Laboratory developed, Environmental and Social Management Framework (ESMF) for BSL2 laboratories, Infection Control and Waste Management Plan (ICWMP) (BSL3) National Reference Laboratory were prepared. For the improvement of the waste disposal and sewerage system at EPHI, a renovation was made, and an additional incinerator was built.

One of the main activities in the second strategy plan was to establish a laboratory equipment maintenance workshop at 13 regional laboratories. Consequently, eleven medical equipment maintenance workshops in Adama, Dire Dawa, Harar, Axum, Debre Brihan, Semera, Yirgalem, Nekemte, Assosa, Gambela, and Jijiga were constructed and, some basic maintenance tools were distributed to sites that reported a lack of the basic maintenance tools to EPHI. According to 2018 assessment on 10 medical equipment workshops namely (Adama, Diredewa, Harar, Axum, Debre Brihan, Semera, Yirgalem, Nekemte, Assosa, and Gambela) Shows that the maintenance team is mostly engaged in the maintenance of other medical equipment rather than laboratory equipment. The total corrective maintenance done and captured by the EPHI maintenance database from 09/06/2015 to 9/01/2020 equals 1347. Almost 80 % of the requests are fixed in time, but about 20 % of the requests are not solved in time due to spare parts and logistic problems.

The health care system in Ethiopia relies upon a tiered network of laboratories that include national and regional reference laboratories, hospitals, and health center laboratories with an increasing degree of specialized testing capacity towards the apex.

The national reference laboratories have served as the main centers for referral and backup testing services at EPHI. EPHI was effective (78.4%) in networking laboratories for referral testing services, i.e., 4171 laboratories, out of 5318 government and private laboratories, have been networked and mapped for referral testing services in the country. The Institute was also effective in capacitating the national clinical and public health reference laboratories and also 80% of health facilities for detection and characterization of epidemic-prone disease. And for another disease of public health importance, the institute had performed referral and backup testing services for more than 495,706 tests in the past five fiscal years mainly on nutrition, clinical bacteriology & mycology, clinical chemistry, HIV, TB, rabies, microbiology, and physio-chemical analysis issues to serve the community.

There was no attention to do test menu standard for health facilities (from the point of quality laboratory testing services) and follow up their implementation as per established standard, and missing to capture data and follow up for test service provider for national, regional and international referral network system at all times for epidemic-prone and another disease of public health importance were the major limitations. Shortage of logistic supplies and trained laboratory professional's attrition and cold chain problems during postal transportation of the samples were also the major challenges for this objective.

2.1.5 Leadership, Management, and Governance.

The total estimated cost requirements for the execution of the planned activities to be implemented over the five-year strategic plan period from 2015/16-2019/20 was USD 9,283,700,000, and from this total cost USD, 5,617,754,000 was mapped budget. Even though EPHI managed to mobilize 1,799,976,599.00 USD form total mobilized resource efficiently utilized budget was 1,472,124,471.93 $USD (82%). The following Figure 2.1.4.2 shows the institute mapped and mobilized financial resources in each year from the 2015/16-2019/20 strategic plan implementation period.

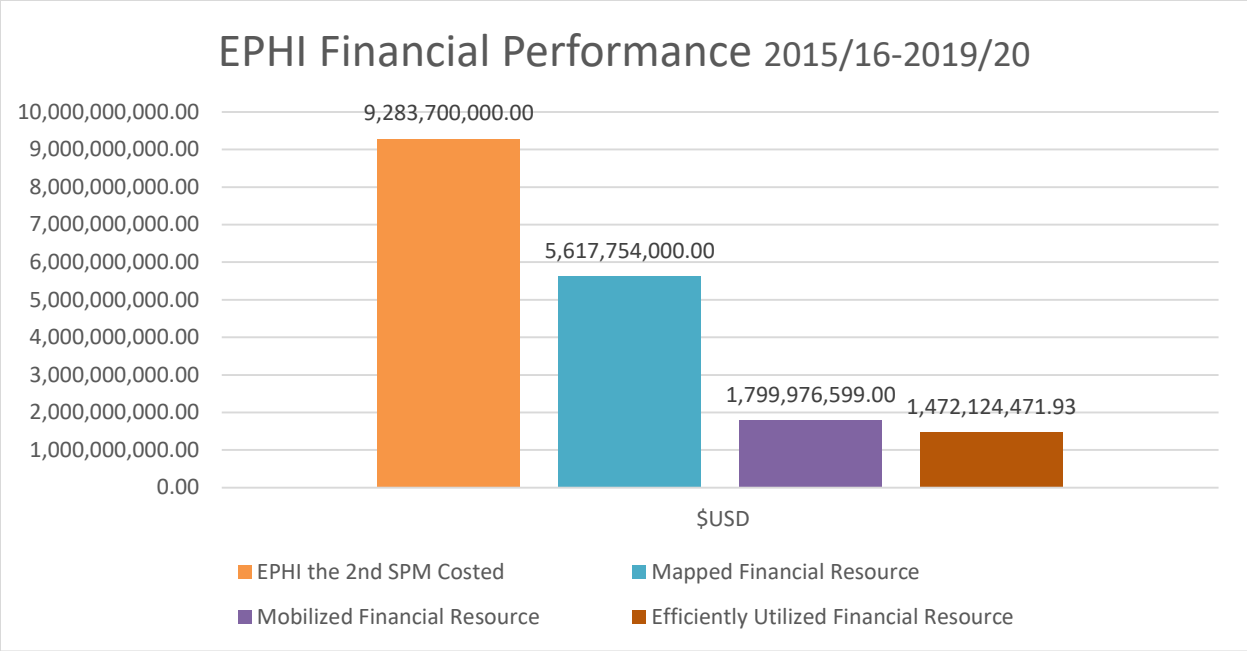


Figure 2.6 Financial resource performances

The main challenge was the donor dependence budgeting system that leads to poor resource allocation for some national priority research agendas, public Health emergency preparedness, and other institutional infrastructure investment.

When we see the proportion of the mobilized financial resources from the government treasury was 31% and from donors or partners was 69% of the total managed and mobilized financial resources. Due to partners, support attributes more likely to finance programs and projects in key areas, but the Government treasure is used for salary and office inputs rather than to run programs and projects. This shows, in the future the government budget must be increased to support and ensure the sustainability of the execution of the core functions.

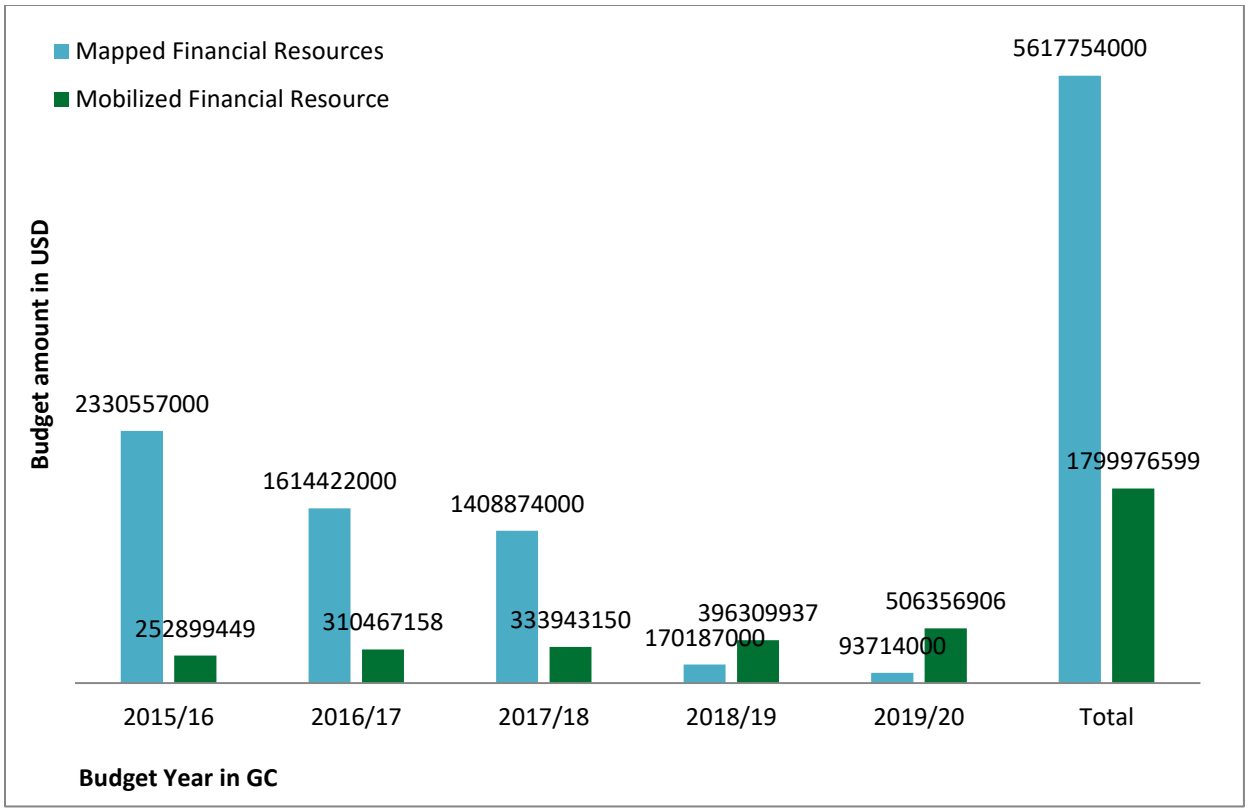


Figure 2.7: mapped and mobilized financial resource 2015/16-2019/20

During the implementation period, the other main thing was the donor dependence budgeting system leads to poor resource allocation for some national priority research agendas, public Health emergency preparedness, and other institutional infrastructure investment. When we see the proportion of the mobilized financial resources from the government treasury were 31% and from donors or partners were 69% of the total managed and mobilized financial resources. Due to partners, support attributes more likely to finance programs and projects in key areas, but the Government treasure is used for salary and office inputs rather than to run programs and projects. It will need in the future to increase the government budget support to ensure the sustainability of the execution of the core function of the Institute.

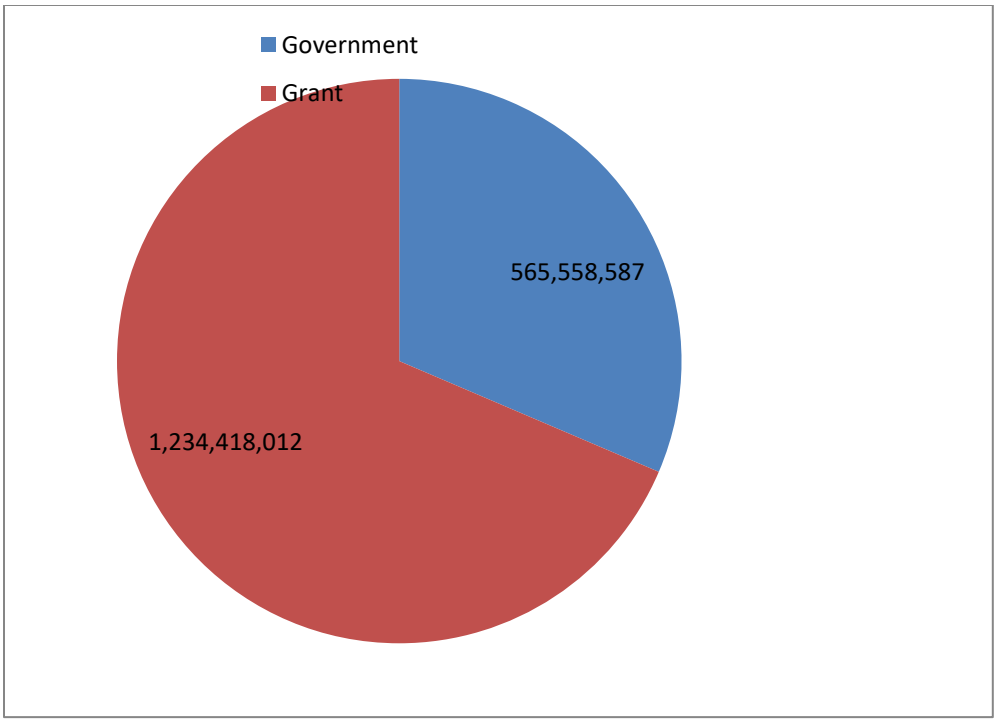


Figure 2.8: Financial Resource source Share

Furthermore, the utilization trend increases in the 2017/18 Ethiopian fiscal year institute to improve procurement of logistics and supplies, and also for tracking/inspecting projects and programs. Additionally, Procurement lead time was declining from 290 days to 180 days lead time (lead time includes from bid announcement day for supplies or logistic arrival date). However there some limitation too in the process like lack of a coordinated procurement system, preform procurement dominantly used than planned or (open-bid procurement type), interruption in supplies, lack of trained procurement officers (for international-bid) can be mentioned

The institute strengthens the workforce through new staff recruitment, through developing the HDA building system i.e. Since 2015/16 best practices were synthesized & scaled up, adapted, and implemented reform tools (BSC, BPR, Kaizen… etc.), Incentive mechanisms, and through training. The institute's cumulative staff availability has been increased from 571 at the beginning of the strategic year to 1032 at the end including technical assistance or contract staff. However, the workforce faces less staff satisfaction, low salary, and benefit incentives, and turnover of key professional staff as a challenge.

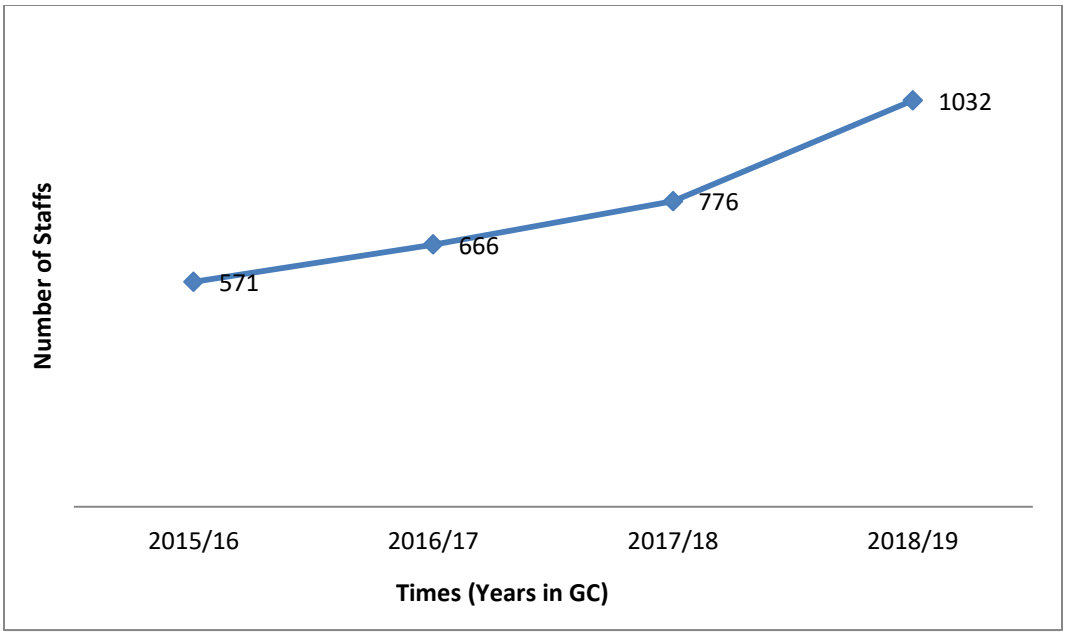


Figure 2.9: EPHI Cumulative available Staff status

The implementation of HAD was assessed and modified each year. During the beginning of the strategic period, all the institute teams undertake everyday meetings within the team and weekly based on the transformation meeting and bimonthly on the directorate forum. However, due to institutional working behavior, it changes from the start of the year 2018/19 the HDA implementation, modification to weekly based and the transformation forum and the directorate forum to bi-monthly and monthly respectively. The performance of workforces achieving the best performance was 17.12%, 26%, and 90% in the year 2016/17, 2017/18, 2018/19 respectively. However, in the last year of the strategic plan, the implementation modality changed to enhance the performance of the best workforces.

As a well-known fact, to have a high-quality human resource for the institute is by availing human resources for the execution of planned activities through recruitment, promotion, and applying different retention schemes; Skill development through short-term and long-term training based on identifying training needs. The institute realized the establishment and operationalization of the National Public Health Training Center that different national and international training and conferences were organized. Human resource capacity building was made to the institute employees through short term training (STT) in different areas which were above the target i.e., 154, 219, 112,155, and 220 in 2015/16, 2016/17, 2017/18 2018/19 and 2019/2020 years respectively. However, the main weakness in the short-term training was not a modular system and the training has to be based on the trainer's needs and

does not bond the trainee gap, there is a gap in the standards with professional trainers and standard training period.

Training of trainers on Biosafety and Biosafety was provided for 93 safety officers from 13 regional laboratories, EPHI, 12 selected hospitals, and National Veterinary Institute (NVI). In addition, basic Biosafety and Biosafety training were provided to 64 EPHI laboratory professionals. Besides, 192 laboratory aids, cleaners, and other staff on laboratory specimens and waste handling, and fire safety. Training of trainer on Chemical Handling and Disposal was also provided in collaboration with US EPA team of 16 professionals selected from Regional Laboratories, Fire and emergency management, Ministry of Environmental and forest, Ministry of Livestock and Fishery (NADHIC), EPHI, Universities, Revenue and Customs Authority, and Federal Public Property Procurement and Disposal Agency. In addition, basic Chemical Handling and Disposal training was provided in collaboration with US EPA team of 30 participants selected from EPHI, Regional Laboratories, Fire and emergency management, Ministry of Environmental and forest, Ministry of Livestock and Fishery (NADHIC), Universities, Revenue and Customs Authority, Federal Public Property Procurement and Disposal Agency.

On the contrary, long-term training in which only 28 staffs had graduated in post-graduation program (23 Masters and 5 Ph.D. Degree graduates) from those who were enrolled *i.e.,* 44, 12, 10, and 68 were employees trained with the long term in the year 2015/16, 2016/17, 2017/18 and 2018/19 respectively. Long stay at universities without graduating, less staff satisfaction and Not being willing to return when they graduated were the major challenges.

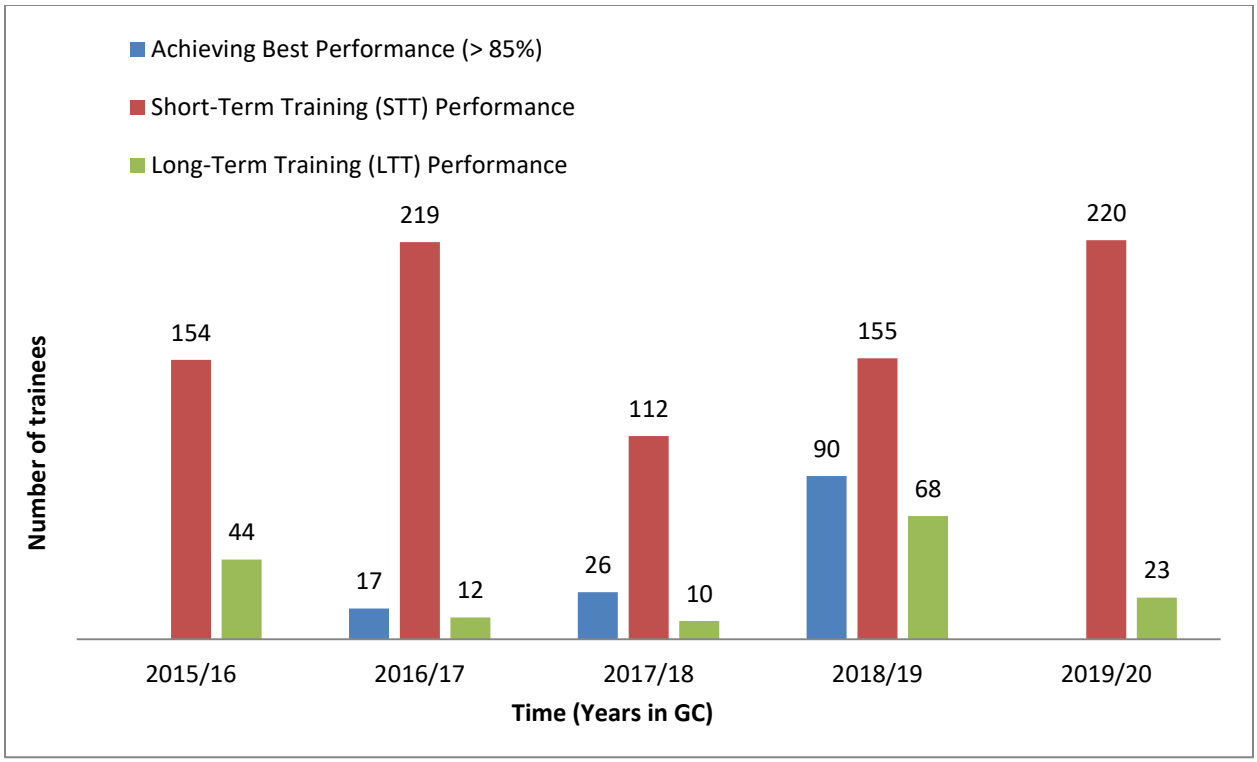


Figure 2.10: Workforce Development performance

According to the 2nd SPM at the end of the strategic period the institute staff satisfaction level was progressively expected to reach 95%, but, only in 2017/18 a survey conducted and a satisfaction level was 47%. Finding from the midterm evaluation showed that the institute low salary payment and the incentive scheme is some of the contributing factors for the satisfactory result. It seems the outcome due to poor staff satisfaction the attrition rate was higher compared to the target except in the year 2015/16. Since 2016/17 the attrition rate became progressively improved but has not achieved the target.

EPHI has been made a significant change in the Infrastructure construction of the Institute's premises and technical facilities to enhance institutional capacities. The institute strengthens the vaccine diagnostic and production laboratory, the traditional medicine research laboratory, national entomology laboratory, and rabies diagnostic laboratory and Also, the institute also establish a fully-equipped public health training center, one mobile biosafety level three (BSL 3) laboratory has been procured and made fully functional and other four (Vaccine, Traditional and Modern medicine product display and the other two were the expansion of nutrition and main building) physical construction was constructed. The institute planned to establish a state-of-art reference laboratory with Biosafety special level-3 laboratory

(BSL-3) and research center, the design and projects have been done, and 150 million USD funds were mobilized to construct one hub/ warehouse and it has 5 floors/ office building to enhance institutional capacities.

The institute runs Eight systems of automation (human resource, procurement system, IFMIS, data collection system, and inventory…etc.). And also, a national data management center (NDMC) for health has been established to enhance archiving health data and generate evidence for decision-makers at the national level.

The Institute also established and implemented PHEM and quality laboratory system forums with regions and other stakeholders for effective, efficient, and organized implementation of targets. Whereas very effective in maintaining (95%) the existing national/regional/international collaborations and partnerships in the past strategy period. Concerning collaboration and partnership, as key informants argued, there was a limitation of clear understanding in partners' role and responsibility which was believed to hinder the effectiveness of collaborative efforts. There was also a limitation in clearly defined responsibility and accountability between EPHI and regional health bureaus/laboratories/public health institutes. And also, in coordinating health research nationally as per its given mandate finally in the past strategic plan period There was no organized and EPHI initiation collaboration and partnership rather most of them came from outside.

2.1.6 National Data Management Center (NDMC) for health

Since 2017, NDMC has been playing four fundamental roles 1) data repository and governance, 2) data analytics and modeling, and visualization, 3) burden of disease estimation, and 4) generating evidence and translating to decisions. It has created a national online data repository and tracking system having digital data catalog, prospective data archiving, databases with metadata, data analytic/modeling and visualization platforms, automated data sharing system and retrospective data submission platforms, creating data interoperability and integration systems, tracking ongoing surveys/researches and tracking publications systems. The database is a national health data hub having data from EPHI, IHME, NGO, DHIS2, CSA, Research institutes, metrology, traffic data, universities and it is advanced secured, expandable with redundant data storage and backup system. The Center has archived more than 200 datasets and shared 27 datasets in 2013. The Center has developed data sharing and management guidelines, data security protocol, national data sharing, and access directive (needs approval). In consultation with MOH and Regional Health, the Center has identified prioritized areas having evidence

gaps. The Center has produced several publications on scientific peer-reviewed journals, evidence briefs, Technical reports, developing and updating roadmaps and working guidelines. For example, three highly policy-relevant scientific efforts of Center were 1) COVID 19 national and subnational analytic platforms 1) Public health Impact of GERD in East and Nile Basin Africa countries and 3) subnational burden of disease analysis. The Center has established collaboration with 10 universities owned Health and Demographic Surveillance Sites, University of Gondar and Addis Ababa University data science, Africa CDC for continental data hub function, IHME on the national and subnational burden of disease and data science capacity building, Bill and Melinda Gates Foundation, National Public Health Institutes in Africa, ABReN and GBD Collaborators in Ethiopia. The Center has initiated fellowship and internship on child health, scientific writing, economic evaluation. The center has also initiated short-term standard training on Open HDS longitudinal data system, GBD Africa, GBD subnational, Basic data science, advanced data science, FAIR data principle. The Center did advocacy and promotion on data exchange and use.

2.2 SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis

Among the various situational analysis tools, SWOT analysis was applied to properly identify and define all the factors that influence the working atmosphere regarding the implementation of SPM-II that includes the public health emergency management, research, and technology transfer, laboratories capacity building, and public health leadership, which are broadly divided into internal factors (Strengths and Weaknesses) and external factors (Opportunities and Threats).

The outputs of SWOT analysis, indicated in the table below, are used to inform the development of SPM-III as enablers and pains for the improvement of the intended performances.

Table 2.1: SWOT (Strengths, Weaknesses, Opportunities, and Threats) Analysis:

Enablers	Pains
Strengths	**Weakness**
- Availability of different reform initiatives to enhance efficiency (BSC, Kaizen) - Provision of improved quality health care services - Long years of experience in research, public health emergency management and laboratory quality system strengthening - Existence of Legal framework for surveillance, survey, and research - Availability of guidelines and strategies such as traditional medicine and vaccine and diagnostics development road maps, NNP, NCD, MNH, NTD and AMR mitigations road maps; referral system guidelines, and others - The systematic use of research evidence for program improvements and use as input for the design and support public health policy - Availability of accredited Institutional Scientific and Ethical Review Board and standard operational procedures for research ethical review	- Limited collaboration and poor integration efforts, for joint planning with stakeholders Limitation in prior consultation of key stakeholders and assessments for planning - Limitation in National Public Health Priority agendas - Poor procurement system and lack of appropriate procurement directives for research inputs such as research reagents, chemicals, instruments, equipment and drugs - Lack of clinical trial implementations on traditional medicines and vaccines with proven safety and efficacy - Lack of public-private partnerships to engage in product development of medicinal plants, technology products and laboratory services. - Low motivational scheme: benefit package and salary scales compared to other similar organizations. - Weak multi-sectoral linkage, coordination and collaboration in public Health Emergency Management, research, and laboratory system.

Enablers	Pains
Strengths	**Weakness**
- Evaluation of the quality and performance of technology products to improve health care delivery. - Existence of a national laboratory system with tiered laboratory network and defined functions. - Established a system for specimen referral linkages and testing services - Presence of nationally accredited research and referral laboratories … - Improved laboratory infrastructure at National and Regional levels - Establishment of national and regional EOCs - Establishment of National training center - Existence research findings dissemination platforms (journal, technical report, validation and launching workshops, health congress, EPHI website, etc). - Incorporation of new diseases and events into the surveillance system /i.e. HIV, Fistula, Bio-hazard and etc. - Establishment of PHEM and laboratory systems & structures as well as research collaboration initiative among regions - Establishment of national data management & knowledge translation system for proper	- Weak public health emergency preparedness according to EPRP. - Lack of accountability at all levels - Not fully functional and standardized event, community and laboratory-based surveillance - Lack of integrating surveillance training part in HEWs Refresher Training Package - Lack of efficient communication and monitoring system within the lab tier system, including a lab-clinic interface - Lack of defined and standardized core functions of Regional labs/Public health institutes - Limited capacity of laboratories to provide a wide range of diagnostic and test services; like detection of emerging and re-emerging diseases - Lack of standardization of laboratory equipment, supply chain, and testing services - Absence of high biosafety level laboratory services - Over ambitious plan in consideration of transformation agenda - Weak internal revenue generation and utilization - Lack of timely utilization of external generated resources - Gaps in proposal writing and winning of competitive grants and projects.

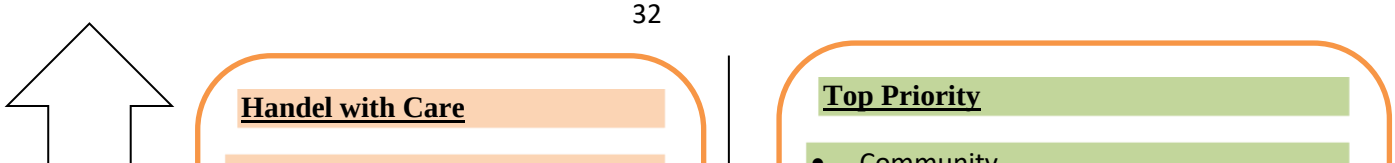
Enablers	Pains
Opportunities	**Threats**
- Government commitment to support the public health agenda - Existence of support, collaborations and international initiatives from development partners - Growing private health sector and higher education for collaboration and capacity building - Existence of health and health-related Professional associations for development efforts in the health system - Availability of mechanism to organize community engagement - Rich in biological diversity and diversified untapped novel indigenous knowledge of traditional medicine.	- The high attrition rate of skilled and experienced staffs - Declining trends of financial and resource support from donors/partners for research, intervention, and programs - Loss of knowledgeable elder traditional healers without knowledge transfer or documentation of the practices of traditional medicine. - Competing for local and international priorities - As a result of global warming, climate change and increasing trends in environmental pollutions and health hazards, , biodiversity (endemic flora and fauna, etc.) threatened and endangered, The Occurrence of disease epidemics (emerging and re-emerging) and man-made and natural disasters Inadequate nationwide infrastructure to prevent public health risks (Road, Latrine coverage, Water supply).

achieving the institutional mandates. The Institute has sorted out nineteen potential stakeholders (collaborators, community, customers, and contributors) that have significant roles in their engagements. Analysis has been done on those stakeholders' behaviors, desire, contribution, resistance, and institutional response with their influence level in the implementation of the 10 years SPM-III. (Annex 1.1)

2.3.1 Stakeholders Power /Influence Interest Matrix

The stakeholders are not all equally imperative to implement its programs and projects. The listed stakeholders' power is prioritized based on an influence level with the dimension of decision making, resource allocation, re-structuring regarding the institute, and interest level regarding EPHIs output services and product users.

Thus stakeholders are categorized into four groups based on their influence and interest in the institute. 'Top priority stakeholders' are those who have a significant impact on the accomplishment of the mission and vision of the institute. These stakeholders have high influence and high interest in the existence of the institute. The next stakeholders are those having high influence with low interest in the institute engagement. These are categorized under 'Handle with Care listed stakeholders**'.** Hence, these stakeholders require big attention to the decision and service of the Institute and difficult for the Institutional survival because of their influences. So, the Institute should carefully include its interest in its mission accomplishment. Stakeholders categorized as 'Need help to participate' are institutional collaborators that have a helpful contribution for mutual benefits in achieving the institute's mission. Stakeholders under the 'Low priority category' are those having importance not much of the previous three groups to be engaged in the accomplishment of the institutional mandate for their mutual respect.



High

Low

Low **High**

Figure 2.11: Stakeholders Power /Influence Interest Matrix

CHAPTER THREE

3. MISSION VISION OBJECTIVES AND STRATEGIC DIRECTIONS

3.1 Mission

Improve the general public health through undertaking research on priority health and nutrition issues for evidence-based information utilization; formulation of production package and technology transfer; promote effective public health risk and emergency management and ensure the provision of essential health care service during an emergency; build sustainable and resilient laboratory system and quality laboratory services; and enhance digital health and health information systems and public health leadership, management, and governance for best public health interventions.

3.2 Vision

To be a Centre of excellence in Public Health in Africa.

3.3 Core Values

- **Continuous learning and improvement**: EPHI stands for continuous and infinite improvement in learning new skills and acquiring knowledge for serving the general public with deep-rooted and dynamics knowledge and prestige to stretch performance or competence on the achievement.
- **Creativity and innovation:** New ideas, systems, digitalization, and using robust health technology are key and routine businesses to promote and advance necessary institutional transformation as well as improve performances by motivating intrinsically[7].
- **Evidence-based Public Health**: This value is the central reflection of EPHI for a collaborative, systematic process of connecting data, science, stakeholders, partners, policy makers, effective strategies and combining the best available research evidence, to address

[7]Locke, R., Castrucci, B. C., Gambatese, M., Sellers, K., & Fraser, M. (2019). Unleashing the Creativity and Innovation of Our Greatest Resource-The Governmental Public Health Workforce. *Journal of public health management and practice : JPHMP*, *25 Suppl 2, Public Health Workforce Interests and Needs Survey 2017*(2 Suppl), S96–S102. https://doi.org/10.1097/PHH.0000000000000973

community preferences through evidence-based program planning, implementation, response and evaluation in improving public health generally[8].

- **Human-Centred:** EPHI strives to use contemporary human resource development, retention, and skill updating to be in the position of highly skilled professionals in the area of achieving its mandates. This value enables the institute to utilize tailor-made solutions and available research development to address complex public health agenda to enhance performances[9] and it is result-focused rather than process.
- **Pro-activeness and Responsiveness**: The prediction, action, and learning from research practices public health emergency risks and having resilient laboratory quality system with the highly-competent human resource are the key qualities of EPHI for timely risk mitigation and citizen protection through engaging all relevant stakeholders and adopting to existing and future health needs.
- **Professionalism:** Ethical choices, values, and professional practices implicit in public health decisions; to consider the effect of choices on community stewardship, equity, social justice, and accountability.
- **Rule of Law:** rule of law is the inherent value of the institute to serve the public at the personal and institutional level. Adhering to the rule of law in its holistic practices is the central demonstrator of the institute.
- **Transparency and Accountability:**

  Availability of governing documents and policies relevant to its governance to stakeholders, declaring all reports to citizens, giving an opportunity to claim any reservations on service provision, and taking accountability for any action of the institute is the central motto.

3.4 Principles

- **Equity:** Fairness, indiscrimination of service provision, respect, and care are key components of ensuring equity without differences in public health among population groups defined socially, economically, demographically, or geographically.

[8]https://cdn.ymaws.com/www.cste.org/resource/resmgr/CD_Toolkit/Chapter_5.pdf

[9]Leung, C.L., Naert, M., Andama, B. *et al.* Human-centered design as a guide to intervention planning for non-communicable diseases: the BIGPIC study from Western Kenya. *BMC Health Serv Res* **20,** 415 (2020). https://doi.org/10.1186/s12913-020-05199-1

- **Participatory**: Active involvement and engagement of individuals, communities, strategic partners, and the general public in the design, planning, implementation, and working for mutual results are key actions to ensure participation.
- **Solidarity:** EPHI works for this principle to nurture a shared vision in the filling, emotion, and work for change with compassion for achieving the institute's strategic mandates. It allows creating synergy with strong solidarity among individuals with a common interest; mutual support within a group.
- **Decentralization:** It is one of the principles of EPHI to ensure shared decision-making and responsibility intended to promote accountability and participation to boost the responsiveness of the public health function to the local demand for services.
- **All-hazard approach:** Different types of hazards are mostly associated with similar risks to health, which can be effectively and efficiently addressed by designing a system with 'common capacities, supplemented by risk-specific capacities based on multiple hazard principles. EPHI proactively engaged in addressing all health security threats including emerging and re-emerging hazards occurring at all levels (nationally, regionally, and globally) caused by biological, non-biological due to chemical agents or radio-nuclear materials.

3.5 Strategic Objectives

Strategic Objectives are courses of action it has a high level (Impact & Outcome) result statements that indicate visualizing the institute's Vision or show what the institute needs to be achieved, and it will be measured through target stated under performance measurement indicators. The Strategic Objectives are the following:

SO-1: Enhance Research, evidence synthesis, and production package innovation

SO-2: Enhance digital health data science, analytics, and information system

SO-3: Build a Resilient Public Health Emergency Management for Strong National Health Security

SO-4: Enhance building sustainable and resilient laboratory system for High-Quality Laboratory Services.

SO-5: Enhance Core Public Health Capacities for Proactive Governance.

3.5.1 Strategic Objectives Descriptions

SO-1: Enhance Research, Evidence Synthesis, and Production Package Innovation.

SR-1: Scientific evidence-based information/knowledge that will be translated into policies, programs, public education & knowledge, product packages, and products.

Description:

The need for research-based knowledge to inform health policy and practice is a critical national public health concern. Knowledge generated through health research has the potential to improve health outcomes, promote service delivery and strengthen health systems functioning. However, there is inconsistency to translate evidence into health policy and practice. The main problems for limited evidence-informed health policy in Ethiopia are, evidence generation has limitations to address policy demand, existing evidence is not consistently and properly analyzed or synthesized for policy purposes [10]. Despite burgeoning interest in this know-do gap, the translation process remains slow, haphazard, and unpredictable, resulting in reduced health gains vis-á-vis societies' investment in research Making better choices to come up with effective outcomes among alternatives requires the best available evidence. Therefore, this strategic objective is designed to address these challenges.

Evidence generation for health is a systematic process of study regarding a particular Health and health-related issues or a problem using well-known scientific methods to describe, explain, predict, and control the observed phenomenon for the advancement of knowledge to solve problems and improve the health status of people. The ultimate goal of the evidence generation through the research process and evidence syntheses will help improve the well-

[10]HibretTilahun, Jessica Flannery & Peter Berman. 2015. Review of Local and Global Practices on Evidence-Informed Health Policy: Recommendations for Ethiopia. Harvard T.H. Chan School of Public Health: Boston, Massachusetts.

being of the population in an equitable approach or to use this knowledge to propose interventions and policies, based on scientific evidence results.

Evidence generation pass through many steps, including prioritizing research agendas (i.e. gap identification, formulate scientific procedures (writing research proposals), and mobilize resources), conduct the actual researches or surveillances (data collection, data analysis, and technical report writing), evidence syntheses in the form of the guideline, evidence brief and systematic review,(prepared using different peer-reviewed journal publications or by triangulating different secondary data settings), disseminate the evidence (through stakeholder workshop, scientific newsletters, documentary broadcasting, and published in peer-reviewed journals), and finally, translate it to Public policies, programs/initiatives, academic education, and public knowledge. The evidence generation process seeks technical capacitated human capital, infrastructure, financial resource, and digital technology to transform the evidence generation. Thus, to enhance this recruit new technology products, processes, applications, materials, or services besides exploiting the existing system through sharing of skills, knowledge, technologies, methods of manufacturing samples, and facilities among industries, universities, government, and other relevant institutions.

Evidence generated on diseases epidemiology, clinical & biomedical research, prevention, control, treatment, and diagnosis of key- communicable and non-communicable diseases, nutrition issues, traditional medicine, and health systems will be synthesized systematically and shared to relevant stakeholders to inform policy and program options through Information promotion using appropriate media. This information will also be used to provide the public a thorough and updated information about the outcome which will ensure proactive prevention of health risks and improve the health status of people

Additionally, this Strategic Objective includes technology innovation, local drug, and vaccine development that may progress to products that could potentially be linked to industries. Production packages formulation has its process, and adaptation starts from basic research up to clinical trial studies. Technology transfer of traditional medicines, nutrition products, and vaccines, algorithms, and diagnostics products will be developed and transferred to potential

producers in the form of technology briefs. Eventually, the transferred production packages to the manufacturing firm and products will be assessed and evaluated to ensure the proper benefit to the communities.The figure below shows the conceptual workflow.

In order to transform Evidence-Informed Decision Making (EVID) the institute more likely to hunt the gap between policy developers and community practices for final utilizations. In this work process, health knowledge management participating the potential evidence users through evidence generation in setting research priorities, and insisting on “use evidence” during the health policy design and Evidence-informed decision-making is applied. In the transforming evidence generation, synthesis, and Technology innovation stakeholder involvement is critical to address the important issues that are encountered in delivering evidence-based health care.

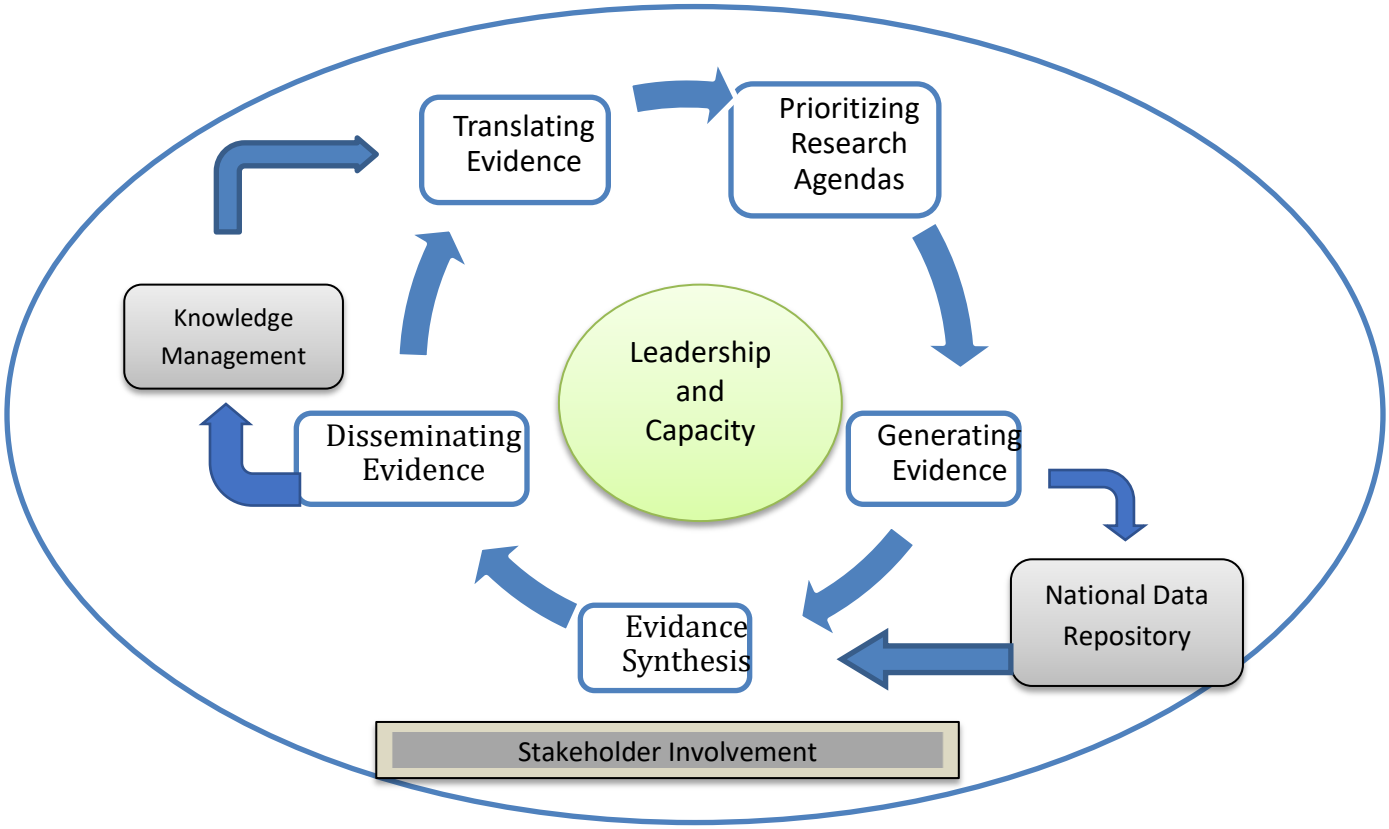


Figure 3.1 Conceptual workflow of Evidence Generation and production package Innovation for Effective Decision-Making[11]

SO-2: Enhance Digital Health Data Science, Analytics and Information System

SR-2: Enhanced digital health data science, analytics, and information system

Description

The basic functions of this strategic objective are creating and strengthening health data repositories and hubs, strong data governance, and data exchange, data interoperability and integration, data security systems, health data analytics, and visualization hubs, and other applications, data curation, and standardization, and enhance digital health and health information system strategies of the country. It encompasses identifying relevant data sources and making them interoperable, establishing and managing data repositories and securities, putting in place data governance standards and regulations, enhancing standard data exchange, applying robust data analytics tools and methods on national priority health issues as described in figure (3.2). by applying advanced health data analysis and basic concepts of data science such as artificial intelligence, machine learning, and data mining it intends to discover useful patterns and natural clusters in health data, to build robust models that are capable of predicting future events for formulating proper decisions to measure health progress of the country (GTP-III, HSTP-II and SDG indicators) and policies to be taken accordingly.

The health data repository and governance function include archiving all health and health-related countrywide available data with their respective data sources and institutions, data standards, and regulations, building state of the art data systems and capacities to support national digital health and health information system strategies. Ultimately this improves data availability, accessibility, interoperability, and reusability of data in the country using digital technologies, dashboards, and visualization tools, to various users and actors including

[11]Motani, P., Van de Walle, A., Aryeetey, R. *et al.* Lessons learned from Evidence-Informed Decision-Making in Nutrition & Health (EVIDENT) in Africa: a project evaluation. *Health Res Policy Sys* **17,** 12 (2019). https://doi.org/10.1186/s12961-019-0413-6

public/citizen, clients/patients, health care providers, health care managers, researchers, academic institutions, donors, implementing partners and other health sector stakeholders.

This objective supports EPHI's burden of disease foundation and collaborative efforts to play a leading role in Africa through the application of demographic methods, health metric science, health informatics tools, and other methods. This burden of disease at national, regional, zonal, and district levels is comprehensive and comparable quantification using available and accessible health and health-related data in collaboration with the ministry of health, in-country universities, and research institutes. These efforts are aiming to show health improvements in the country and across regions and cities; to show health inequalities in socio-economic, population, and demography, and access to health care across regions and cities and districts.

Activities in this strategic direction include giving support to regional health bureaus, regional public health institutes, in-country health, and demographic surveillance systems to capture all health and health-related data from multiple sources engages health data actors, ensures data exchange and security, establishes data repositories, following data governance standards and regulations, create automated data systems, provide regular updates, and manage and analyze the data.

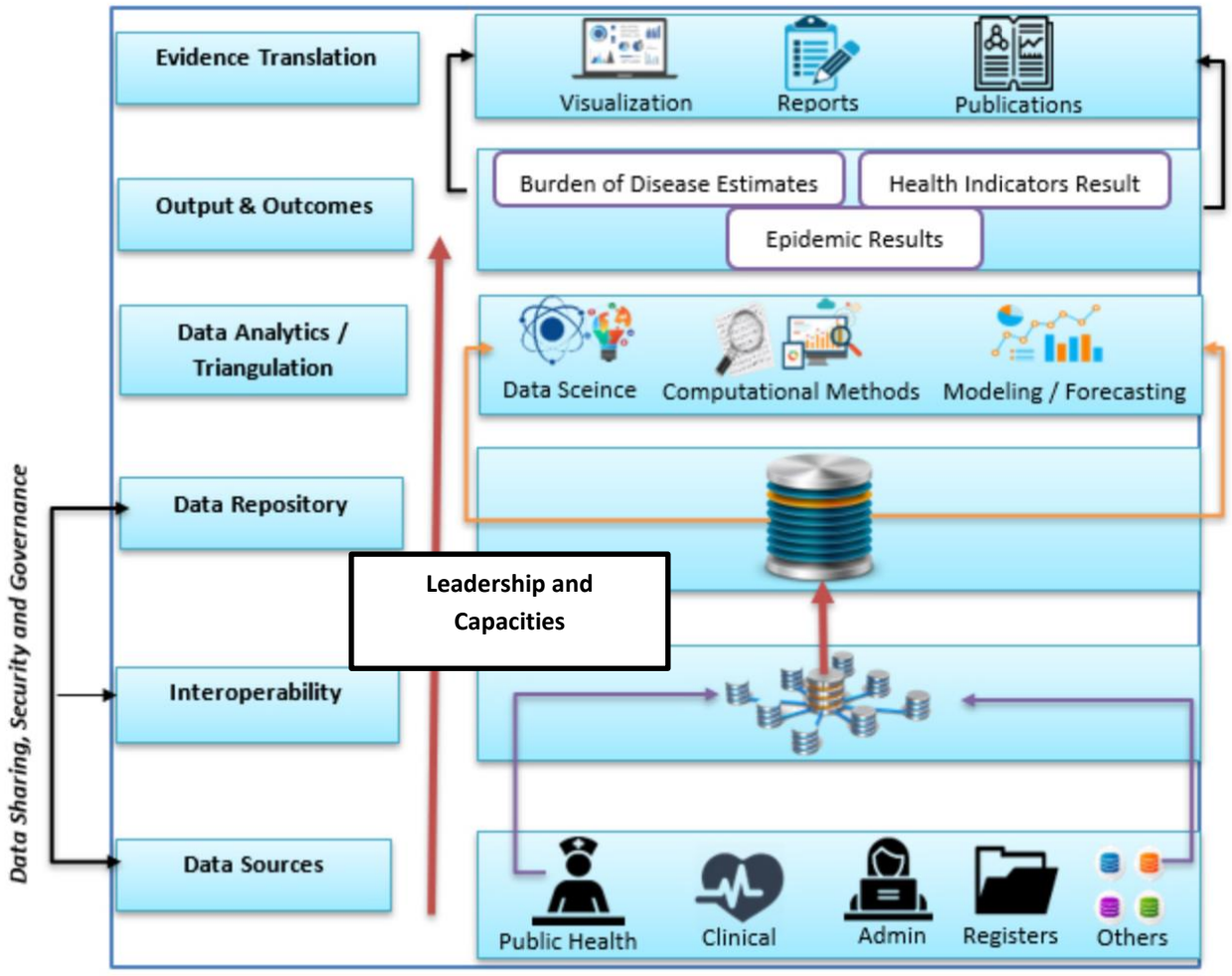


Figure 3.2: Workflow of data sharing, security and Governance

SO-3: Build a Resilient Public Health Emergency Management System for Strong National Health Security.

SR-3: Protected and Treated General Community from Public Health Risk and Emergencies

Description:

The unified definition of resilience by the UN is "the ability of individuals, households, communities, cities, institutions, systems, and societies to prevent, resist, absorb, adapt, respond and recover positively, efficiently and effectively when faced with a wide range of risks, while maintaining an acceptable level of functioning and without compromising long-term

prospects for sustainable development, peace and security, human rights and well-being for all"[12]. Therefore, public health emergency management resilience can be defined as the capacity of health actors, institutions, and populations to prepare for and effectively respond to crises; maintain core functions when a crisis hits; and, informed by lessons learned during the crisis, reorganize if conditions require it[13].

An emergency can be designated as "a type of event or imminent threat that produces or has the potential to produce a range of negative health consequences, and which requires coordinating action, usually urgent and often non-routine" This includes pandemics, epidemics, and disasters (natural and technological), as well as those involving violence and conflict, which can often become protracted. Primary health care has an essential role in preventing, preparing for, responding to, and recovering from any emergency[14].

Therefore, Resilient PHEs actions relay around the PHEM cycles: Prevention, Preparedness, and readiness, Response, Recovery, and transformation: in reality, these PHE cycles may overlap each other and over emergency phases (Pre-emergency, During-emergency, and Post-emergency because of public health emergency dynamics behavior) also it requires capacities of public health emergency management resilience cover all phases of public health emergency management.

The cycle of Prevention aims to strengthen early warning system (event-based or indicator based *i.e.* both integrated disease surveillance and laboratory-based surveillances) revised the list of reportable diseases, potential risk screening of travelers, enhance digital information management of multi-hazards (infectious disease outbreaks, biological, chemical, radiological and environmental) and re-define the digital reporting tool (DHIS-II), Surveillance data analysis and interpretation, rumor collection and verification, Provide feed-back to facilities and regions, finally, risk communication will be held. The cycle of preparedness and readiness include assessment of an institutional capacity (resources) and capabilities (such as training and credentialing) to respond: building and maintaining the necessary capacities and capabilities:

[12]United Nations Chief Executive Board, 2017
[13]*Kruk et al., 2015 available* *https://www.researchgate.net/publication/317118883_Building_resilient_health_systems_A_proposal_for_a_resilience_index*.
[14]World Health Organization 2018, Primary health Care and Health emergencies

testing them in exercises and real events: and reporting on the response in after-action reviews, ensuring that lessons learned are incorporated into EPRP and VRAMS.

During-emergency Response cycle starts with early detection and activation of EOCs or establishing an incident-management system that has modular, scalable, and flexible teams: establish rapid response team and Deploy to Field (include medical team): preparation of reporting templates & case definitions, and rapid assessment/investigation of the outbreak, Confirm the outbreak, identify all cases and contacts, detect patterns of epidemic spread, estimate the potential for further spread, maintain essential health services will undertake.

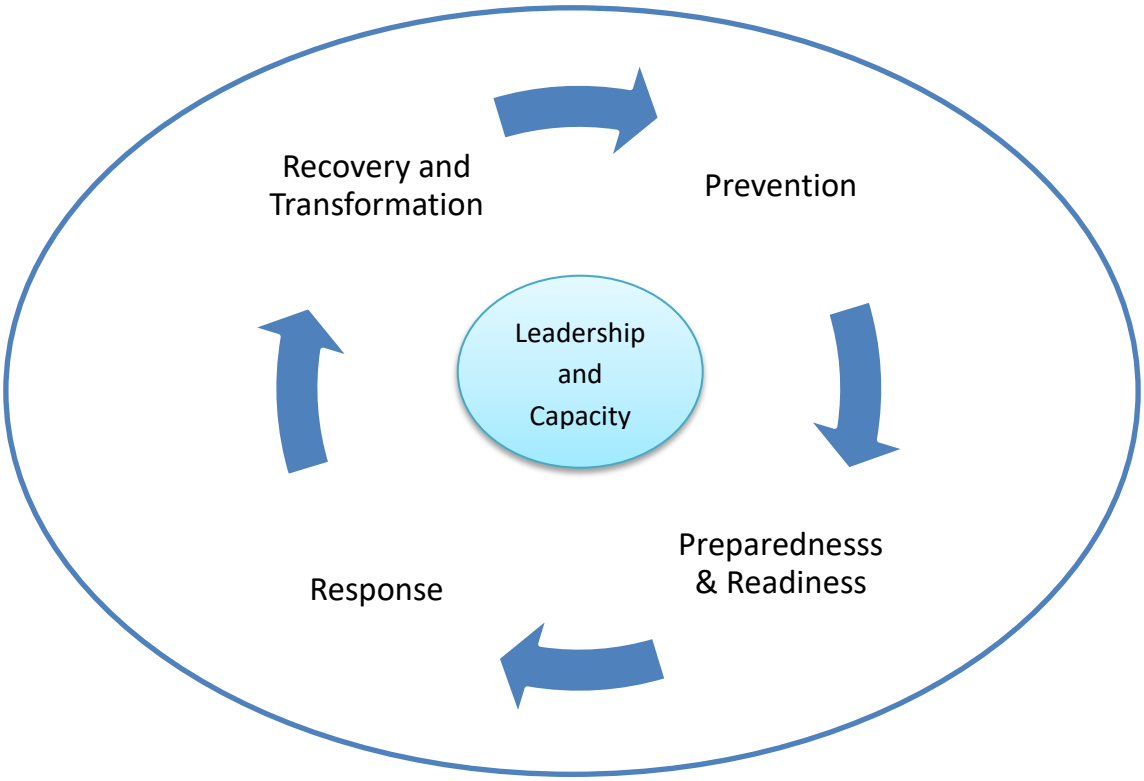


Figure 3.3: Conceptual workflow of PHE Management[15]

Post-emergency phase there will be a shrink in the whole livelihood means and the health status of the people, to overcome this recovery, rehabilitation and transforming initiatives will commence.

[15]WHO PHE Management Cycle Framework

This strategic objective incorporates multi-sectoral coordination, and collaboration mechanisms to carry out the following characteristics: all-risk planning (plus hazard-specific planning where necessary): all stakeholder approaches (prepared the resilient communities able to respond to risk at the local level): and a comprehensive approach: includes risk prevention/mitigation, preparedness, detection (when communicable diseases involve), response and recovery. Finally, improving the health security by tackling public health and medical emergencies caused by natural and man-made disasters, conflicts, recurrent and unexpected disease outbreaks, nutritional emergencies road-traffic accidents, flooding, chemical spills, and new health threats in line with relevant national legal framework and policy guidance to Ensuring health security of the country is the destination of this strategic objective.

SO-4: Enhance Building Sustainable and Resilient Laboratory System for High-Quality Laboratory Services

SR-4: sustained and resilient quality laboratory system and services

Description

Sustainable quality laboratory service is a crucial part of patient care, public health research, technology transfer, and public health emergency management. The health sector has been working towards improving the quality of laboratory services through capacity-building efforts, implementation of quality laboratory management systems, infrastructure development, and enhanced support for accreditation to international standards. While the further expansion of laboratory infrastructures at all tiers of the national laboratory system remains to be one of the priorities of 3rd SPM, emphasis will also be given to promoting the quality and accessibility of laboratory services through strengthening the supply chain and equipment management systems including the provision of preventive and curative equipment maintenance services, introducing innovative technologies, appropriate deployment of qualified human resource and scaling up the implementation of Laboratory Information System (LIS).

SO-5: Enhance Core Public Health Capacities for Proactive Governance

SR-5: Advanced Capacities and Enabling Environment for leading public health position

Description

Public Health Capacity development is acquiring sustainable human skills and knowledge, dynamic and robust organizational structures, efficient resource management, and having commitment at all levels in public health settings to ensure improvement in health and other sectors for sustaining and multiplying health gains. This strategic objective designed to significantly contribute towards the realization of the institute's vision through public health capacity development in an effective and efficient way, creating an enabling environment and engaging relevant stakeholders.

In line with this, the institutional leadership and governance system works on mobilizing adequate resources and utilizing them efficiently, investing in state-of-the-art infrastructures and human resource development, maintaining motivated and skilled human resources, establishing robust information communication technology platforms. For this, the leadership emphasizes engaging the community, fostering public-private partnerships, and advocacy for raising government public health spending share and the effective use of grant funds.

Furthermore, the leadership plays a crucial role in strengthening national, regional, and international collaboration and partnership with stakeholders and partners who work in public health issues to address the Institute’s needs and priorities. It also ensures transparency and accountability through effective, efficient, equitable, accessible, safe, and sustainable service provision in health and nutrition research, public health emergency management, and laboratory quality improvement programs for building public trust and satisfying the general public.

These key functions have been demonstrated in the below depicted conceptual framework (figure-3.3), which is adopted from two frameworks: the United Nations Development Program and the Public Health and Health Promotion Capacity at the National and Regional Level[16]. The key functions interconnected in the framework are Leadership & Governance, Organizational structure and Reforms, Workforce development, which consists of Program implementation and follow-up, s, Information communication, Financial Resource, and Partnership alongside Country specific policy.

[16] Altuttis C.,den Broucke.,S.V., Chiotan, C.,Costongs,C.,Michelsen,K., and Brand,H. (2014). Public Health and Health Promotion Capacity at national and regional level: a review of conceptual frameworks.Journal of Public Health Research

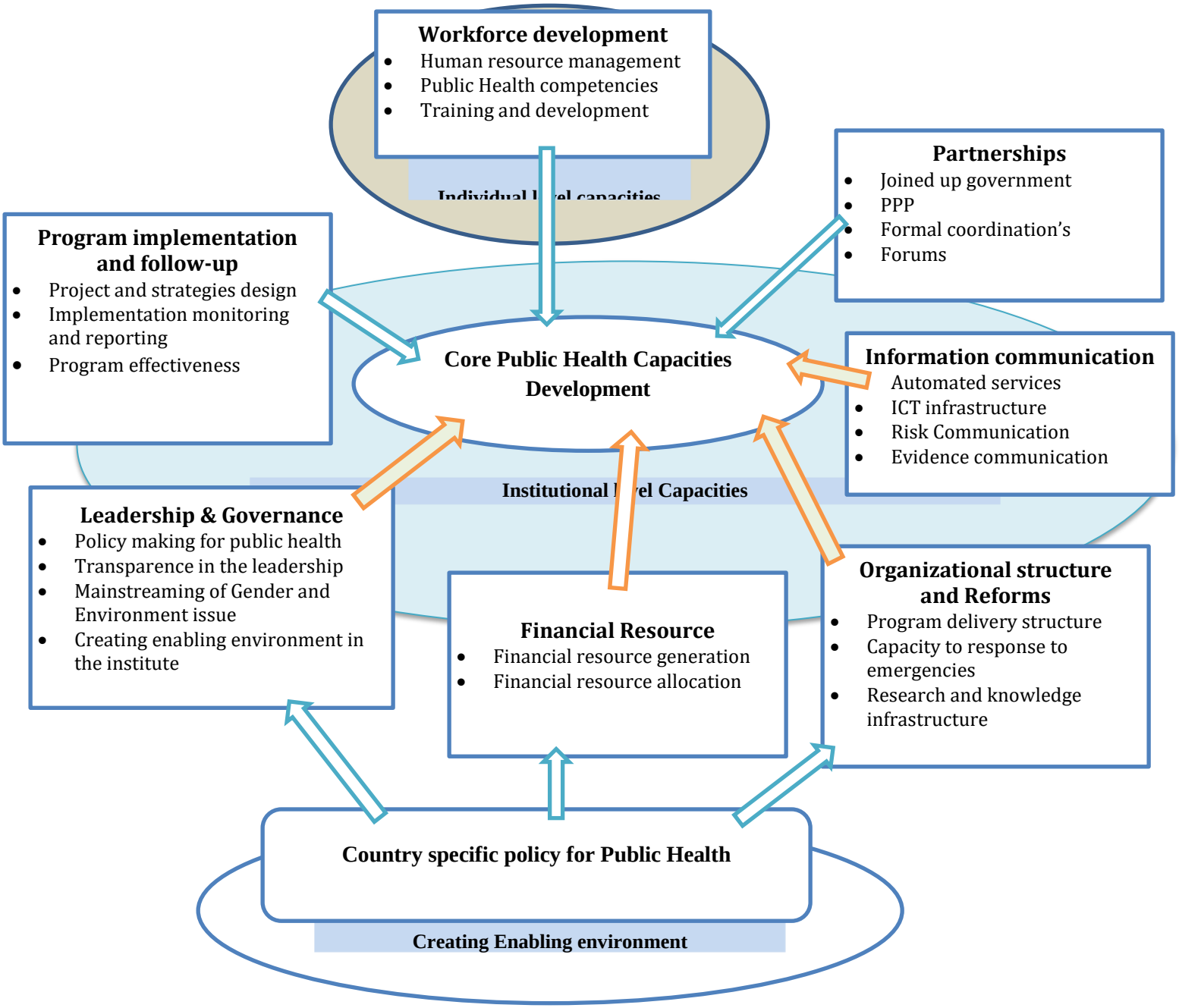

Workforce development
Human resource management
Public Health competencies
Training and development
Individual level capacities
Partnerships
Joined up government
PPP
Formal coordination's
Forums
Program implementation and follow-up
Project and strategies design
Implementation monitoring and reporting
Program effectiveness
Core Public Health Capacities Development
Information communication
Automated services
ICT infrastructure
Risk Communication
Evidence communication
Institutional level Capacities
Leadership & Governance
Policy making for public health
Transparence in the leadership
Mainstreaming of Gender and Environment issue
Creating enabling environment in the institute
Financial Resource
Financial resource generation
Financial resource allocation
Organizational structure and Reforms
Program delivery structure
Capacity to response to emergencies
Research and knowledge infrastructure
Country specific policy for Public Health
Creating Enabling environment

Figure 3.41: Core Public Health Capacity development for proactive Governance Conceptual Framework

These key capacity development functions are categorized into three levels of capacity (UNDP)[17]: the enabling environment (often called system-level capacity), the organizational level capacity, and the individual level capacity. Any effort at assessing capacity and developing capacity-building plans needs to take into account these three levels of capacity to have interrelated perspectives. The eight strategic key functions under Core Public Health Capacity Development are highly interrelated and mutually interdependent that addressing them comprehensively will have a synergetic effect.

3.5.2 Strategic Objectives Results

Strategic Planning and Management is a process of getting relevant results effectively and efficiently, actualizing the vision, enjoying the journey, and learning from it. Besides designing the strategic objectives, it is crucial to put the expected results. Therefore, to become a center of excellence in public health, the following expected results are expected.

SR-1: Scientific evidence-based information/knowledge that will be translated into policies, programs, public education & knowledge, product packages, and products.

SR-2: Enhanced digital health data science, analytics, and information system

SR-3: Protected and Treated General Community from Public Health Risk and Emergencies.

SR-4: Sustained and resilient quality laboratory system and services

SR-5: Enhanced Capacities and Enabling Environment for Public health

[17] United Nations Development ProgrM FRAMmework, 2009

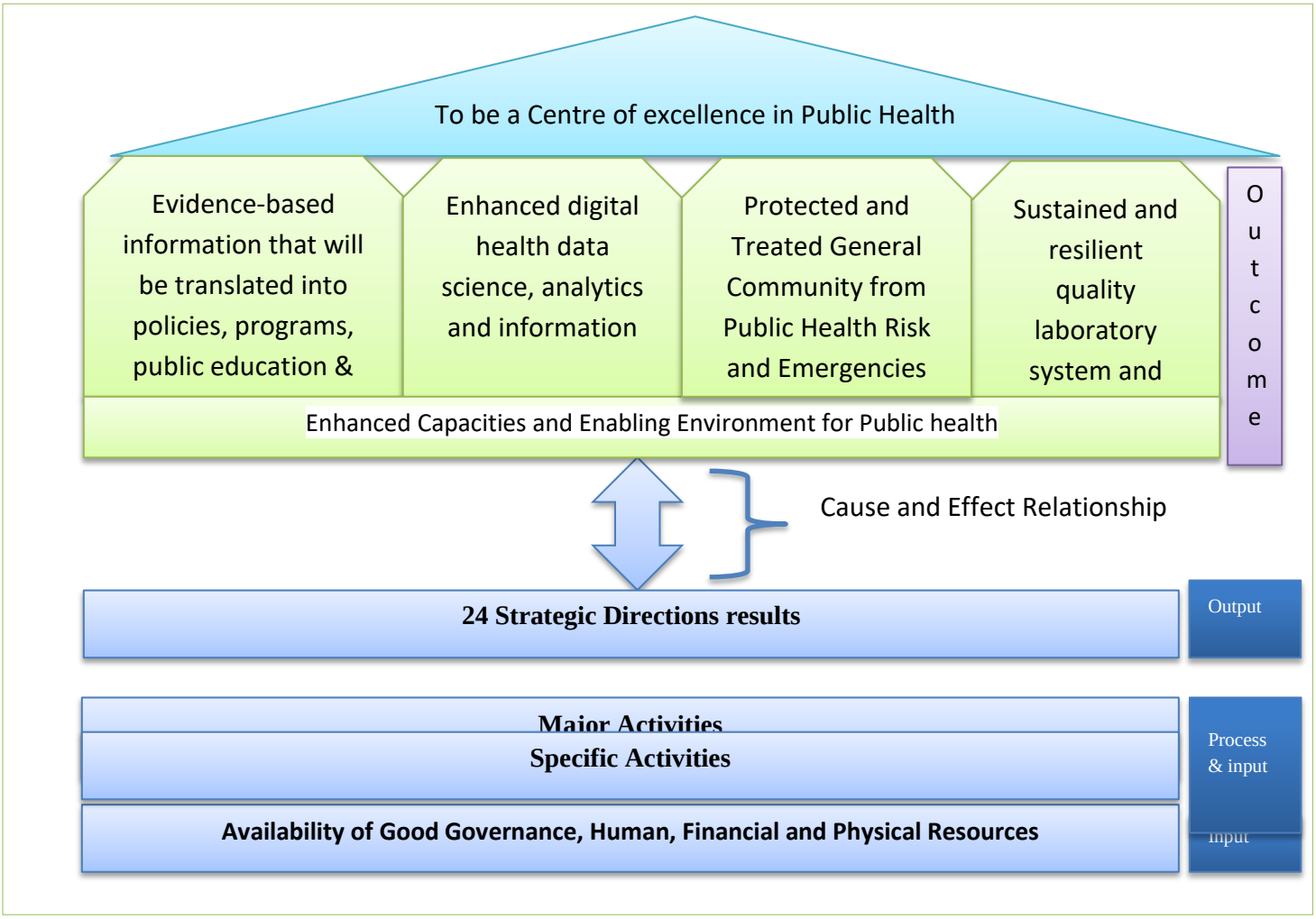


Figure 3.5: Strategic Objectives Result chain

3.6 Strategic Directions

1. Advance Evidence Synthesis, Policy Analysis and Knowledge Translation for Evidence-Informed Decision-Making.

Description

This strategic direction focuses on the prioritization of national health priorities, the generation and synthesis of demand-driven high-quality evidence and health policy analysis, the use of evidence to make informed decisions, and the promotion of a culture of evidence-based decision-making and practice. At the national level, the priorities public health research agenda will be developed with stakeholders through analysis of gaps and developing strategies and roadmaps. It aims at improving evidence synthesis and policy analysis through the application of systematic reviews and other rigorous scientific methodologies using various data sources that are archived NDMC as well as generated evidence from other EPHI research directorates and to standardize the process and conduct of prioritizing health problems, applying rigorous scientific methods for evidence synthesis, communicating synthesized evidence to various stakeholders through existing media outlets and scientific communication channels, and tracking and evaluating evidence usage for policy framework and improved health practice in the country.

Strengthening evidence synthesis is crucial to Create 'fit for purpose' synthesized research evidence, disseminating them effectively through appropriate channels for a range of target audiences, and providing resources and tools to support the implementation of findings is crucial. Activities in this strategic direction focus on knowledge translation and technology transfer during all stages of evidence synthesis, actively involving key stakeholders (stakeholder engagement) in topic and question selection, design, execution, interpretation, and dissemination of the production. It focuses on sustainability to ensure that evidence-informed decision-making is embedded in practice and maintained over the long term.

The synthesized information from the generated evidence-based information consists of systematically reviewed, in-depth analyzed, and translated information on diseases epidemiology, prevention, control, treatment and diagnosis of key communicable and non-communicable diseases, nutrition issues, traditional medicine, and health system for appropriate use by the end-users which will be delivered and utilized by decision-makers and other stakeholders for evidence-based decision making.

Major Activities

- Regularly update and execute evidence and knowledge translation guideline

- Conduct annual evidence and health technology demand assessment of MOH, RHB, and Partners
- Develop national public health research priority and evidence synthesis roadmap
- Prepare a cost-effectiveness analysis (CEA) database (registry)
- Develop standards, protocol, and short and long term policy plans
- Conduct in-depth analysis and evidence synthesis on different research questions
- Conduct evidence dissemination, scientific workshop, and congress, promotion for end-users, and translation to action, through different media outlets and others
- Produce high-quality, relevant, and up-to-date synthesized research evidence
- Build capacity for use of evidence in informing health policy and practice
- Track, verify, and measure the use of evidence for decision, policy framework, and public health practice;
- Conduct advocacy on the culture of evidence use.
- Disseminate evidence through different communication outlets (workshop, broadcasted media, and scientific conference) for a wider audience;
- Measure the outcome and impact of evidence use for decision

Expected Result

- Identified national health priorities
- Synthesized evidence (Evidence briefs, Issue brief, Policy briefs, Rapid evidence, synthesis, Rapid review, Scoping review, Stakeholder dialogue, Health Technology Assessment report/HTA report, In-depth analysis, Systematic review, Meta-analysis, Training on 'spark insights.
- Held scientific workshop and congress
- Disseminated evidence
- Scientific newsletter and magazines
- Published Scientific Journal
- broadcasted scientific programs
- Improved evidence-informed decisions and practice
- Enhanced digital health and information system

- Produced CEA registry for use in African/South East Asian countries

2. Enhance communicable and non-communicable diseases Research and Surveillance

Description

Communicable and non-communicable diseases research and surveillance will be conducted on priority health issues for evidence-based information generation, translation, and utilization for policies, programs, public education. The scientific knowledge generated enhances the technology transfer. Improve the health of the general public. The aim of this strategic direction is areas to generate standardized information on the public health importance of communicable and non-communicable diseases and their determinants, epidemiology, biomedical, behavior, anthropology, socio-cultural, and etiology. The strategic directions also address the survey and surveillance of the prevention, treatment aspects of the diseases. The research findings will be disseminated to promote knowledge and communicated to customers/stakeholders for decision making.

Major Activities:

- Conduct research and surveillance on national priority communicable diseases (Viral, Bacterial, Parasitic, rickettsia, and fungal)
- Conduct research and surveillance on national priority non-communicable diseases,
- Innovate or adapt research methods/tools or interventions on communicable and non-communicable diseases
- Establish National Genomic and Bioinformatics Center
- Conduct research and surveillance on environmental and occupational health
- Conduct research and surveillance on behavioral and metabolic risk factors
- Conduct research and surveillance on injuries and multi-hazard risk factors
- Conduct research on animal, human, and environmental health interface (One Health approach)

Expected Results

- Technical reports
- Publications in peer-reviewed journals

- Dissemination of evidence in scientific forum and proceedings
- Procedures (SOP) and Guidelines
- Book(s) and Chapter in books
- Establish health and demographic surveillance sites

3. Improve traditional and modern medicine research and development

Description

Traditional Medicine and its practices are directly or indirectly related to the protection of societies health, equitable distribution of public health care services, right to occupation and profession, the freedom of trade, intellectual property right, biodiversity conservation, protection and promotion of indigenous knowledge and culture. The strategic direction refers to systematic exploration and documentation of traditional medicine knowledge and practices besides strengthening research based conservation and agricultural studies to ensure sustainability and promote commercial farms of validated medicinal plants. It also encompasses the training of traditional healers to improve standardized traditional medicine health service, experience sharing, ethical practice and supporting research and development initiatives on traditional medicine. In addition, enhancing coordination and collaboration of stakeholders to align research agenda prevents duplication and fragmented efforts for efficient utilization of resources. The strategy also promotes the research and development of standardized traditional medicine products and production packages for reliable quality and rationalization of their use. Research on laboratory-based product packages recipe of traditional medicines optimized in incubation centers for scaling up in industries to contribute for the health care besides exploiting their commercialization potential. The strategy is to promote public health by ensuring safety, efficacy and quality of locally produced traditional medicines as well as to standardize and regulate the practice of traditional healers.

Major Activities:

- Conduct ethno-medicine survey of traditional medicine practice and medicinal plants
- Conduct preclinical study (safety, efficacy and quality of traditional medicine)
- Increase the laboratory scale formulation of scientifically validated traditional medicines and transfer the technology package
- Conduct clinical trial of standardized traditional medicine

- Conduct national survey on traditional medicine (professional practices, traditional medicine, traditional healers, community and their practices)
- Compile data repository on medicinal plants, other source of traditional medicine and traditional practices
- Study on the trends of drug prescription andpatient's adherence for the treatment
- Capacitate training healers to improve the health care delivery
- Study pharmacovigilance to monitor adverse drug reactions

Expected Results

- Technical Reports
- Publications in peer-reviewed journals
- Dissemination scientific forum and proceedings
- Standard Operational Protocols/Procedures (SOP) and Guidelines
- Monographs and Pharmacopeia
- Book(s)
- Chapter in books

4. Strengthen research and surveillance on nutrition, food science and food safety

Description

Nutrition is a critical part of health status development. Better nutrition is related to improved infanthealth status,child and maternal health, stronger immune systems, safer pregnancy and childbirth, lower risk of non-communicable diseases (such as diabetes and cardiovascular disease), and longevity. Malnutrition, in every form, presents significant threats to human health. Ethiopia has one of the highest rates of malnutrition in Sub-Saharan Africa and faces acute and chronic malnutrition and micronutrient deficiencies. The strategic direction emphasized on the nutritional status of population and its determinants through conducting national nutrition surveys, studies on diet-related nutrition-sensitive, optimal food processing methods and bioavailability of micronutrients, food fortificants studies and food composition is updating. In addition to these guidelines, impact of health education programmers on micronutrient (including zinc, iodine and vitamin A) consumption, manuals will be also

developed for different population groups. The research findings will be disseminated to promote knowledge and communicated to customers/stakeholders for decision making.

Major Activities

- Conduct research and surveillance on nutrition
- Conduct food safety research
- Conduct research on food science and technology
- Develop complementary and supplementary food formulation package

Expected Results

- Technical reports
- Publications in peer reviewed journals
- Dissemination scientific forum and proceedings
- Guidelines and SOPs
- Manuals and Bulletin
- broadcasted nutrition program

5. Strengthen Research and Evaluation on Health system, MCH, health policy, program, and strategies

Description

Health system research means a problem solving study undertaken on health service delivery, medical equipment and drug supply, human resource training and deployment, health care finance, health information and management system and health sector policy and governance, community System Strengthening for service availability, coverage, service readiness, and financial risk protection improving the external health determinants and ensuring access to health care for all age groups of population.

This direction also addresses reproductive health, the assessment of the effectiveness of the policies, programs and strategies and further research findings will be disseminated to promote knowledge and communicated to customers/stakeholders for decision making.

Major Activities

- Conduct research and surveillance on health care services delivery
- Conduct research on human resource for health
- Conduct research on health information system
- Conduct research on pharmaceutical products and technologies availability, access, quality, and utilization
- Conduct research on health care financing and health economy
- Conduct policy analysis, research on health leadership and governance/stewardship
- Conduct research on reproductive, adolescent, and community health issues
- Conduct policy, program, strategy, and guideline evaluations
- GERD health research and surveillance systems

Expected Results

- Technical reports
- Publications in peer-reviewed journals
- Dissemination of evidence in scientific forum and proceedings
- Guidelines and Manuals
- Bulletin, research brief

6. Improve research and development, for Local Vaccines and Diagnostics Production

Description

The long-term national plan is to establish national capacity for our own vaccine development (discovery to product/manufacture, system and application). For the short, medium and long-term goals, we would need to define what areas should be prioritized for vaccine development. It could be that national Institutes could collaborate on testing what the Institute has in the pipeline if it can fit in to our plan in

developing capacity to develop our own vaccines in a decade or so. Thus, this strategic has the objectives to strengthen national development by innovation, Increase the commercialization of products & process developed by local public institutes and universities and to strengthen the collaboration between research institutes and universities.

The changing global economy and the uncertainties and inequities brought about by a changing vaccine and diagnostics market have reemphasized for a national strategy to strengthen the local capacity for vaccines research, development and manufacturing. As Ethiopia is expected to join the lower middle-income country by 2025 GAVI support will be stopped. The selection of what vaccines to produce would depend on what technology is best. it would be wise prefer to invest on technology that would serve us in the next years than technology that would be out of use with next few years- such as polysaccharide meningococcal based versus conjugate meningococcal vaccine. Priority is also given to technologies that can contribute to research capacity development, strengthen GMP and QMS know how and etc. Other considerations would be ease of application, and possibility of upgrades,

Major Activities

- Develop and execute regulations and proclamations
- Improve vaccine research, development and technology transfer
- Identify, prioritize and develop research projects
- Conduct validation and verification
- Identify potential demand, unmet needs and priority vaccines to be produced in Ethiopia.
- Identify and prioritize technologies to be transferred
- Strengthen cooperation/partnership (Identify potential partners/Institutes for technology transfer and establish and)
- Develop business models for vaccine manufacturing and development
- Develop incentive mechanism to facilitate sustainability of local production of vaccines
- Conduct validation and verification of new /improved interventions
- Support and implement GMP for existing vaccine production system (CCV, NTV)
- Invest in technical and managerial capacities by training (new processes, new analytical methods…)
- Complete on-process production technologies for public consumption (cell culture vaccine)

Expected Results

- Technology brief technical reports
- Publications in peer reviewed journals
- Number of clinical trials conducted
- Number of feasibility studies conducted
- Dissemination scientific forum and proceedings

7. Improve Health and Nutrition Technology Transfer

Description

Health and nutrition technology transfer means the process of sharing of skills, knowledge, technologies, methods of manufacturing samples and facilities among industries for ensuring scientific and technological developments and access to a wider range of users for exploiting the technology into new products, processes, applications, materials or services. This includes imported technology adoption and evaluation besides developing technology from indigenous knowledge and practices through research and development. Production packages development but not limited to, traditional medicines, nutrition, vaccines, products, etc. will be generated, scaled up, and transferred in the form of technology briefs to producers. The products, diagnostics, and kits from the vaccine, traditional medicine, and research laboratories will be produced from the developed production packages and disseminated to end-users. Furthermore, transferred production packages and products will be assessed and evaluated to ensure the proper utilization by the stakeholders.

Major Activities

- Adapt/Adopt new health and nutritional technologies for production and/or utilization
- Assessment, evaluation, and validation of diagnostics and health technologies
- Develop health and nutrition products and production packages from indigenous
- knowledge and practices
- Innovations on health and nutrition technologies
- Promote and transfer developed production packages to potential producers
- Disseminate products to end users

Expected Result

- Patent and royalty certificate
- Developed Production Package
- Transferred Production Package
- Produced pilot products
- Disseminated Products
- Evaluated diagnostics and health technologies
- Utilized product packages

8. Enhance national health data repository, data security systems and strong data governance systems and maintain database interoperability

Description:

This strategic direction aims to build and strengthen health and health-related national data repository with strong human resource capacity and technological requirements that include implementing full security and backup systems which in turn enables to maintain both physical and cybersecurity challenges. This strategic direction aims to build the data repository with two-factor authentication including a data mart that has high storage for health and health-related data. And implement a data warehouse with a data quality monitoring system.

There is a need to ensure data governance through standards and regulations to enhance open data systems and open data access. This needs to develop and execute data policies and regulations such as, data access and sharing policy through well-developed systems, endorsing data regulations and procedures. There is also a need to improve health data quality and integrity using state-of-the-art applications to automate data systems and provide regular updates. This includes developing data quality assessment methods to enhance data quality assurance procedures and techniques to address data quality problems. Furthermore, it needs to have a national data-quality governing body (i.e. this strategic direction is to define data governance and structural arrangements such as the council, steering committee, advisory groups, or technical

working groups) to function through an established standardized process engaging health data actors.

In the interoperability, it is to define data architecture and minimum standards to clarify the mapping and archiving process of both institutional and population-based data sources, arranged and interconnected with defined criteria or standards using FHIR (Findable, Accessible, Interoperable and Reusable) principles. It needs setting standards for identifying best fit data exchange applications and interoperability bus. This needs developing data exchange standards for interoperability of the data, data exchange between sources, data storage and analysis, and data security. The standards to be developed may include but not limited to 1) development and execution of terminology/vocabulary to address the ability to represent concepts in an unambiguous manner between a sender and receiver 2) define data content standards, data transport standards, data privacy, and security standards 3) Develop and execute data and related policy, proclamation, regulations, directives and guidelines, frameworks, standard operating procedures (SOPs).

Lastly, there are a need to improve data use culture through promotion and advocate and incentives, "data campaigns, and assigning national data day", developing data use strategy with defined monitoring schemes and evidence quality standardization procedures. Furthermore, organizing national workshops and other initiatives to disseminate evidence for wider use.

Major Activities

- Create a national and continental health data hub/data repository with data backup and recovery
- Enhancing advanced data infrastructures and data security systems (Standard data warehouse (ICT infrastructure) development and Building standard data security, backup, and recovery system)
- Mapping and archival of prospective & retrospective data sets at national & sub-national level that includes mapping all possible data sources, Establishing communication, follow-up, Creating sustainable systems, and using secured electronic data-sharing platforms
- Digitizing hard copy documents and making them ready for reuse

- Developing metadata for archived data sets, catalog and index health and health-related data using standard systems on RTDS enhances the open data system for the visibility of data sets to the public and encourages data use trends of the country.
- Digitization/automation of data systems and regular update with data dashboards
- Ensure data governance (data sharing protocols/data sharing regulation) to enhance open data system and open data access to advance open research landscape, improved research integrity, innovation, and discovery (FAIR Principle) Ensure the implementation of open data access system through the health system and ensure the implementation of standard data collection tool development & ensure its integrity throughout the process
- Make health information systems interoperable and interconnected with interoperability architecture within EPHI and across the region. (Developing real-time case-based surveillance system and health information system interoperability layer)
- Providing technical support, Capacity building, and technology transfer among different data actors
- Promote and advocate data use culture
- Strengthen collaboration and engagement with HDSS, Local Universities, ACDC, IHME, BMGF, ABReN, FMoH, Health Bureau, NPHI
- Enhancing data quality status of secondary data and improving its use for decision making

Expected Results

- Enhanced and Advanced data infrastructures and data security systems at data repository and governance unit
- An enlarged number of data sets archived at the national warehouse and increased data use habit
- Improved data quality of secondary data in order to generate relevant facts
- Improved automated data systems for error handling; data entry page; translating data results into relational databases.
- Increased number of digitized hard documents and improved habit of using this digitized document for decision making and research

- An improved data sharing trend, data use culture and enhanced open data system and open data access for different research and policymaking
- Enhanced interoperable and interconnected departments and organizations
- Enhanced and Developed the metadata for archived data sets, catalog and index health and health-related data using standard systems on research tracking database management system.
- Advanced data collection tools for different EPHI research directorates.

9. Advance public health data science Computational Methods, statistical and mathematical Modelling and visualization techniques

Description

This strategic direction is designed to transform health data analytics and result representations, using cutting-edge techniques, methods, and applications that blend mathematical and rigorous statistical theories and techniques to advance health data analytics, modeling, forecasting, integrated analysis, heterogeneous and geospatial analysis. This is crucial because traditional study design and analytical approaches are inadequate to tackle challenges posed by the unprecedented volume of large and unstructured health-related datasets. This needs wrangling, scraping, creating, and managing large health-related datasets; applying advanced statistical and mathematical methods to draw conclusions from data. This strictly requires the utilization and the application of data science methods to reveal features of large and complex health data; developing and advancing statistical and mathematical theories behind common data science methods; summarizing, visualizing, and interpreting data; and finally, effectively and timely communication and disseminate the results.

There is a need for providing innovative and robust computational and visualization approaches for high-dimensional health data, while bringing novel statistical and mathematical methods that can improve inference about the health data, at the same time developing new ideas that can lessen bias and reduce variance in a particular area. This needs to identify, design, develop and execute several analytical platforms that fit multiple data sources. These platforms must be enabled with data visualization modules that provide an accessible way to see and understand

trends, outliers, and patterns in health data. This is a crucial step for making data-driven solutions. This requires the creation of a web-based platform that is very interactive with enormous visualization galleries; simple to use and openly accessible; useful in quantifying and presenting health loss from different diseases, injuries and risk factors; helpful in assisting policymakers and in general health workers to understand the true nature of this country's health care challenges; useful in rapidly characterizing, identifying and estimating infectious disease parameters and predicting the outcomes.

There is a constant increment in both collected and stored health-related data. These data are becoming huge in volume, fast in velocity, well varied, and mixed in variety. There are also incredible changes and improvements in technologies and methods used in processing, analyzing, and visualizing the data the center has at hand. From national health systems, surveillance, surveys, rural clinics to the most advanced high-throughput sequencing technologies—data are central to our ability to improve health, from delivering care to conducting health research. As data are becoming deeper and richer with new sources of data, generated using new technologies and sensors, our ability to harness and leverage useful knowledge from these data are critical to accelerating discoveries and innovations that can impact public health. This requires building data science and analytic capacities on machine learning/ artificial intelligence, big data analytics through short-term data science training, fellowship, and internship.

Major Activities

- Apply data science, Machine Learning (ML)/Artificial Intelligence (AI), big data analytics for health and fostering and enriching public health intelligence
- Advance health data analytics, modeling, forecasting, integrated analysis, heterogeneous and geospatial analysis through development and application of advanced statistical and mathematical methods
- Maximize the use and utilization of local health datasets through the generation of extensive data quality assessment reports and guidelines for applying advanced health data analytics methods.

- Developing and maintaining national health data analytics and visualization hub Developing a national health data catalog
- Python package for Ethiopia health system (PyEhealth Package)
- Developing national health Geo-portal
- Establishing and Implementing a Web-based Early Warning, Alert and Response System and platform to enhance public health emergency early warning, prevention, detection, response, and recovery to disease outbreak.
- Support the automation and digitization work of the institute, the center, and the team.
- Build data science capacity: Fellowship and internship programs. In addition, providing short-term standard training with training manuals and curriculum on basics of health data science, and advanced data science.
- Modernize and standardize the data management of the center and establish a data center unit with a disaster recovery site
- Increase the unit's bio (statistical) and mathematical modeling, and data science utilization capacities
- Providing a scientific platform for advocating scientific methodologies, and developed platforms
- Application of geospatial technologies for systematic management of geospatial data
- Development and implementation of geospatial health data sharing policy
- Strengthen collaboration and engagement with AAU, UoG, IHME, EPHI (NTC, PHEM, and other directorates and departments), P2P, 10 Academy, MOSHE, INSA, ABReN, WB, and other institutes and organizations to advance the centers work.

Expected results

- Developed and maintained platforms that are simple, easily and openly accessible, and interactive; useful in quantifying and presenting health loss from different diseases, injuries and risk factors; helpful in assisting policymakers and in general health workers to understand the true nature of this country's health care challenges.

- Developed and maintained a system for providing a comprehensive catalog of health and health-related raw and analyzed datasets.
- Developed and maintained platforms, systems, visualization dashboards, portals, and enhanced data collection toolkits and/or systems for advancing the institute, the center, and the team towards the digitization era.
- Deployed and utilized python package libraries, to provide easy access to different data analytic and machine-learning techniques, help public health and medical researchers to synthesize, and utilize evidence generation methods using standard data science procedure.
- Advanced, operationalized, and fully functional early warning alert and response models and platforms, and enabled sentinel sites for rapid clinical and environmental data capture.
- Developed and maintained integrated health geo-portals
- Developed advanced health data analytics methods, models, forecast techniques, integrated and heterogeneous data analysis methods.
- Generated and disseminated quality assessment reports ad guidelines for improving the utilization of local health data sources.
- Identified, developed, and executed data science concepts using Machine Learning (ML)/Artificial Intelligent (AI)/Data Mining/Big Data Analytics for real-time disease modeling, SDG, HSTP, and GTP indicators tracking, and for predictive analysis for national and continental health data.
- Developed, reviewed, and accredited face-to-face and online course materials for basics and advanced health data science, proper health data management, Geo-spatial data analysis, climate data analysis for early warning, alert and response, and technical training providing guidance for using developed platforms and systems in form short-term training sessions.
- Trained individuals on face-to-face and online sessions for basics and advanced health data science, proper health data management, Geo-spatial data analysis, and climate data analysis for early warning, alert and response, and technical training providing guidance for using developed platforms and systems in the form of short-term training sessions.

- Generated and shared maps that show spatial distribution BoD, risk factors, etc… based on different spatial scales (admin boundaries)
- Developed and approved health geospatial data sharing policy document
- The specific effects of climate variability and change on disease burden and on opportunities and effectiveness in the public health response were quantified and understood
- Human Comfort Index computed and mapped
- Jointly developed health and climate atlas
- Need assessment reports, System Requirement Specifications (SRSs), guidelines and documentation, methodological papers, and evidence/policy briefs developed and communicated for deployed platforms and/or systems, models, and data science techniques.

10. Strengthen national, sub-national and local burden of diseases estimate using health metrics measurements

Description:

This strategic direction is to strengthen EPHI's burden of disease foundation and collaborative efforts to play leading role in Africa. Ethiopian Public Health Institute has established a comprehensive and comparable national and subnational burden of disease quantification efforts using available and accessible health and health related data in collaboration with the Global Burden of Disease (GBD) study at IHME, University of Washington, Ministry of Health, in-country universities and research institutes, and burden of disease collaborator researchers. These efforts are aiming to show health improvements in the country and across regions and cities; to show health inequalities in socio-economic, population and demography, and access to health care across regions and cities and districts, to help utilization of our limited resources efficiently in priority areas

Burden of disease estimates have been instrumental to revise Essential Health Service Package, to develop NCD strategies and interventions, to monitor and evaluate HSTP II with its M&E

framework and indicators, to evaluate health progress in the country, to ban all advertising of alcoholic drinks and forbade smoking near public places, to introduce a car-free day in major Ethiopian cities. Currently, disease burden quantifies more than 369 specific diseases and conditions, and more than 87 health risk factors both at national and sub-national levels for Ethiopia from 1990 to 2019, using more than 1,057 distinct data sources that include census, demographic surveillance, household surveys, diseases registry, health service utilization, disease notification, and other data sources. The burden of disease, injury, and risk factor quantification provides estimates on life expectancy, health adjusted life expectancy, fertility, socio-demographic index (composite indicator consists of income, education, and fertility). It also quantifies all-cause and specific causes of death, incidence, and prevalence of diseases, Years of Life Lost (YLL), Years Lived with Disabilities (YLD), Disability-Adjusted Life Years (DALYs) by cause, age, sex and years, and health risk factors' prevalence attributable health loss, life expectancy gain through decomposition methods.

Major Activities

- Develop and customize innovative burden of disease theories and concepts, methods, and techniques
- Develop and execute national and sub-national burden of disease implementation working guidelines
- Provide national, sub-national, and local burden of disease, and risk factor estimates
- Provide burden of disease estimates for national and sub-national SDG and HSTP indicators
- Produce annual national and sub-national health atlas, epidemiological disease profiles
- Provide strategic support to MOH and partners on the burden of disease issues.
- Provide support to in-country universities, Regional Health Bureaus, regional public Health Institutes, and regional public health laboratories on the burden of disease-related issues
- Strengthen national and international burden of disease collaboration
- Serve as sub-Saharan Africa burden of disease regional hub in collaboration with Africa CDC, National Public Health Institutes in Africa, WHO, and others
- Develop manuscripts and evidence briefs using GBD and other national data sources
- Provide updated annual burden of disease estimates for National Health Account and National Drug and Logistic data triangulation

- Triangulate and synthesize national burden of disease estimates with UN, World Bank, and other estimate sources and national research outputs

Expected Results

- The customized innovative burden of disease theories, concepts, and methods developed
- The national and sub-national burden of disease implementation working guideline developed and executed
- The annual national, sub-national and local burden of disease, and risk factor estimate provided
- Annual national and subnational health atlas produced,
- Epidemiological disease profiles developed
- The produced burden of disease scientific manuscripts, and technical reports on priority health issues
- The established burden of disease collaboration within EPHI and partners
- Strengthened skill and knowledge transition focusing on the burden of disease methods, techniques, and estimates
- Triangulated and synthesized national burden of disease estimates with other data sources
- Became sub-Saharan Africa burden of disease regional hub
- Developed manuscripts and evidence briefs using GBD and other national data sources.

11. Improve Public Health Preparedness and Readiness

Description

Public health preparedness focuses on a full range of prevention, mitigation, and recovery activities, not just those designed to enable responses to events. It encompasses “the range of deliberate, critical tasks and activities necessary to build, sustain, and improve the operational capability - the ability to quickly execute preparedness tasks to prevent, protect against, respond to, and recover from incidents”. Although possessing capabilities requires capacity (infrastructure, personnel, plans, and so on), capacity alone does not ensure readiness. PHEP is not a steady-state; it requires continuous improvement, including frequent testing of plans through drills and exercises and the formulation and execution of corrective action plans. It also includes the practice of improving the health and resiliency of

communities. Moreover, it requires the development of procedures, policies, protocols, and systems; establishment of mutual aid agreements; provision of training; and conducting exercises.

Thus, this strategic direction is about public health emergency preparedness and follows a continuous process of action of governance, capacity resource, partnership, and political commitment for public health emergencies. For the purpose of insuring readiness, those capabilities are targeted and incorporated as public health emergency preparedness: Putting in place the necessary logistics and funding; building the essential systems specific to protection, prevention, response, and recovery ;equipping public health personnel and respondents with the necessary knowledge and tools, and Educating the public on related measures to be taken to prevent and control the event.

Major activity

- Prepare preparedness documents and frameworks
- Establish/strengthen public health emergency management structure at all levels.
- Build leadership capacity for national and regional PHEM staff.
- Strengthen domestic public health emergency financing including the contingency funding plan.
- Develop and implement multi-hazard national public health emergency preparedness and response plan based on vulnerability risk assessment.
- Improve the availability of the necessary logistics (Emergency Supply Chain Management -ESCM)
- Strengthen health facilities and systems readiness for Public Health Emergencies.

Expected Result

- Developed strategic documents of regulations, policies, and mutual aid agreements.
- Established strong and utilitarian public health emergency structures at all levels.
- Improved leadership skills and capacities of regional and national PHEM staffs
- Established functional multi-sectoral coordination platform at woreda levels.
- Allocated budget and other resources enough for implementation of activities planned in the Emergency Preparedness and Response Plan
- Availed required stock amount of emergency logistics and supplies
- Established a strong emergency supply chain management system across all levels
- Improved readiness of health facilities towards responding to public health emergencies

12. Strengthen Diseases and Health Events Surveillance and Information System Management

Description

This strategic direction focuses on activities performed to enhance the timely detection of public health threats and hazards to reduce the impact it poses on the health of the public. Surveillance involves detection, reporting, analysis, interpretation, and use for decision making. In addition to routine disease and health event surveillance data, other sources of data (metrology data, survey data, etc.) are analyzed and used for public health action.

To enhance the detection capacity enhancing/establishing community-based and event-based surveillance systems have paramount importance. On the other hand, scaling up surveillance system through implementing electronic-based and laboratory-based surveillance systems increase efficiency and effectiveness of the system.

Major activities

- Establish a real-time and digital surveillance system
- Establish/strengthen community-based surveillance and EBS system
- Strengthen laboratory-based surveillance system
- Strengthen epidemiological modeling and projection
- Strengthen early warning and risk communication
- Strength public health emergency information management system
- Carry out Data quality assurance for surveillance

Expected Result

- The established real-time and digital surveillance system
- Established and strengthened community-based surveillance system
- The strengthened laboratory-based surveillance system
- Established and strengthened event-based surveillance system
- Strengthened epidemiological modeling and projection

- Strengthen early warning and risk communication
- Strengthened public health emergency information management system

13. Strengthen Prompt Public Health Emergency Response and Recovery

Description

Upon receipt of an alert /rumor, or detection of a deviation of the disease or condition from the expected trend while performing surveillance data or other sources of data analysis, communicate the respective level immediately for verification. Once verified that the outbreak/public health emergency occurred, response activated immediately by the local health system and support provided by the higher-level health system. Required resources including human resources/experts, medical supplies, finance, and other material resources should be mobilized timely. During the response time, essential health service provision should be maintained.

Public health emergencies can have profound impacts on the livelihoods and health of affected populations. Restoring lifesaving services and assisting communities to cope with former and new health threats is a necessity to mitigate the impacts. The actions in response to public health emergencies were also be reviewed systematically. The documented findings will help to guide future public health emergencies as well as enables recovery in a better way to build a resilient system.

Major activities

- Provide timely response to public health emergencies
- Establish quarantine/isolation/treatment centers
- Strengthen post-emergency health system recovery
- Ensure provision of essential health service during emergency
- Establish/strengthen emergency operation centers

Expected Result

- Public health emergencies provided a timely response
- Established quarantine/isolation/treatment centers
- Strong post-emergency health system recovery
- Provided essential health service during emergency

- Established emergency operation centers

14. Enhance Communicable Disease Control at PoEs and Cross Border collaborations

Description

Globalization and resultant human mobility have increased in recent years. Human mobility is a complex and dynamic phenomenon that has been attributed to amplifying the spread of communicable diseases and the impact of public health events. The 2014-2016 Ebola virus outbreaks in West Africa, the 2016-2017 Zika virus pandemic, and the current COVID-19 pandemics have demonstrated the contribution of human mobility in increased public health risk and in turn intensified the need for enhancing global health security. Hence, cross-border communicable disease control has become a more prominent phenomenon to strengthen national health security.

Ethiopia shares a large border size with Eritrea, South Sudan, Kenya, and Sudan, Djibouti, and Somalia and Somali land. Besides, Bole international airport (BIA), the hub for more than 127 destinations, is the passage for millions of passengers and cargo a year. In the presence of such intense and complex traffic of passengers and cargo across PoEs, the task of safeguarding public health safety becomes undoubtedly demanding, requiring coordinated efforts of various sectors present at the point of entry (PoE[18]) and beyond cross-border collaboration.

The International Health Regulations 2005 (IHR-2005) aimed to prevent, protect against, control and provide a public health response to the international spread of disease in a way that is commensurate with and restricted to public health risks, and avoid unnecessary interference with international trade and traffic, provides a framework for countries to build capacities to prevent, detect, and respond to public health emergencies. In alignment with this, the Government of Ethiopia enacted proclamation No.1112/2019 to undertake the regulatory activities related to communicable disease PoE.

Major activities

- Designate and build minimum IHR core capacity requirements at PoE

[18] The IHR-2005 defines a point of entry (PoE) as "a passage for international entry or exit of travelers, baggage, cargo, containers, conveyances, goods, postal parcels, and human remains/ash as well as agencies and areas providing services to them on entry or exit." There are three types of PoEs: an international airport, ports, and ground crossings, which are further classified as designated and non-designated.There are three types of point of entries:International airports, ports and ground crossings

- Strengthen programs for vector control and surveillance systems at the point of entry
- Establish functional cross border collaboration and coordination with neighboring countries
- Develop and implement Public health emergency contingency plan at PoEs.
- Strengthen travelers health service

Expected Result

- Designated point of entries
- Developed minimum IHR core capacity at PoEs
- Strengthened Vector control and surveillance system at PoEs
- Established functional cross border collaboration and coordination
- Implemented Public health emergency contingency plan
- Strengthened travelers health services

15. Strengthen the Implementation of Laboratory Quality Management System and Accreditation

Description

Systematic and coordinated implementation of quality system essentials on laboratory processes and activities across the path of laboratory workflow is key for the provision of quality laboratory services. Implementing all essential elements of laboratory quality management system across all laboratories nationwide through undertaking various initiatives such as the WHO-AFRO Strengthening Laboratory Management Towards Accreditation (SLMTA) and the Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA) including the provision of intensive pieces of training in basic LQMS(Laboratory Quality Management System) to ensure that accurate, reliable and timely results are always readily available and accessible for proper clinical management of patients, public health interventions and research undertakings. Laboratories are evaluated based on relevant ISO standards after the implementation of LQMS, SLIPTA, and different quality improvement initiatives. Upon LQMS implementation and the emergence of accredited laboratories, customers could be satisfied by the provision of services.

Major activities:

- Provide support to implement national and/or international laboratory quality standards
- Provide support for laboratories for the implementation of WHO's Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA) program and other Quality Improvement initiatives
- Provide support to implement basic LQMS across the laboratory system
- Measure customers satisfaction level with laboratory services

Expected Result:

- Accredited laboratory services
- Awarded star level in SLIPTA program
- Implemented basic LQMS
- Satisfied customers in laboratory services

16. Enhance the Standardization and Expansion of Laboratory Services

Description

It describes improving and standardizing the laboratory tests, methods, and technologies across all tiers of the national laboratory system. It also deals with the expansion of laboratory tests for the existing services and the introduction of innovative latest age technologies into the laboratory system. To avail and access laboratory services to all, it works through integration and optimization of laboratory networks for specimen referral and testing services. Furthermore this strategic direction works for our laboratories to be prepared and respond to public health emergencies.

Major activities:

- Standardize and harmonize testing services provided at the different tiers of the national laboratory system
- Introduce new laboratory methods and technologies
- Expand and strengthen laboratory testing capacities
- Strengthen laboratory capability for the detection of emerging/ re-emerging infectious diseases and other hazardous public health concerns.
- Strengthen national laboratory networks and specimen referral linkages

- Ensure standardization of laboratory commodities

Expected Result

- Laboratory tested services
- Established tier-based laboratory standards and tests
- Expanded laboratories services
- Introduced new laboratory technologies/methods
- Uninterrupted laboratory services
- Sustained laboratory commodities

17. Strengthen Laboratory Equipment Management System

Description

This strategic direction intends to manage the system in the technology selection, specification, inspection, site preparation, installation, commissioning, operation, maintenance, calibration, decommissioning, and disposal of laboratory equipment.

Major activities

- Establish a system for laboratory equipment acquisition, inspection, installation, commissioning, decommissioning, and disposal
- Strengthen laboratory equipment data management system
- Strengthen the central and regional laboratory equipment maintenance workshop
- Strengthen system for preventive and curative maintenance of laboratory equipment
- Strengthen system for the provision of validation and calibration of biological safety cabinet, negative pressure, and other laboratory equipment.
- Develop Laboratory equipment management guidelines and manuals
- Establish laboratory equipment calibration center
- Establish national laboratory equipment innovation/ refurbishment center
- Build the capacity of national and regional biomedical engineers and biomedical technicians

Expected Results

- Validated laboratory equipment
- Standardized and harmonized laboratory equipment
- Sustainable laboratory equipment maintenance service
- Well qualified and capacitated biomedical engineer /technicians
- Well managed laboratory equipment data
- Standardized and well-organized maintenance workshop at the regional level

18. Strengthen Biosafety, Biosecurity and Hazardous Waste Management System

Description

Biosafety and biosecurity describe the containment principles, technologies, and practices that are implemented to prevent unintentional exposure to pathogens and toxins or their accidental release. Proper implementation of biosafety, biosecurity principles, and waste management practices following international standards are crucial for the well-being of laboratory personnel, patients, the public, and the environment. There are limited biosafety, biosecurity, and waste management implementation initiatives across all health laboratories in Ethiopia. To improve the biosafety, biosecurity system, and waste management, there should be guidance for evaluation containment, and control of biohazards, categorized as to the degree of risk of infection, good laboratory practices, and safe handling and disposal of hazardous wastes. Besides, there should be a formal regulation governing the registration and certification of health laboratories for the safe storage and disposal of dangerous pathogens and toxins. Thus, systematic and coordinated implementation of Biosafety, biosecurity, and laboratory waste management program and activities across the country is key for the provision of biosafety and biosecurity and hazardous waste management system.

Major activities

- Strengthen the implementation of institutional biosafety and biosecurity programs
- Strengthen laboratory waste management system
- Develop and implement chemical hygiene plan for health laboratories
- Establish and implement regulatory and legal frameworks of biosafety and biosecurity requirements at facilities
- Strengthen risks management system across the laboratory system

- Develop and implement biosafety and biosecurity guidelines and manuals
- Build human resources capacity on biosafety and biosecurity

Expected Results

- Implemented sustainable biosafety and biosecurity system
- Well functional laboratory waste management system

19. Enhance the Implementation of External Quality Assessment (EQA) Schemes

Description

External quality assessment (EQA) is a system for objectively checking the laboratory's performance with an evidence-based comparison of a laboratory testing quality and provides a systematic performance evaluation report as a third party. Organized the coordinated management of EQA schemes execution in different EQA tire system across the country by using various EQA programs through International, national, and Regional EQA and/or Proficiency testing, blind retesting/rechecking, and onsite evaluations which are vital to assure and improve testing laboratories quality service and provide an evidence-based comparison between participating laboratory. Thus, this strategic direction is prepared to enhance and strengthen national EQA management and production capacity for the ease of accessibility to all laboratories nationwide and to fulfill the need for accreditation requirements.

Major Activities

- Establish a national proficiency testing production center in accordance with ISO 17043 standards
- Strengthen national capacity for the production and management of proficiency testing panels
- Enhance EQA utilization and performance improvement
- Establish and implement national electronic Proficiency Testing (ePT) data management program in accordance with ISO 13528 standards
- Establish Biobank centers
- Support the implementation and coordination of Regional EQA systems and schemes
- Strengthen the implementation of random blinded rechecking/retesting and onsite evaluation EQA schemes
- Establish Quality Control and Reference material production center and enhance the utilization

- Facilitate and Coordinate all International EQA programs

Expected Results

- Established and Standardized national proficiency testing panels (PT) production and coordination center
- Standardized, secured, and robust national electronic proficiency testing (ePT) data management program
- Biobanks centers established
- Well-coordinated Regional EQA Schemes
- Well functional and coordinated Blinded rechecking/ retesting and onsite evaluation EQA schemes
- Quality Control and Reference material production center established
- Well-coordinated international EQA Schemes
- Well capacitate and organized EQA Schemes
- Trained professionals on required EQA measures and management system
- Developed EQA guidelines, protocols, and Training material

20. Strengthen the Implementation of Laboratory Information Management System (LIMS)

Description

Robust Laboratory Information System (LIS) is key for effective management of information and data to improve work processes, traceability, turn-around time, data security, and accountability in health laboratories. Proper collection, storing, analyzing, and transferring of health laboratory data is a vital component of laboratory programs and is a valuable source of information for surveillance, M&E activities, and continuous laboratory quality improvement undertakings. LIS is an essential tool to manage the flow of information between health care providers, patients, and laboratories and should be designed to optimize not only laboratory operations but also clinical services.

Major Activities

- Scale up the implementation of LIS and data management system

- Standardize paper-based LIS data capturing, storage, retrieval, analysis, and reporting at all levels of the lab system.
- Implement technologies for real-time communication information/data
- Develop a protocol to ensure interoperability between electronics systems used across HMIS
- Develop and implement device-agnostic/independent connectivity solutions for point-of-care diagnostic machines

Expected Results

- Complete laboratory workflow automated in both regional labs, hospitals, and health centers
- Availability of real-time data for decision making, mentorship, technical support, and maintenance
- LIS system well integrated with HIS, EMR or another point of service applications
- Single point of access for laboratory test results
- Local or institutional capacity to develop and implement a laboratory information system

21. Improve resource mobilization, utilization, and program follow-up

Description

Resource mobilization, utilization, and program implementation are the major focus of leadership and management in generating adequate resources from domestic and international sources, efficient utilization of resources, and program implementation. To achieve these; (i) developing financial resource mobilization strategy with gap identification and resource mapping for community engagement, fostering public-private partnership, advocacy on raising government public health spending share and enhancing international partnership;(ii) developing resource management action plan, timely tracking, effective follow-up, proper documentation, inspections and ensuring proper utilization. For this strengthening grant management system, conduct periodic fund liquidation, supportive supervisions and continuous feedback activities are key actions required. create efficient procurement and logistics management system for proper and emplace tracking mechanism for efficient financial utilization, and develop internal procurement and logistics management guideline to manage public health emergency, and (iii) Strengthening program/project monitoring is to make continuous tracking of effective implementation of planned activities, it includes the development of long term plans (next 10 years), preparation of the annual operational plan, quarterly monitoring of program/ projects ,conducting supportive supervision, making annual review meetings and follow up of scientific and ethical compliance of research projects and condcuting10 years-III midterm and end-term evaluations.

Major Activities

- Develop institutional strategies/plan and conduct M&E activities
- Create community engagement platform, fostering public-private partnership and advocacy on raising government public health spending share.
- Develop large-scale projects for better project management and effective public health outcomes /synergetic effect.
- Develop financial resource mobilization strategic documents to address identified gaps from resource mapping exercises.
- Create efficient procurement and logistics management system for proper and efficient resource utilization
- Develop special procurement and logistics management guidelines to manage public health emergencies.
- Conduct mid-term and end-term evaluations of the Strategic Plan Management (SPM-III) implementation.

Expected Result

- Increased government public health spending share
- Developed large-scale projects
- Mobilized adequate financial resources
- Established efficient procurement and logistics management system
- Regular monitoring and periodic evaluations conducted
- Developed strategic plan Developed annual operational plan
- Reviewed research proposals

22. Improve Institutional Capacity Building

Description

Developing the capacity of the Institute mainly focuses on the three main activities: workforce development, construction of state-of-the-art infrastructure (Laboratories, Warehouses, ICT, Emergency

Operation Centers (EOC), Point of Entry (POE) facilities, and admin complex), communication and organizational structure.

The leadership and management plan to pledge significant investment for developing the capacity of the institute through high take laboratories, advanced ICT and communication platforms, competent expertise with robust organizational structure to realize its mission by creating an enabling environment in quality laboratory management systems, public health emergency management system, and health and nutrition researches.

Major Activities

1. Construction of state-of-the-art facilities

- Construct National BSL-3 and regional BSL-2 laboratories, EOC and POE facilities, admin complex, and modern warehouse.
- Strengthen ICT infrastructure with networking to explore new ways to innovate across the nation
- Digitalize EPHI's operational activities with the latest technology.

2. Strengthen public health workforce capacity

- Develop HR strategy and apply for continuous HR competency enhancement
- Emplace pertinent organizational structure that accommodates contemporary HR management
- Conduct Continuous Professional Development (CPD) and need-based training
- Strengthen field epidemiology training program
- Provide short and long-term training for internal human resource
- Strengthen standardized modular short-term training for the external health workforce
- Establish and run an e-learning training system.

3. Strengthen information communication

- Develop information and communication strategy
- Strengthen the communication system using electronic media and communication platforms
- Provide public health information to the general public through different channels (broadcasted documentaries)

- Conduct advocacy works and makes EPHI's activities visible to the public (website and social media updates)

Expected Result

- Enhanced workforce (internal and external) capacity
- Constructed state of the art facilities
- Public health information reached the general public timely

23. Ensure Institutional Accountability, Transparency, and Good Governance

Description

The leadership works to ensure institutional accountability, transparency, an ethical and public-focused working environment, and good governance. It ensures compliance through citizen charter and development of internal policies/ guidelines for effective, equitable, accessible, safe, and sustainable public health programs which enable to build public trust and assure public satisfaction. It also works to address special interested groups including youth, women, people with disability, etc in all its policies and strategies to ensure inclusiveness.,

Major Activities

- Develop and adhere to citizen charter to ensure transparency, accountability, ethical and public focused working environment
- Develop internal policies/ guidelines to ensure compliance to build public trust and assure public satisfaction
- Mainstream the interests of youth, women, and people with disability into all program implementations

Expected Result

- Internal guidelines, policies, and strategies applied Ensured public trust and satisfaction
- The interests of youth, women, and people with disability addressed
- Implemented reforms and good governance initiatives

24. Strengthen Coordination, Collaboration, and Partnership

Description

The main objective of strengthening coordination, collaboration, and partnership is to create strong allies with national, regional, and international partners and stakeholders to meet the Institute's mission and objectives. It envisages tapping the global development goals that are relevant to the health agenda. To this end, the institute focuses on the following key activities such as identifying key partners/stakeholders, preparing the directory, developing strategy, and establishing/ maintaining a partnership. The leadership works on health diplomacy to foster its longstanding bilateral and multilateral partnerships and engage international and public-private partnerships. EPHI also gives emphasis on the coordination of its mandated thematic areas of national public health research, public health emergency management, and laboratory quality management forums, and One health coordination platform. The t internal coordination platform between directorates and offices is taken as a key focus area in the strengthening of the overall coordination.

Major Activities

- Identifying key partners/stakeholders
- Preparing partnership directory and strategy
- Establishing/ maintaining partnership
- Works on health diplomacy to foster its longstanding bilateral and multilateral partnerships and engage international and public-private partnership
- Coordinate its mandated thematic areas of national public health research, public health emergency management and laboratory quality management forums, and One health coordination platform
- Strengthen the internal coordination platform between directorates and offices

Expected Result

- Established and maintained regional and international collaboration and partnership
- Enhanced/Established and functional joint coordination forums

CHAPTER FOUR

4. PERFORMANCE MEASUREMENT TARGETS

Table 4.1: Targets

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
1	Number of technical report produced	#	68	661	46	52	58	63	68	71	72	76	77	78
2	Number of publications produced in peer-reviewed journals	#	58	810	58	67	72	81	85	86	86	90	92	93
3	Number of scientific evidence dissemination workshops (Thematic area Specific)	#	1	120	8	10	11	12	12	12	13	14	14	14
4	Number of scientific evidence dissemination produced documentary and Broadcasted programs	#	6	100	4	7	9	10	10	10	11	13	13	13
5	Number of evidence synthesis (systemic review, meta-analysis, Health Technology Assessment, Policy brief, scoping review, rapid review, Issue brief, and other in-depth analysis	#	10	436	22	29	34	36	43	47	51	55	59	60
6	Number of books and books chapters	#	0	52	2	2	6	4	5	7	6	5	9	6
7	Number of diagnostics and health technologies assessed, evaluated, and validated	#	N/A	69	4	5	5	5	7	7	8	8	10	10

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
8	Number of food product package disseminated	#	-	3		-	-	1	-	-	1			1
9	Number of disseminated workshops, scientific forums/congress conducted	#	-	9		1	1	1	1	1	1	1	1	1
10	Number of production package formulated and distributed	#	N/A	7	0	2	1	0	1	0	0	2	0	1
11	# of patent and utility model	#	3	7		2	1		1			2		1
12	proportion of evidence-based information generated and disseminated	%	N/A	100	100	100	100	100	100	100	100	100	100	100
13	Number of scientific evidence dissemination conference /congress	#	**3**	5	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**
14	Number of scientific journals produced (Ethiopia Journal of Public Health and Nutrition)	#	**9**	19	**1**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
16	proportion of publication, published in peer-reviewed journals among produced technical reports	%	-	70	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%
17	Number of articles presented in scientific conferences	#	5	180	9	11	13	15	17	19	21	23	25	27
18	# of sub-Saharan countries using EPHI as regional hub for BoD estimate	#	0	34		1	1	2	3	4	5	6	6	6
19	# number of assessment reports of indicators (SDG/HSTP) tracked using burden of disease estimates	#	1	9		1	1	1	1	1	1	1	1	1

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
20	proportion of synthesized evidences based on BoD estimates	%	-	60	30	40	50	50	60	60	60	60	60	60
21	The proportion of developed data science techniques, advanced statistical and mathematical models, and forecasting techniques	%	57.1	80	60	80	82.3	80.6	78.6	79.5	78	78.6	78.5	80
22	Number of developed and/or customized computational tools	#	2	64	3	3	4	5	5	6	8	10	10	10
23	Number of deployed platforms, systems, visualization dashboards and libraries, portals, and data communication channels	#	28	876	49	78	139	237	327	10	9	8	9	10
24	proportion of executed data science techniques, advanced statistical and mathematical models and forecasting techniques	%	50	71.1	60	72	64.7	66.7	66.7	69.2	68.3	69	69.6	71.1
25	Number of data sets archived to the national health data repository	#	262	3565	200	300	350	360	370	380	390	400	405	410
26	Number of data shared to national and international organizations	#	27	1273	66	114	119	124	129	134	139	146	148	154
27	Number of HIS's interoperable and interconnected within EPHI and across regions	#	0	20	2	2	2	2	2	2	2	2	2	2

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
28	The proportion of *Woredas* with functional multi-sectoral coordinating platforms for PHEM purpose	%	0	100	0	25	32	41	52	65	80	89	95	100
29	The proportion of PHEOCs at national and sub-national clusters which are ready for managing potential emergencies	%	100	100	100	100	100	100	100	100	100	100	100	100
30	The proportion of *Woredas* with public health emergency preparedness and response plan.	%	10	100	22	35	50	67	80	95	98	100	100	100
31	The proportion of Regions *Zones* and *Woredas* which allocate adequate resource and budget based on public health emergency preparedness and response plan.	%	0	100	20	30	40	50	60	70	80	90	100	100
32	The proportion of regions and national with appropriate Public health emergency medical supply management system	%	7	100	23	38	62	77	92	100	100	100	100	100
33	proportion of identified potential emergencies with adequate Emergency Drug and Kits (EDKs) and other supplies at national level	%	55	100	72	80	85	89	95	100	100	100	100	100

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
34	The proportion of identified potential emergencies with trained manpower at national and regional levels	%	55	100	72	80	85	89	95	100	100	100	100	100
35	# of Simulation Exercise (Sim Ex) conducted	#	2	20	2	2	2	2	2	2	2	2	2	2
36	# of Health Resource Assessment Monitoring (HRAMs) conducted	#	1	10	1	1	1	1	1	1	1	1	1	1
37	# of Service Availability and Readiness Assessment (SARA) conducted for PHE	#	1	10	1	1	1	1	1	1	1	1	1	1
38	proportion of PH priority diseases / conditions (based on annual VRAM & EPRP document) with updated information's for media and public / community use	%	N/A	100	50%	75%	85%	90%	95%	100%	100%	100%	100%	100%
39	The proportion of media briefs given on major emergencies for the community	%	90	100	100	100	100	100	100	100	100	100	100	100
40	The proportion of public health risks averted identified by VRAM	%	N/A	85	50%	50%	60%	60%	75%	75%	75%	75%	80%	85%
41	# of developed and utilized disease specific outbreak forecasting models	#	N/A	64	2	3	4	5	6	7	8	9	10	10
42	The proportion of forecasted emergencies using the outbreak forecasting models	%	N/A	90	5	20	30	40	50	60	70	80	85	90

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
43	The proportion of health facilities that reported weekly PHEM surveillance report using DHIS-2	%	0%	100	25%	50%	75%	100%	100%	100%	100%	100%	100%	100%
44	The proportion of health facilities which reports weekly diseases to report with 95% Completeness and Timeliness	%	80%	100	85%	90%	95%	100%	100%	100%	100%	100%	100%	100%
45	The proportion of *Kebeles* structures implemented community-based surveillance	%	0%	100	15%	30%	45%	60%	75%	90%	100%	100%	100%	100%
46	The proportion of PH emergencies that were detected through EBS (PPV of EBS)	Percent	15%	95	20%	30%	40%	50%	60%	70%	80%	90%	95%	95%
47	The proportion of *Woreda's* which conducted surveillance data quality monitoring and provide feedback provision with greater than 85% performance	%	0%	100	25%	50%	75%	100%	100%	100%	100%	100%	100%	100%
48	The proportion of Regions with greater than 90 % *Woreda's* reported Non 100,000 under 15 years	%	40%	95	45%	60%	75%	80%	85%	85%	90%	90%	95%	95%
49	proportion of *Woreda's* which reported Non-Measles Fever and rash rates within acceptable range	%	45%	100	50%	75%	90%	100%	100%	100%	100%	100%	100%	100%
50	Number of technical reports that were produced from the	#	2	100	4	6	8	10	12	12	12	12	12	12

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
	integrated surveillance system													
51	Number of publications that were published on peer-reviewed journals from surveillance report	#	2	275	5	10	15	20	25	30	35	40	45	50
52	Number of synthesized evidence-based information that was generated and disseminated for decision making	#		275	5	10	15	20	25	30	35	40	45	50
53	Proportion of synthesized evidence-based information that were utilized by decision making	Percent		95	45%	60%	75%	80%	85%	85%	90%	90%	95%	95%
54	Proportion of functional system (Regular meeting) for timely detection and information sharing platform among stakeholders at national and regional level (Public health, Veterinary and Environmental sectors)	%	N/A	100	0	25%	35%	45%	75%	85%	95%	100%	100%	100%
55	Proportion of alerts that were reported within 30 minutes	%	N/A	95	95	95	95	95	95	95	95	95	95	95
56	Proportion of reported alerts that were verified within 24 hours	%	N/A	95	95	95	95	95	95	95	95	95	95	95
57	Proportion of alerts reported investigated and managed within the standard time	%	N/A	95	50%	75%	85%	90%	95%	95%	95%	95%	95%	95%

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
	(24hr)													
58	Proportion of early warning and alerting messages that were sent for Regions and partners within 24Hrs of verification	%	N/A	95	95	95	95	95	95	95	95	95	95	95
59	proportion of PH emergencies that were identified and confirmed using local laboratory capacity at national and regional levels	%	40%	100	45%	55%	65%	75%	80%	85%	90%	95%	100%	100%
60	Proportion of epidemics that were controlled within the accepted mortality and morbidity rate	%	N/A	85	50%	50%	60%	60%	75%	75%	75%	75%	80%	85%
61	Proportion of post epidemic assessment /After-Action Reviews conducted	%	60%	100	90	100	100	100	100	100	100	100	100	100
62	proportion of affected people who were rehabilitated	%	N/A	85	50%	50%	60%	60%	75%	75%	75%	75%	80%	85%
63	Proportion of damaged health facilities which were reconstructed and rebuilt	%	N/A	85	50%	50%	60%	60%	75%	75%	75%	75%	80%	85%
64	Number of PoEs with minimum IHR core capacities	%	1	13		1	2	2	2	2	2	2		
65	Number of PoEs implementing routine public health measures on human and cargos to the fullest level	%	0	27	-	1	3	3	4	4	4	4	4	

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
66	Number of PoEs with minimum capacity to respond to the cross border Public health emergency (PHEs) or Public health emergency of international concern (PHEIC)	%	0	27	-	-	-	10	-	-	10		7	
67	Proportion of international travelers protected from vaccines preventable diseases (VPDs) by WHO recommended vaccines	%	100	100	100	100	100	100	100	100	100	100	100	100
68	Number health laboratories accredited to relevant ISO standards	#	27	640	27	33	39	45	56	65	80	85	100	110
69	Number of laboratories with SLIPTA 1 star level and above	#	28	1850	85	110	130	155	180	200	210	230	250	300
70	The proportion of laboratories having basic quality management system implemented	%	70	100	75	80	85	90	95	97	99	100	100	100
71	Level of customers satisfaction in laboratory services	%	78.6	100	-	80	-	85	-	90		95		100
72	Proportion of laboratories providing standardized laboratory testing services as per national standard	%	NA	95	-	-	80	82	85	90	92	95	95	95
73	Proportion of laboratories networked to specimen referral linkage and testing services	%	70	100	75	80	85	90	93	95	95	95	100	100

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
74	Number of laboratories with capacity for supporting AMR surveillance (Advanced Microbiology)	#	9	63	5	4	4	4	6	8	8	8	8	8
75	Proportion of major laboratory equipment with less than 5% downtime per year	%	N/A	99	80	85	90	93	95	95	95	97	98	99
76	Proportion of BSC and Negative pressures systems maintained and validated	%	N/A	100	75	80	85	90	95	96	97	98	99	100
77	Proportion of laboratories at which basic biosafety and biosecurity requirements implemented	%	-	90	5	15	25	35	45	55	60	70	80	90
78	Proportion of laboratories enrolled in PT and or Random Blinded Rechecking Schemes	%	-	95	60	70	80	80	80	85	85%	90%	95%	95%
79	Proportion of laboratories with >80 % performance in PT and or Random Blinded Rechecking	%	-	80	-	65	80	80	80	80	80%	80%	80%	80%
80	Number of accredited EQA-PT types per ISO 17043 standards	#	-	58	-	-	-	-	-	4	9	11	14	20
81	Proportion of labs using electronic LMIS that is Interoperable with facilities HIS and national data repository	%	-	60	-	20	25	30	35	40	45	50	55	60
82	Proportion of staffs who were satisfied with the existing transparency and accountability	%	63	95	65	70	75	78	80	82	85	87	90	95
83	Proportion of allocated and	%	65	90	70	75	80	85	90	90	90	90	90	90

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
	mobilized budget													
84	Proportion of utilized budget	%	75	95	75	80	85	90	95	95	95	95	95	95
85	Proportion of procured and availed goods and services (by type)	%	70	95	77	80	85	90	95	95	95	95	95	95
86	Proportion of employees/staffs who achieved best performance score above 95%	%	-	100	80	80	85	85	90	90	95	95	100	100
87	# of internal human resource staffs who took short- and long-term trainings	#	278	2674	103	124	148	178	214	256	308	369	443	531
88	# of external workforce who took Short term training	#	3425	66169	3939	4530	5210	5990	6500	7000	7500	8000	8500	9000
89	# of health workforce trained with CPD program	#	0	5073	250	285	330	380	437	503	578	665	765	880
90	# of standardized modules for short-term & CPD trainings	#	12	450	18	24	30	36	42	48	54	60	66	72
91	# of public health information broadcasted sessions/events channeled to the general public through different channels	#	0	36	0	1	2	2	3	4	5	6	6	7
92	# of forums organized by the institution (disaggregated by wings)	%	**3**	58	**4**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**	**6**
93	# of established regional and international level collaborations and partnerships	#	**1**	13	**3**	**2**	**2**	**-**	**2**	**-**	**2**		**2**	
94	Proportion of maintained	%	**100**	100	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**

N. O	Indicators	Unit	Baseline	10 Years	Year									
					20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/28	28/29	29/30
	collaborations and partnerships													

CHAPTER FIVE

5. IMPLEMENTATION COST AND RESOURCE MAPPING

5.1 Costing

The 5 years projected costs of this SPM III are outlined in the table-7.1 reflecting details of the planned results and investment, the financial resources needed to implement and fully achieve the planned main and specific activities. A bottom-up costing approach were used through identifying the lowest level appropriate activities so as to create a range of estimates, covering the scope based on the activity definition available with align their targets. The Strategic Plan Steering Committee provided herein cost estimates for each of the Strategic direction, major activities and Initiatives.

After collect assumption we use One Health Tool (OHT) to integrate the planning process to the result in terms of system outputs and predict health outcomes and impacts. Assumptions used are the required staff in placed, facilities and equipment availability and required desired targets, disease profile and their outbreaks frequency, advance laboratory technology & service and the required technology with a medium level scenario.

The total cost estimation is 1.7 Billion USD for the next five years. As indicated in the below table7.1 for Research, evidence synthesis and production package innovation 0.32 Billion USD (18.4%), Digital health data science analytics and information system 0.033 Billion USD (1.9%), Resilient Public Health Emergency Management 0.35 Billion USD (20.2%), sustainable and resilient laboratory system 0.63 Billion USD (36.1%), and Core Public Health Capacity development 0.41 Billion USD (23.4%) are the estimated cost for the next the five years. After endorse this SMP-III separate document will be prepared to map the budget source and utilization strategies.

Table 5.1: SPM-III Summary cost (USD) in Year

S.N.	Strategic direction	Unit	Total cost	Cost per year in USD				
				2020/21	2021/22	2022/23	2023/24	2024/25
1	Advance evidence and knowledge translation for evidence informed decision.	USD	28,580,382	5,249,047	5,884,271	5,902,011	5,598,513	5,946,540
2	Enhance communicable and non-communicable diseases Research and Surveillance	USD	67,654,133	12,176,773	12,533,370	13,917,238	13,274,634	15,752,118
3	Improve traditional and modern medicine research and development	USD	64,690,000	11,747,993	12,036,520	13,339,718	12,601,250	14,964,518
4	Strengthen research and surveillance on nutrition, food science and food safety	USD	53,238,064	9,607,907	9,874,075	11,165,807	10,436,640	12,153,635
5	Strengthen Research and Evaluation on Health system, policy, program, and strategies	USD	42,987,056	8,329,557	8,524,110	8,626,505	8,204,612	9,302,273
6	Improve research and development, for Local Vaccines and Diagnostics Production	USD	36,885,247	7,041,991	7,210,202	7,391,320	7,137,833	8,103,901
7	Improve Health and Nutrition Technology Transfer	USD	28,608,074	5,231,010	5,990,447	5,718,739	5,528,581	6,139,296
8	Enhance national health data repository, data security systems and strong data governance systems and maintain database interoperability	USD	4,338,911	541,342	677,606	928,046	1,067,077	1,124,839
9	Advance public health data science Computational Methods, statistical and mathematical Modelling and visualization techniques	USD	24,728,703	2,863,796	2,292,734	13,302,031	3,099,353	3,170,788

S.N.	Strategic direction	Unit	Total cost	Cost per year in USD				
				2020/21	2021/22	2022/23	2023/24	2024/25
10	Strengthen national, sub-national and local burden of diseases estimate using health metrics measurements	USD	1,779,432	131,492.86	498,141.86	421,958.91	400,395.45	327,443.05
11	Improve public health preparedness and readiness	USD	64,640,235	12,703,011	12,558,984	12,788,016	13,499,797	13,090,427
12	Strengthen Diseases & Health events surveillance & information system management	USD	85,588,808	16,283,002	16,690,077	17,107,329	17,535,012	17,973,388
13	Strengthen prompt public health emergency response and recovery	USD	156,912,813	29,852,170	30,598,475	31,363,436	32,147,522	32,951,210
14	Improve Point of Entries health and cross boarder collaborations	USD	42,794,404	8,141,501	8,345,039	8,553,664	8,767,506	8,986,694
15	Strengthen the implementation of laboratory quality management system and accreditation	USD	102,391,758	16,724,978.00	20,019,073.67	20,115,760.67	20,625,231.83	24,906,714.17
16	Ehance the Standardization and Expansion of Laboratory Services	USD	104,391,758	17,124,978.00	20,419,073.67	20,515,760.67	21,025,231.83	25,306,714.17
17	Strengthen laboratory equipment management system	USD	115,071,758	17,604,978.00	21,819,073.67	21,915,760.67	24,725,231.83	29,006,714.17
18	Strengthens Biosafety, Biosecurity and Hazardous Waste Management system	USD	97,391,758	15,724,978.00	19,019,073.67	19,115,760.67	19,625,231.83	23,906,714.17
19	Enhance the Implementation of External Quality Assessment (EQA) schemes	USD	102,391,758	16,724,978.00	20,019,073.67	20,115,760.67	20,625,231.83	24,906,714.17
20	Strengthen the implementation of Laboratory Information Management System	USD	104,891,758	17,224,978.00	20,519,073.67	20,615,760.67	21,125,231.83	25,406,714.17

S.N.	Strategic direction	Unit	Total cost	Cost per year in USD				
				2020/21	2021/22	2022/23	2023/24	2024/25
21	Improve resource mobilization utilization and program follow up	USD	41,463,630	5,622,688	6,838,731	8,294,791	9,667,498	11,039,922
22	Develop public health Capacity	USD	283,055,987	44,927,201	170,368,225	21,356,291	22,627,748	23,776,522
23	Ensure institutional accountability, Transparency, and good governance	USD	41,627,229	5,783,688	6,795,531	8,186,791	9,649,498	11,211,722
24	Strengthen coordination, collaboration, and partnership	USD	40,509,384	5,475,052	6,645,162	8,085,055	9,473,929	10,830,187
	Grant Total cost	USD	1,736,613,041	292,839,089	446,176,142	318,843,312	318,468,789	360,285,709

5.1.1 Research, Evidence synthesis and technology Innovation Costing estimation

Research, evidence synthesis and technology innovation cost estimation assumptions relay on number of researches, evidence synthesis and Surveillances will be conducted, required amount of human resource, and health information infrastructure are the major one. To create the best assumption we grouped the research activities as large scale research estimated 3,010,000 Used per single study (this is cross-sectional research which cover all of country location and consumed large amount of budget and human resource for data collection and other activities and have more detail variables) medium scale research estimated cost 785,000USD per single study (this is cross-sectional research which cover a part of the country or a single variables, consumed medium amount of budget and human resource) Mini scale researches estimated 35,000 USD, Surveillances estimated for singe study 170,020 per single study, evidence synthesis 50,000 USD per single study. Generally for research, evidence synthesis and technology innovation estimated cost is 0.32 Billion USD.

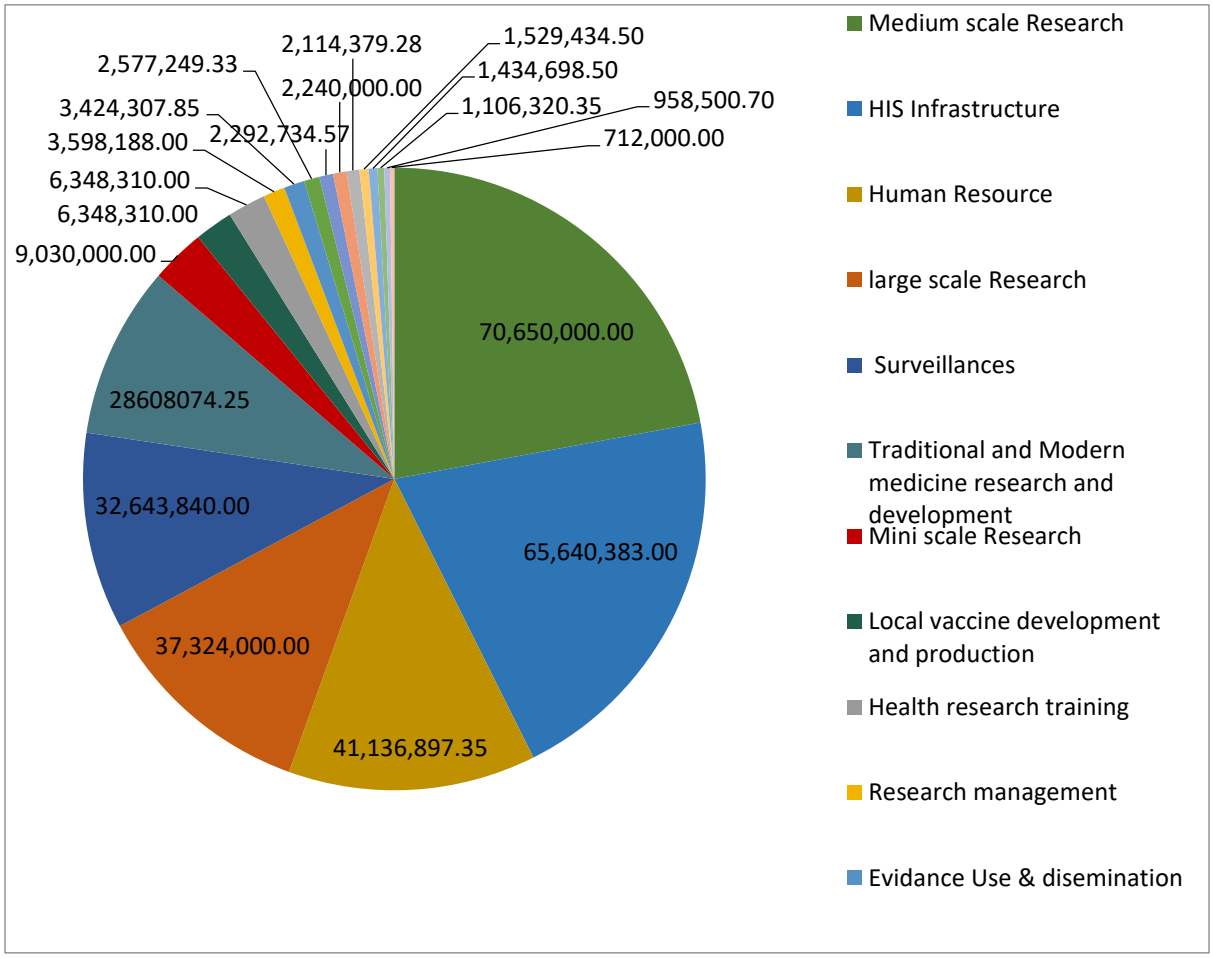


Figure 5.1.1: Research, Evidence synthesis and technology innovation cost estimation

5.1.2 Digital health data science, analytics and information system

The Institute digital health science, analytics and information management activities started since 2017 through establishing National Data management Center (NDMC). The center estimated the trough bottom up approach. The overall value by approximating values for smaller components and using the sum total of these values as the overall values. Hence, the strategic objective Digital health data science, analytics and information system estimated cost for the next five years is 0.033 billion USD.

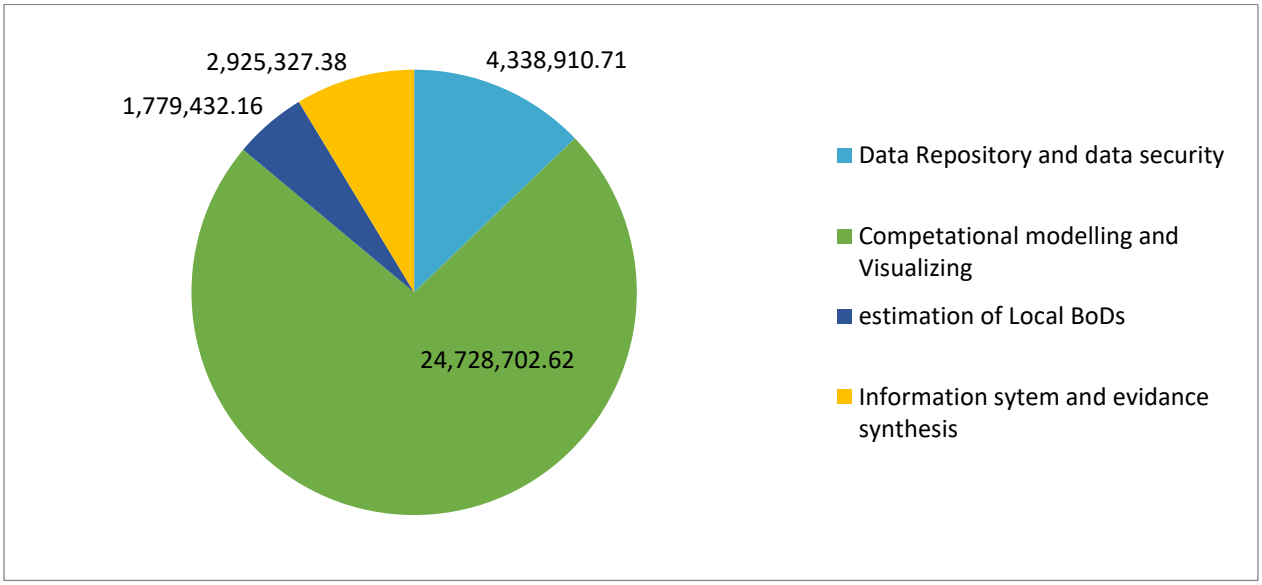


Figure 5.1.2: Digital Health Data science, analytics and Information System cost estimation

5.1.3 Public Health Emergency Management Cost Estimation

The Public Health Emergency management part cost is estimated by using the one health tool of both program and intervention cost. The program cost was estimated using the assumption number of human resources required in different disciplines and required supplies for each expert, required training and its cost per individual, general operational costs like utility costs and media & communication cost assumption are included. The total estimated cost for Resilient Public Health Emergency management for strong national health security for the next five year is 0.35 Billion USD, see below figure 5.2. From total cost estimation 82% ((285,296 026.14 USD) is for 21 diseases and health events surveillance, outbreak investigation, and response activities.

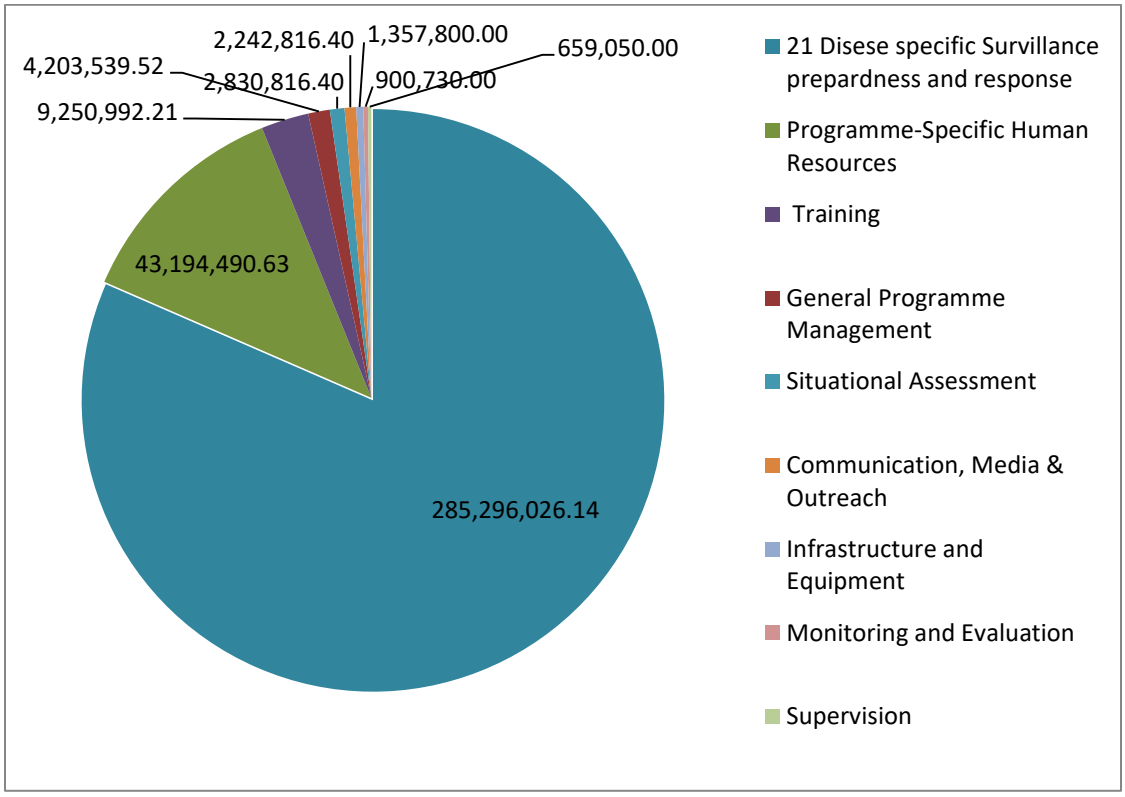


Figure 5.1.3: Public Health Emergency management cost estimation

The intervention cost for the 21diseases and events were estimated by assessing evidence (kinds of literature) to know the prevalence of each disease and event, targets population (In both age and sex), and finally, calculate the number of peoples who needed intervention for each disease and event. Finally, when we know the total population we calculate the required drug, manpower and other supplies needed and convert them automatically to cost and multiply it by the total population needed.

For the intervention of 21 diseases and health events Surveillance, preparedness, early warming, outbreak investigation and response cost, the highest proportion of the estimated cost is severe

malnutrition which have 2% of prevalence (both sex and 1-59 month or under five child) surveillance outbreak investigation and response estimated cost is 60,488514.9 USD (21%), followed by malaria (have 60% risk area) surveillance outbreak investigation and response 52,911, 230.25 USD (19%). See figure 5.3.

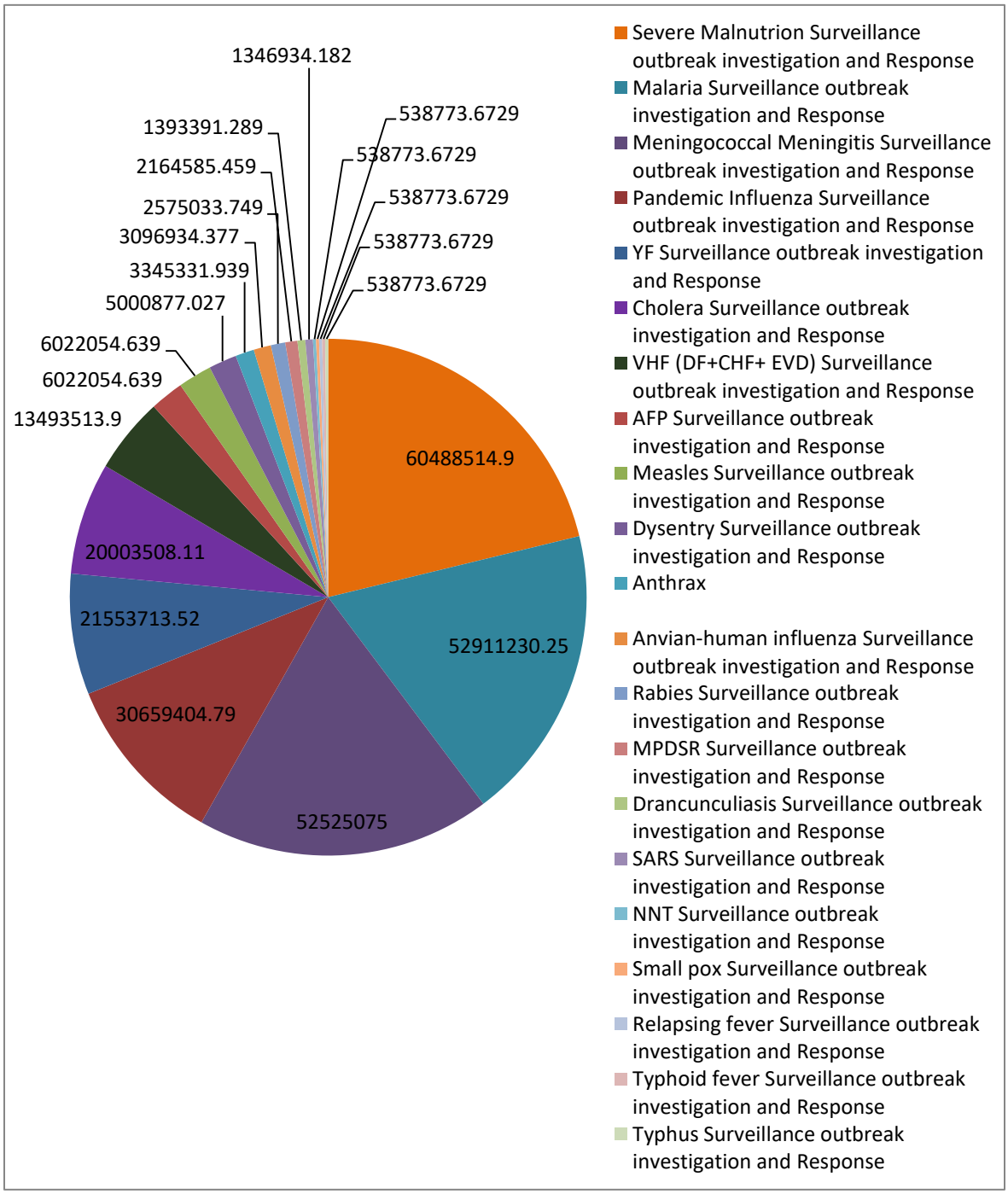


Figure 5.1.4: disease and Health event intervention cost estimation

5.1.4 Sustainable and resilient laboratory system

For the objective building sustainable and resilient laboratory system cost was estimated using OHT program costing, cost assumption used in this estimation is required amount of workforces and its supplies, number of facility laboratories and needed laboratory equipment and machines, laboratory services for each tiers, the client demand and operation cost. The total estimated cost is 0.63 Billion USD see figure 5.4

From the total estimated cost the major one is laboratory infrastructure and equipment, training and human resource cost accounts 317,560650 USD, 182890396 USD and 16,262,471 USD respectively.

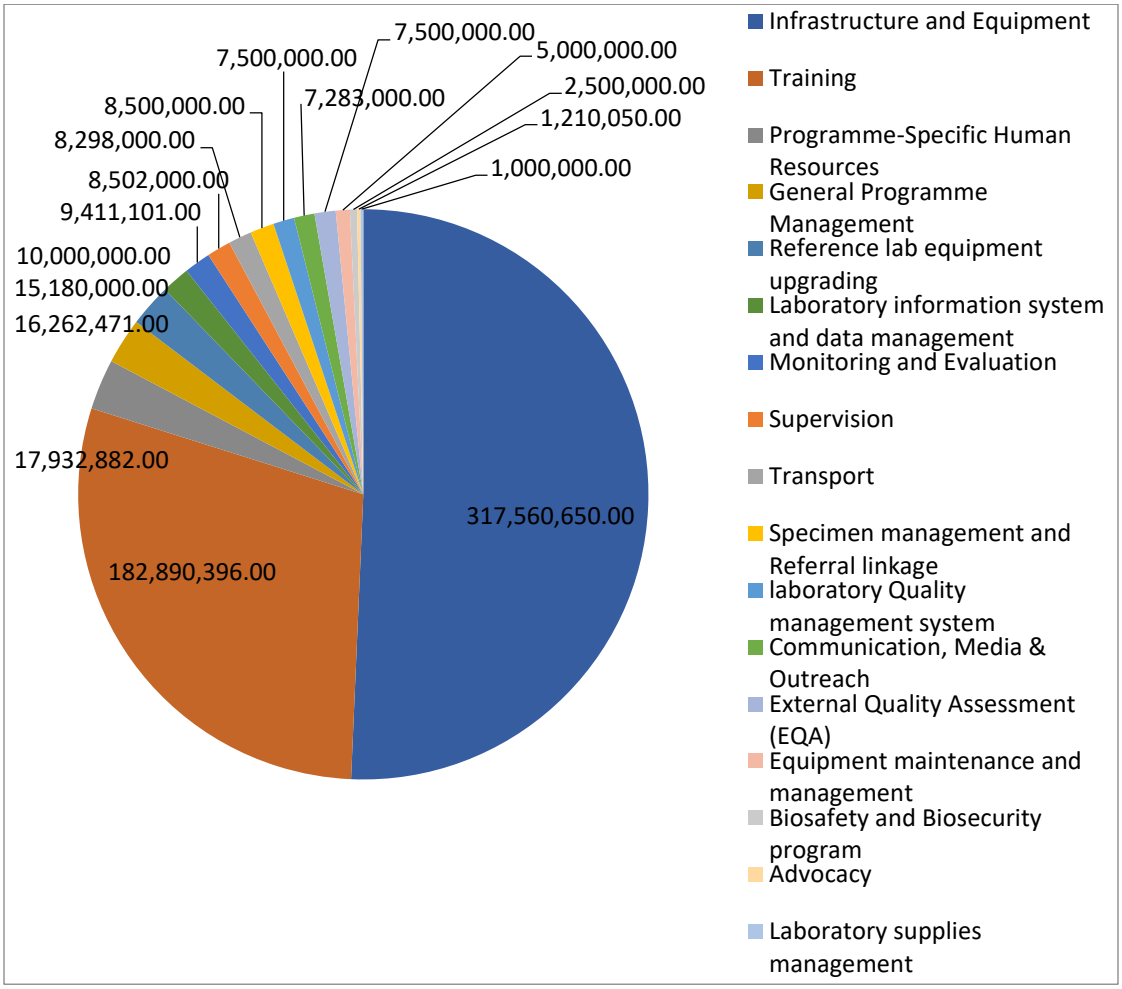


Figure 5.1.5: building sustainable and resilient laboratory system program cost estimation

5.1.5 Core Public Health Capacity development

Core public health Capacities are Leadership & Governance, Organizational structure and Reforms, Workforce, Program implementation, and follow-up, Information communication, Financial Resource, and Partnership alongside Country-specific policy have an indubitable role to become a center of excellence in public health. Therefore for cost estimation, we use OHT of program costing and its estimated 0.41 Billion USD.

The major estimated costs are Infrastructure and Equipment, Transport including Vehicles and their operation cost, and communication and media cost which expected to establish media production studios 150,779,400 USD, 143,482,500 USD, and 88,849,000 USD respective estimated for the next five years.

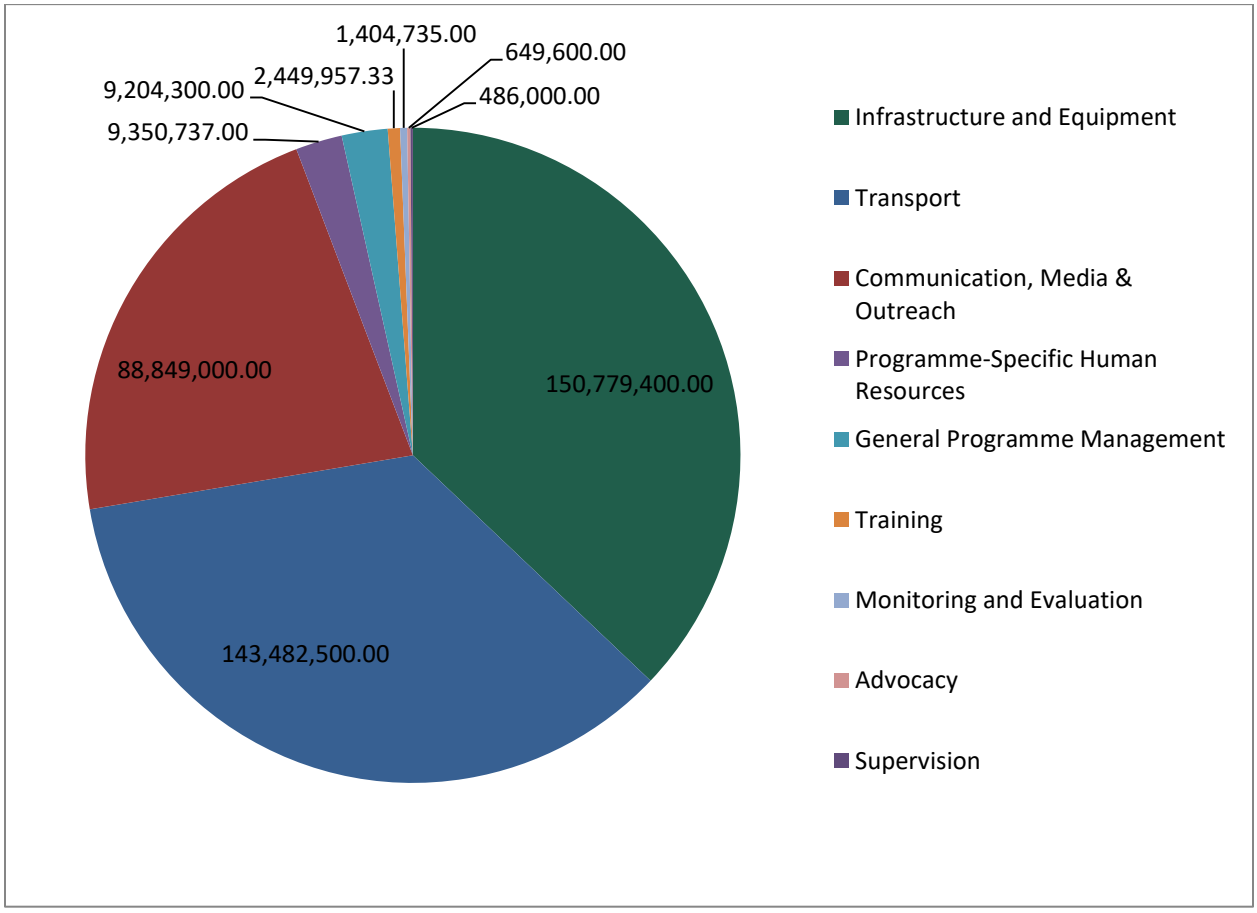


Figure 5.1.6: Core public Health Capacity development program cost estimation

CHAPTERSIX

6. IMPLEMENTATION STRATEGIES

The implementation arrangement of this SPM-III follows create vibrant leadership at all level: conduct periodic revision of its backbone function or structure conforming to this strategies demand: share a common agendas of public health for corresponding stakeholders: form consistent and open communication platforms to build trust, assure mutual objectives, and create common motivation: Support the establishment of EPHI replica in regional administration: coordinate various activities through a mutually reinforcing plan of action and sharing of tasks: and ensure accountability and transparency through conducting joint supportive supervision, organizing experience sharing workshops, documenting best experiences and creating learning mechanisms, conducting joint end-term and mid-term evaluations.

6.1 First Stage of Arrangement

After approval of this SPM-III, there will be a formal communication and orientation to stakeholders ensuring sense of ownership and tracking of aligning and implementations of their activities. Further in rolling out the plan and successful implementation of the activities, each wing and directorate of the institute will develop detail operational or implementation plan every yea. Fasten on the legal mandate given to EPHI and RHBs/Regional public Health institute, the implementation arrangement will be extended from least formal legal structure, possibly championed by public-sector staffs, resources and a voluntary joint communication to institutional arrangements move through the spectrum of the legal implications become much more formalized.

In the first step of the arrangement, EPHI will build consensus on the plan by formulating task forces and committees; increase visibility and awareness; share information; advocate and educate.

6.2 Second Stage of Arrangement

The second arrangement will have feasibility assessment of specific projects with their major activities, prioritization of demanding activities, aligning the activities with the existing functional structures, resource mapping and mobilization create public Private partnership, identify & sign agreements with potential collaborators and stakeholders for mutual benefits.

6.3 Third Stage of Arrangement

The last arrangement will be the full implementation of the activities and measurement of performances (Evaluation), reporting and make continuous monitor and give feedbacks.

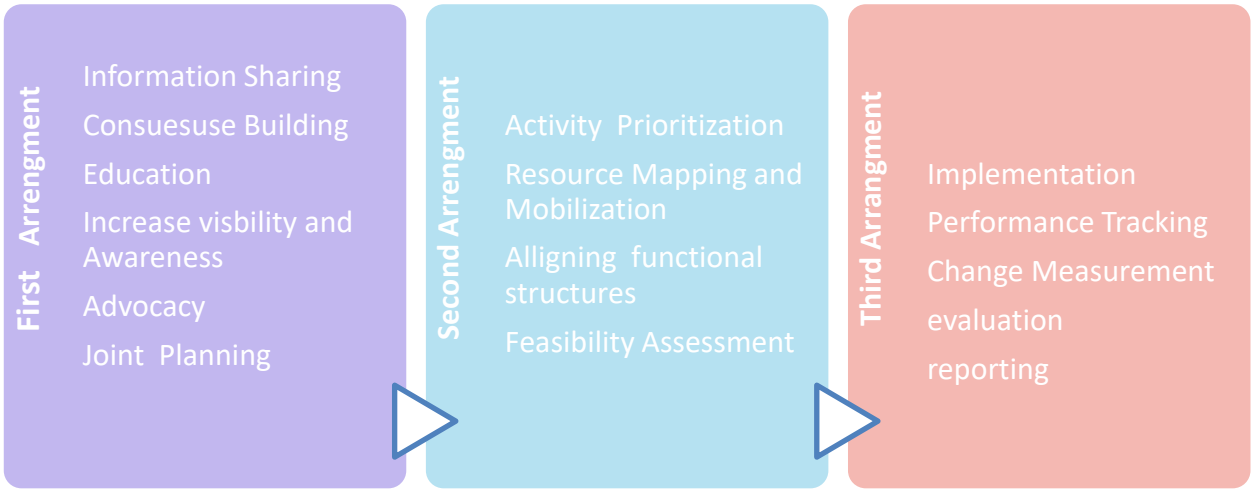


Figure 5.1 EPHIs SPM-III implementation arrangement stages

Thus, to create enabling environments at regions for public Health issues the institute will utilize the existing structures of the health system and the final vision will be to support the RHBs to establish their own Public Health Institutes. So far the four regions (Amhara, Tigray, Afar, and SNNPR) established their institutes while the rest five regions (Oromia, Somali, Gambelia, Harari, and Beneshangule-Gumez) and two city administrations (Addis Ababa and Dire-Dawa) will continue the realize public health institute. Further, the RHBs and public health institutes will develop their strategic planning and management align with this SPM-III as the main benchmark and source of pathways.

6.4 Annual Planning and budget:

The implementation of this SPM-III will follow one plan, one report, and one budget principle through cascading it into the annual plan and quarter-based reporting mechanize. The annual planning and performance measurement will follow the overall institutional planning and M&E framework with clearly designed templates for planning and the Microsoft Power Bi reporting mechanism. For planning as well as reporting the institute will utilize both Top-Down and Bottom-Up mixed approach which that a variety of governmental directions will follow Top-Down to the bottom institute leadership and experts and reporting will start at the grassroots level and will consolidate it to the institutional level. Finally, Performance review also conducted regularly.

6.5 EPHI and Regional Bureaus / Reginal Public Health Institute Joint planning

To promote the annually cascaded activities EPHI and the regional health Bureau (reginal public Health institute) will be organized and undertake joint planning and activity aliment workshop and session. At the higher level, there is room for creating a high-level public health institute Joint Steering Committee, preferably chaired by the EPHIs Director General or his representative and composed of top-level Public Health institute DGs and each wing Directorates and experts; representatives of the program Planning, Finance and other selected partners; representatives of any other stakeholders, group or associations that might be considered relevant. The PHJSC will provide overall guidance for the preparation of the sector wide public health plans, select priority programs allocate resources across different development components. serve as a linking mechanism between the public health institute and the major partners in in the public health development.

6.6 Advisory Board:

As clearly indicate von the institute regulation high level advisory board will be established and will prepare its working guide and the main goal will be advise the Institute in respect of policy, strategy and other major institutional Research, evidence synthesis and technology innovation, Public Health emergency management, digital health data science, building sustainable and resilient laboratory system, and core public health capacities issues.

6.7 Management Committee:

This is the highest governing body at the Institute that include Director Generals, Deputy Director Generals and all directorate Directors; that guides, oversees, decides, and facilitates the implementation of this SPM-III. They regularly meet every two weeks to get progress updates, coordinate activities, evaluate planned vs achievements, discuss challenges and decide on major institutional issues, create suitable working environment, identify major gaps and provide support to alleviate challenges. This governing body is responsible for failure or weakness in achieving institutional objectives.

6.8 Joint Partnership Coordination Forums

This is a forum working for all sections/wings that the forum will chaired by the institute Director General or Deputy Director General and will have clearly defined and selected participants from stakeholders, Regional Health Bureaus, Regional Public Health Institutes and other relevant. The forum will support and give guidance on the major performances, review reports and give feedbacks on a key program performances and guide on necessary challenges solutions.

6.9 Scientific Congress:

The high-level scientific conference of the institute to acquaint the institute's stakeholders, the scientific community, and the public at large on major achievements of the institute, and to create the platform to exchange views on research, evidence synthesis and technology innovation, Public Health emergency management, digital health data science, building sustainable and resilient laboratory system, and core public health capacities among professionals to strengthen national health research and public health intervention. The institute will be organized a scientific Congress every two years on the regular basis.

6.10 Community /Good-governance forum:

This is a forum established by the Institute among the communities, association and stakeholders. The forum will address the good governance issues in the community

perspectives and will be meet every year. And also, it used as one form of community engagement that particular projects/programs require.

6.11 Risks and Mitigation

The implementation of this SPM-III may encounter risks that may hamper the achievement of expected results. The risks are identified through SWOT and stakeholder analysis. In order to mitigate the major risks that EPHII may face, mitigation strategies are identified. The following table summarizes the major expected risks and its mitigation strategies.

Table 6.1: Risks and mitigation strategies

S.N	Risks	Mitigation Strategy
1	Emerging and re-emerging epidemics and local displacement	• Early warning and preparedness for emerging epidemics and local displacement before occurrences. • Early detection of epidemics and avoid its expansion if they occur.
2	Competition of other research institution and organization including universities.	• Increase institutional visibility through participating on international forum and consortia projects to attract more potential collaborators • Improve quality of research to be more competitive • Improve institutional capacity both in human capital and research facilities
3	Reduction of funding due to COVID-19 crises and other computational issues	• Advocate policy makers to increase research fund from the government budget • Compete and attract international research fund • Developed and implement private -public partnership system to encourage private sector in participating on local vaccine development, traditional medicine development nutritional product package development and domestic finance mobilization • Exploring potential core funders to Borden funding opportunities
4	Delay foreign procurement	• Strengthen institutional procurement system through developing and implementing automated supply chain management • Advocate Custom authority and FDA to give due attention for procured foreign reagents and consumables • Collaboration with International NGOs who can support us by supply • Early requirement of supply for procurement before stock out

S.N	Risks	Mitigation Strategy
5	Weak inter-sectorial collaboration	• Work closely with line agencies and other stakeholders to collaborate in addressing challenges in laboratory equipment & infectious disease outbreak supplies. • Development of forum for discussion of stakeholders
6	Slow national clinical trial regulatory and ethics review system	• Advocate MOH to strengthen national clinical trial regulatory and ethics review system • Establish clinical trial regulatory and ethics review system in collaboration of MOH and Universities and assign responsible body for process
7	Weak assurance of biosecurity and biosafety	• Establishing and implementing good Biosafety, laboratory biosecurity and bio containment practices • Trained the workforce on biosafety, biosecurity and bio containment practices, and monitor it
8	Researchers and expertise Low salary scale and benefit packages	• Advocate EPHI, MOH, stakeholders and Minister of Finance to consider other allowance and benefit packages to reduce turnover of trained man power. • Maintain other compensatory benefit by involving them in projects

CHAPTER SEVEN

7 MONITORING AND EVALUATION FRAMEWORK

This Monitoring and Evaluation Section includes the main M&E components of the strategic plan. Detailed descriptions, definitions, indicator matrix, and other components are broadly described in a separate "Monitoring and Evaluation of the SPM III" document.

7.1 Monitoring and Evaluation Framework

This M&E framework is meant to guide the monitoring and evaluation of the performance of SPM III implementation. The logic model is based on the Ethiopian health system framework and adaptation of the recent WHO's Monitoring and Evaluation framework. It includes the logical relationship from health system inputs to outputs to outcomes and then ultimately to impact. It is depicted in the figure below.

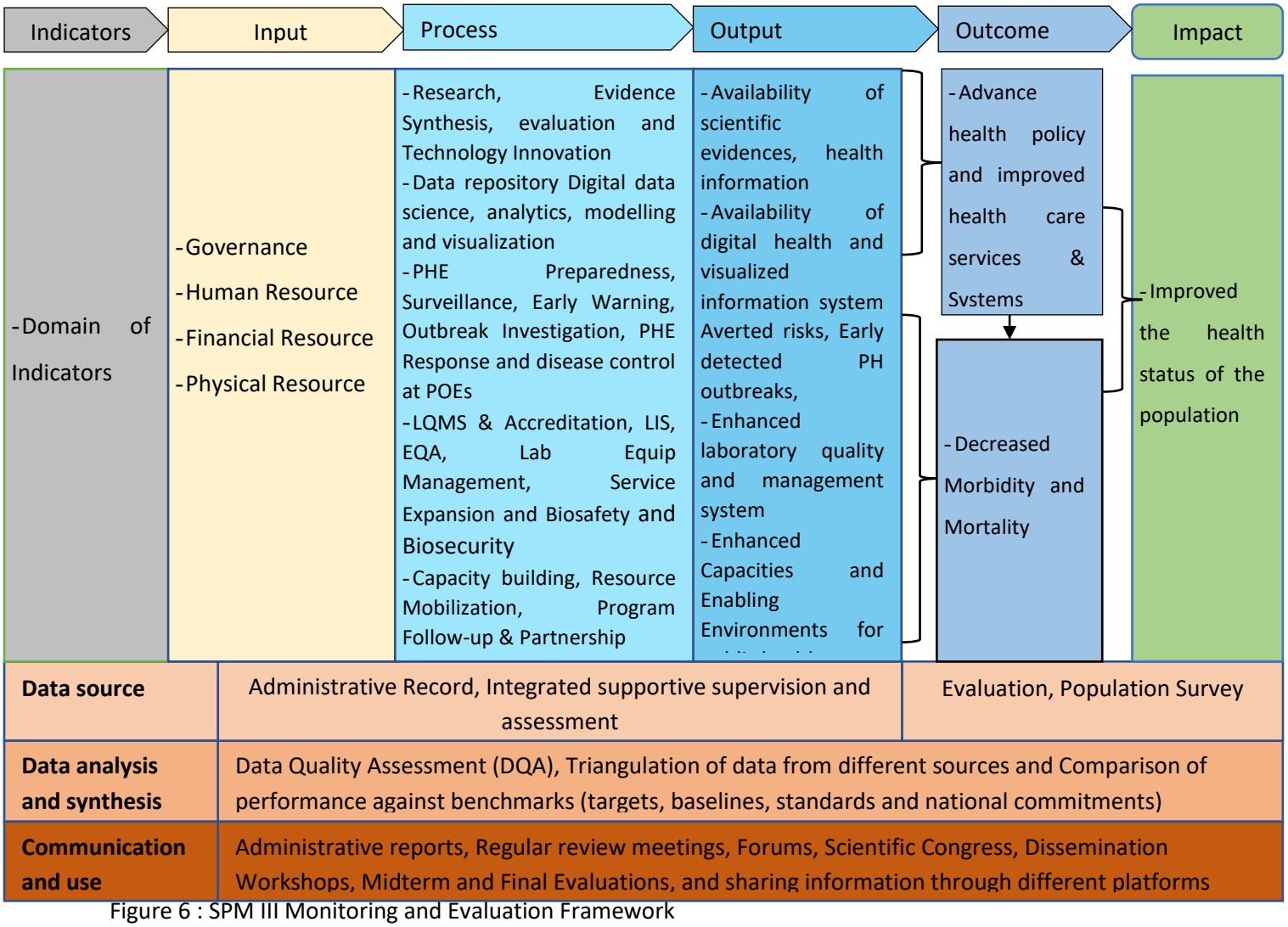


Figure 6 : SPM III Monitoring and Evaluation Framework

7.2 Indicators

In this SPM-III, 94 core indicators are identified to monitor and evaluate and have Impact, Outcome, Output, and Input indicators are selected in a balanced way. In selecting the indicators, thoroughly defined selection criteria were used. These criteria include but are not limited to relevance, availability of data source, measurability, sensitivity, national and international priority health interventions, and requirements. The indicators have baseline and targets.

The period for data collection and analysis varies for each indicator, ranging from a monthly basis up to 5 years. Some indicators are analyzed on a monthly basis, others on a quarterly, annual, 2-3 years, and 5 years' time. The process indicator setting was participatory, with an iterative and consultative engagement of program experts and stakeholders. Learning from SPM II lessons, efforts have been made to make the targets realistic.

7.3 Index measurement in SPM III

Health Security Index

The health security index is measured by IHR core competencies that are organized under four major health security domains (Prevention, detection, response, and others). A health security assessment will be conducted on a yearly basis to increase the health security index from 0.4 to 0.78 within five years.

7.4 Transforming data into information and action: the data cycle

The cycle includes how data is gathered, analyzed, interpreted, reported, shared, and used in decision-making. This section will describe the components of a data cycle. To address the requirements for M&E of the SPM III the data analysis, summarization, visualization, and progress tracking will be augmented through the development and use of digital tools known as Power BI. Power Bi is a tool we will used as a routine data collection, analyzing, visualizing of the activities.

7.4.1 Data sources

The common data sources used to measure and inform SPM III include administrative record facility-based assessments, population-based surveys, Researches, and others.

7.4.2 Data quality

Improving the quality of data for a meaningful decision-making process will be a focus in this SPM III. Interventions will be designed and implemented in order to tackle technical,

organizational, and behavioral factors affecting the quality of data. Improving data quality requires the effort of every actor in the health sector primarily every health worker as well as the comprehensive implementation of techniques for improving data quality.
Data quality-assurance techniques will be implemented holistically at each level of the health system. As part of the external verification process and to enhance reliability and credibility, a data quality audit (DQA) will be conducted every two years.

7.4.3 Reporting

SPM III will regularly be assessed and reported the implementation status using different mechanisms to ensure accountability for quarterly based annual administrative and scientifically approved evaluation reports. To create routine data collection and presenting it the institute will Microsoft Power Bi software for digital reporting and visualizing system.

7.4.4 Use of information for action

Improving data demand, information culture, knowledge management, learning, and the capacity to change data into meaningful information and use it for action will be a priority.

7.4.5 Performance review

A consistent and participatory performance review will be undertaken every quarter at different levels. In the performance review session, all relevant stakeholders will invite to review the institute's performance. Each wing also will carry out their performance review regularly.

7.5 Evaluation

Evaluation of the SPM III will be undertaken at mid-term (2024/25) and end-term (2029/30) to assess the status of attainment of set objectives and targets. The mid-term evaluation will assess progress towards achievement of results and generate lessons learned, while the end-term will inform the development of the subsequent strategic plan. Generally, the purpose of our evaluation will be to improve programs, for accountability and knowledge generation.

7.6 Dissemination and communication

Monitoring and evaluation findings will be disseminated to stakeholders using different platforms. Monthly, quarterly and annual reports will be produced and submitted to the relevant stakeholders. EPHI will strengthen electronic outlets, such as the website and social

media, for the dissemination of results. Furthermore, documentation of best practices and dissemination of results will also be promoted.

REFERENCE

1. Motani, P., Van de Walle, A., Aryeetey, R. *et al.* Lessons learned from Evidence-Informed Decision-Making in Nutrition & Health (EVIDENT) in Africa: a project evaluation. *Health Res Policy Sys* **17,** 12 (2019). https://doi.org/10.1186/s12961-019-0413-6
2. www.worldometers.info/world-population/population-by-country/
3. Central Statistics Agency. Accessed at http://www.csa.gov.et/images/banners/csa2
4. WHO PHE Management Cycle Framework
5. United Nations Chief Executive Board, 2017
6. *Kruk et al., 2015 availablehttps://www.researchgate.net/publication/317118883_Building_resilient_health_systems_A_proposal_for_a_resilience_index.*
7. World Health Organization 2018, Primary Health Care and Health emergencies
8. https://cdn.ymaws.com/www.cste.org/resource/resmgr/CD_Toolkit/Chapter_5.pdf
9. Leung, C.L., Naert, M., Andama, B. *et al.* Human-centered design as a guide to intervention planning for non-communicable diseases: the BIGPIC study from Western Kenya. *BMC Health Serv Res* **20,** 415 (2020). https://doi.org/10.1186/s12913-020-05199-1
10. Locke, R., Castrucci, B. C., Gambatese, M., Sellers, K., & Fraser, M. (2019). Unleashing the Creativity and Innovation of Our Greatest Resource-The Governmental Public Health Workforce. *Journal of public health management and practice : JPHMP*, *25 Suppl 2, Public Health Workforce Interests and Needs Survey 2017*(2 Suppl), S96–S102. https://doi.org/10.1097/PHH.0000000000000973

Annexes

Annex Table 1: EPHIs Stakeholder Analysis

Stakeholders	Behavior we desire	Their needs and interests	Why is the information required?	Resistance issues	Institutional Response	Influence level
Community /citizens (01)	Participation, ownership, full information	Equal access Transparency Efficient service Accountability and effective use of public property Public health risk communication	To improve our services and to gate trust. To Preserving the value of the people	Poor image, dissatisfaction, inefficient, unproductive	Ensure participation, equitable service quality service	High
Customers (02)	Involvement, Engagement, Ownership and Healthy lifestyle	Good governance Access to evidence-based health Information and service Empowerment	To improve customer services and customer satisfaction	Dissatisfaction Opting for unsafe alternatives Underutilizatio n	Advocacy, Ensure participation, Quality and Equitable service and Information	High
The house of People' Representatives (Parliament) (03)	Ratification & Approval of policy, regulation Plan and performance. Follow up and support.	Implementation of policy, regulations, and strategic plan. Quality and Equity plan and implementation, Good governance, Accountability and timely accomplishments with the report Urgent public health event regulations	Compliance and Protection of Government Directives and Regulations To be accountable for our actions.	Administrative measures. Institutional restructuring. Leadership and experts reshuffled	Put in place a strong M&E system & comprehensive capacity building mechanisms	High.
Federal Ministry of Health (MoH) (04)	Approval of Plan and performance. Follow up and support.	Implementation of the strategic plan. Equity and quality plan and implementation, Good governance, Accountability and timely accomplishments with a report	Compliance and Protection of Government Directives and Regulations To be accountable for our actions. For better evidence-based decisions.	Administrative measures. Institutional restructuring. Leadership and experts reshuffled	Put in place a strong M&E system & comprehensive capacity building mechanisms Establish feedback mechanism	High.
Ministry of Finance (MoF) (05)	Resources allocation, performance follow up and support	Output-based resource allocation. Report for all allocated resources and budget.	Compliance and Protection of financial Directives and guidelines To be accountable for our actions.	Poor budgeting. Poor resource use. Underutilizatio n.	Good Program budget plan and report. Accountable and good financial regulation	High.

Stakeholders	Behavior we desire	Their needs and interests	Why is the information required?	Resistance issues	Institutional Response	Influence level
					protection	
Civil Service Commission (06)	Approval of Institutional Structure, standardize workforce, Positional level, Workforce incentives and attrition mechanism	Good governance of workforce, Civil service guidelines & manuals. Job specification and description.	Compliance and Protection of workforce Directives and guidelines To be accountable for our actions.	Administrative measures using the administrative court. Hold institutional structure and workforce position	Institutional Structure, standardize workforce, Positional level,	Medium
Ministry of Science and Higher Education (MOSHE) & Universities (07)	Development of workforce, Short term training Collaboration in research	Job Creation and Apparent ship Research and data sharing.	To develop desired and quality manpower. Collaboration in research,	No data sharing, Poor collaboration in workforce development and research.	Good standardized MoU.	Low
Minister of Innovation and Technology (MiNT) and Ethiopian Intellectual Property Office (EIPO) (08)	New Projects, approval, registration, and patent right.	Creativities, new ideas, and scientific outputs	To develop partnerships and strengthening and national data management.	No patent rights.	Collaboration Transparency Advocacy	Low.
Line Agencies (EFDA, HAPCO, EHIA, EPSA & Blood Bank) AHRI (09) CSA, Plan Commission (Federal Ministry)	Inter-agencies collaboration consider health in all policies and strategies preparedness of inputs for PHEs & lab. Inputs (equipment and reagent)	Evidence-based information; research coordination, Technical support. Clear preparedness plan. Provide lab equipment, reagent, and supplies	For strong coordination and collaboration.	Fragmentation Dissatisfaction Poor preparedness for PHEs. Shortage of lab. equipment, reagent, and supplies	Collaboration Transparency Advocacy	High
Regional, Health Bureaus, Regional Public Health /Reference Laboratories and Health facilities. Reginal PHEM	Commitment, participation and Collaboration in Research, lab services, and PHEM.	Effective Coordination and joint agenda setting Joint Planning, Implementation and joint Evaluation Supportive action and collaboration Systematic capacity building and skill transfer	For better evidence-based decisions. For good implementation lab quality improvement programs To deliver expanded lab services. To protect peoples from PHEs.	Dissatisfaction, Fragmentation	Collaboration Coordination Joint program implementation	Medium

Stakeholders	Behavior we desire	Their needs and interests	Why is the information required?	Resistance issues	Institutional Response	Influence level
offices (10)		Involvement in planning, implementation & M&E Evidence-based information				
Professional Association (PHA, EMLA, EMA, FONSE, emwa) (11)	Knowledgeable, skilled, and ethical health professionalism, professional code of conduct evidence	Support Guidelines and Manuals Information. Participation, Collaboration, and Coordination in planning, implementation & M&E.	For technical support and planning	Dissatisfaction Fragmentation Scale down Withdrawal	Guidelines Transparency, Advocacy Capacity building	Low
Program donor (long-lasting) (CDC, WHO, WB) (12)	Harmonized & aligned Participation More financing Technical Support	Financial system accountable & transparent Involved in planning, implementation & M&E	For resource allocation and better budgeting and technical support.	Fragmentation High transaction cost Inefficiency & ineffective	Leadership Transparency Efficient resource use Build financial management capacity Build strengthen M&E	High
Development Partners (Bill and Melinda Gates, Carter Center, FAO, USAID CIFF, ICAP, ICIPE, IRI/Columbia University, LSTMH, -PATH, OSU, RTI-Envision, South Florida University, UNICEF, Vital Strategies, etc.) (13)	Harmonized & aligned Participation More financing Technical Support	Financial system accountable & transparent Involved in planning, implementation & M&E	For resource allocation and better budgeting and technical support.	Fragmentation High transaction cost Inefficiency & ineffective	Leadership Transparency Efficient resource use Build financial management capacity Build strengthen M&E	Medium
Traditional healers / knowledgeable community elders (14)	Collaboration, transparency	Information on Indigenous knowledge,		Trust and transparency	Capacity building and collaboration, facilitating royalties on indigenous	low

Stakeholders	Behavior we desire	Their needs and interests	Why is the information required?	Resistance issues	Institutional Response	Influence level
					knowledge	
EPHI employees' staffs (15)	Commitment, Participation Capacity building, output delivery	Conducive environment Transparency motivation and retention mechanism		Dissatisfaction Unproductive Attrition	Motivation, Involvement, accountability, transparency	High
Ministry of Agriculture, Metrology, EARI, ATA, Ethiopian Environmental Protection Authority (EPA) (16)	Commitment, participation, collaboration Metrology Information	Coordination and collaboration on PHEM Coordination and collaboration on zoonosis disease management	For strong coordination and collaboration in PHEM and zoonosis disease management planning, M&E and program implementation	Fragmentation Dissatisfaction	Put in place a strong collaboration & coordination	Low
Ministry of Social affairs, & Ministry of Women and children affairs (17)	Policy, Guidelines, and regulations regarding labor, women, disabled peoples, and technical support.	Protection and inclusive program implementation regarding women, disable peoples	For inclusive program implementation	Dissatisfaction	Put in place a strong collaboration & coordination	Medium
Ethiopian National Disaster Risk Management Commission (NDRMC) (18)	Disaster supply (Food and non-food) National coordination during emergency	Collaboration (health aspect) Joint planning, implementation M& Evaluation.	For preparedness, effective response, and recovery	Fragmentation	Collaboration Coordination Joint program implementation	Medium
Media (19)	Reliable and timely information, Documentary, advocacy, and promotion	Timely information And data	For transparency and accountability To ensure the right of the community	Misinformation Multidiscipline (lose journalism code of conduct)	Transparency Media scanning Press conference	Medium

Annex Table 2: Performance measurement (Indicators) matrix

Indicators	Indicator level	Formula	Means of verification	Risks and Assumption
Number of technical reports produced	Output	-	Progress report (Annually)	- Appropriate Infrastructure - Budget - Dynamic organizational structure - Manager's commitment - Stakeholder support HR strategy (motivation and retention scheme
Number of publications produced in peer-reviewed journals	Output		Progress Report (Annually)	
Number of scientific evidence dissemination workshops (Thematic area Specific)	Output		Progress report (Annually)	
Number of scientific evidence dissemination produced documentary and Broadcasted programs	Output		Progress report (Bi-annually	
Number of evidence synthesis (systemic review, meta-analysis, Health Technology Assessment, Policy brief, scoping review, rapid review, Issue brief, and other in-depth analysis	Immediate Outcome		Progress report (Annually)	
Number of books and books chapters	Output		Progress report (Annually)	
Number of diagnostics and health technologies assessed, evaluated, and validated	Output		Progress report (Annually)	
Number of food product package disseminated	Output		Progress report (quarter)	
Number of disseminated workshops, scientific forums/congress conducted	Output		Progress report (Annually)	
Number of production package formulated and distributed	Output		Progress report (Annually)	
Number of patent and utility model	Output		Progress report (Annually)	
the proportion of evidence-based information generated and disseminated	Immediate Outcome	(# of publication distributed/# of generated evidence produced in specific period) *100%	Evaluation (2-3 years)	
Number of scientific evidence dissemination conference /congress	Output		Progress report (Annually)	

Indicators	Indicator level	Formula	Means of verification	Risks and Assumption
Number of scientific journals produced (Ethiopia Journal of Public Health and Nutrition)	Output		Progress report (Annually)	
the proportion of publication, published in peer-reviewed journals among produced technical reports	Output	# of published publication in peer-reviewed journals/ total # of the published publication	Assessment report (annually)	
Number of articles presented in scientific conferences	Output		Assessment report (annually)	
# of sub-Saharan countries using EPHI as regional hub for BoD estimate	outcome		progress report (annually)	
# number of assessment reports of indicators (SDG/HSTP) tracked using burden of disease estimates	output		Assessment report (annually)	
the proportion of synthesized evidence-based on BoD estimates	output	# of synthesized evidence/total # of selected BoD estimates	Assessment report (annually)	
The proportion of developed data science techniques, advanced statistical and mathematical models, and forecasting techniques	Process	# of developed data science techniques, advanced statistical and mathematical models and forecasting techniques/ # of identified data science techniques, advanced statistical and mathematical models and forecasting techniques		
Number of developed and/or customized computational tools	Output			
Number of deployed platforms, systems, visualization dashboards and libraries, portals, and data communication channels	Output			
the proportion of executed data science techniques, advanced statistical and mathematical models, and forecasting techniques	Output	# of executed data science techniques, advanced statistical and mathematical models and forecasting techniques/ # of identified data science techniques, advanced statistical and mathematical models and forecasting techniques		

Indicators	Indicator level	Formula	Means of verification	Risks and Assumption
Number of data sets archived to the national health data repository	outcome			
Number of data shared to national and international organizations	outcome			
Number of HIS's interoperable and interconnected within EPHI and across regions	Outcome			
The proportion of public health risks averted identified by VRAM	Immediate Outcome	(# of averted risks identified by VRAM/total # of cases identified by VRAM) *100%	After Action Review	
# of developed and utilized disease-specific outbreak forecasting models	output		Progress Report (Annually	
The proportion of forecasted emergencies using the outbreak forecasting models	Intermediate Outcome	# of forecasted emergencies/ Total # of emergencies	Progress Report (Annually	
The proportion of health facilities which reported weekly PHEM surveillance report using DHIS-2	Output	(# of HFs which sent their report through DHIS-2/total # of HFs) *100%	Progress IBS report (Weekly)	
The proportion of health facilities which reports weekly diseases report with 95% Completeness and Timeliness	Output	# health facilities which report weekly diseases report with 95% Completeness and Timeliness/ total # of report	Progress IBS report (Weekly)	
The proportion of Kebeles structures implemented community-based surveillance	Output	(# of health posts which reported weekly IBS report/# of total health posts) *100%	Progress report (Bi-annually)	
The proportion of PH emergencies that were detected through EBS (PPV of EBS)	Intermediate Outcome	[(# of events detected by EBS)/ (# of events detected by EBS + # of events not detected by EBS)]	Assessment report (q 2-3 years)	
The proportion of Woreda's which conducted surveillance data quality monitoring and provide feedback provision with greater than 85% performance	output	# of Woreda's which conducted surveillance data quality monitoring and provide feedback provision with greater than 85% performance/total number of woredas		
The proportion of Regions with greater than 90 % of Woreda's reported Non-Polio	output	The proportion of Regions with greater than 90 % of Woreda's reported Non-Polio AFP		

Indicators	Indicator level	Formula	Means of verification	Risks and Assumption
AFP infection rate within an acceptable range (2 and more cases per 100,000) under 15 years		infection rate within an acceptable range (2 and more cases per 100,000) under 15 years/total number of reporting regions		
the proportion of Woreda's which reported Non-Measles Fever and rash rates within an acceptable range	output	# of Woreda's which reported Non-Measles Fever and rash rates within an acceptable range/total number of reporting woredas		
Number of technical reports that were produced from the integrated surveillance system	output			
Number of publications that were published on peer-reviewed journals from surveillance report	output			
Number of synthesized evidence-based information that was generated and disseminated for decision making	output			
The proportion of synthesized evidence-based information that was utilized by decision making	output	# of synthesized evidence-based information that was utilized by decision making/total number of evidence-based information synthesized		
The proportion of functional system (Regular meeting) for timely detection and information sharing platform among stakeholders at national and regional level (Public health, Veterinary, and Environmental sectors)	output			
The proportion of alerts that were reported within 30 minutes	Output	(# of reported alert cases within 30 min/total # of cases occurred) *100%	Progress report (Monthly)	
The proportion of reported alerts that were verified within 24 hours	Output	(# of verified alert cases within 24 hours/total # of alert cases) *100%	Progress report (Monthly)/Outbreak response report	
The proportion of alerts reported investigated and managed within the	Output	(# of investigated and managed alert cases within 24 hours/total # of alert cases) *100%	Progress report (Monthly)/Outbreak response report	

Indicators	Indicator level	Formula	Means of verification	Risks and Assumption
standard time (24hr)				
The proportion of early warning and alerting messages that were sent for Regions and partners within 24Hrs of verification	output	# of early warning and alerting messages that were sent for Regions and partners within 24Hrs of verification/ total # of alert cases		
proportion of PH emergencies that were identified and confirmed using local laboratory capacity at national and regional levels	output	# of PH emergencies that were identified and confirmed using local laboratory capacity at national and regional levels/ total number of PH emergencies		
The proportion of epidemics that were controlled within the accepted mortality and morbidity rate	Immediate Outcome	(# of the controlled epidemic within accepted mortality rate/total # of epidemics occurred) *100%	After Action Review	
The proportion of post epidemic assessment /After-Action Reviews conducted	Output	# of post epidemic assessment/After Action reviews/ total # of epidemics	After-Action Review Reports	
the proportion of affected people who were rehabilitated	Immediate Outcome	# of affected people who were rehabilitated/ total number of affected people	Assessment report (Biannual	
The proportion of damaged health facilities which were reconstructed and rebuilt	Immediate Outcome	# of damaged health facilities which were reconstructed and rebuilt/ total number of damaged facilities	Assessment report (Biannual	
Number of PoEs with minimum IHR core capacities	Output	Number	Progress report (Annually)	
Number of PoEs implementing routine public health measures on human and cargos to the fullest level	Output	Number	Progress report (Annually)	
Number of PoEs with the minimum capacity to respond to the cross border Public health emergency (PHEs) or Public health emergency of international concern (PHEIC)	Output	Number	Progress report (Annually)	
The proportion of international travelers protected from vaccines preventable	Output	(#vaccinated traveler / total # travelers) *100%	Progress report (Annually)	

Indicators	Indicator level	Formula	Means of verification	Risks and Assumption
diseases (VPDs) by WHO recommended vaccines				
Number health laboratories accredited to relevant ISO standards	Output	Number	Assessment report (Quarterly)	
Number of laboratories with SLIPTA 1 star level and above	Process	Number	Progress report (Quarterly)	
Proportion of laboratories having basic quality management system implemented	Process	(Number of Labs with Basic LQMS implementation / Total Number of Labs) *100	Progress report (Quarterly)	
Level of customers satisfaction in laboratory services	Outcome	(Number of customers satisfied with lab services/total number of Customers who got services in the lab) *100	Survey (2 years)	
The proportion of laboratories providing standardized laboratory testing services as per national standard	Output	(Number of labs providing testing services per national standard/total number of functional labs) *100	Assessment report (annually)	
The proportion of laboratories networked to specimen referral linkage and testing services	Output	(Number of laboratories networked to specimen referral linkage and testing services / total number of functional laboratories) * 100	Assessment report (annually)	
Number of laboratories with capacity for supporting AMR surveillance (Advanced Microbiology)	Output	Number	Quarter based	
The proportion of major laboratory equipment with less than 5% downtime per year	Output	(Number of downtime data per year / total number of functional major lab equipment) *100	Assessment (quarter based)	
The proportion of BSC and Negative pressures systems maintained and validated	Output	(#of BSC and Negative pressure system maintained and validated / total number of BSC and Negative pressure system) *100	Assessment report (Biannual)	
The proportion of laboratories at which basic biosafety and biosecurity requirements implemented	Process	(#of labs biosafety and Biosecurity system implemented / Total number of functional labs) *100	Assessment report (annually)	
The proportion of laboratories enrolled in PT and or Random Blinded Rechecking Schemes	Output	# laboratories enrolled in PT and or Random Blinded Rechecking Schemes/ Total # of laboratories	Assessment report (annually)	

Indicators	Indicator level	Formula	Means of verification	Risks and Assumption
Proportion of laboratories with >80 % performance in PT and or Random Blinded Rechecking	Output	# laboratories with >80 % performance in PT and or Random Blinded Rechecking/Total # of laboratories	Assessment report (annually	
Number of accredited EQA-PT types per ISO 17043 standards	Output		Assessment report (annually	
The proportion of labs using electronic LMIS that is Interoperable with facilities HIS and national data repository	Outcome	# labs using electronic LMIS that is Interoperable with facilities HIS and national data repository/ Total # of laboratories	Assessment report (annually	
The proportion of staffs who were satisfied with the existing transparency and accountability	outcome	# of staffs who were satisfied with the existing transparency and accountability/total number of staff*100	survey	
% of allocated and mobilized budget	output	Amount of budget mobilized/ amount of budget mapped (budget demand)	Assessment report (annually)	
The proportion of the utilized budget	output	Amount of budget utilized / amount of budget allocate(mobilize)	Assessment report (annually)	
The proportion of procured and availed goods and services (by type)	output	of procured and availed goods and services /total number of requested goods and services	Assessment report (annually)	
The proportion of employees/staffs who achieved best performance score above 95%	outcome	# of employees/staffs who achieved best performance score above 95%/total # of employees/staffs	Progress report (Annually)	
# of internal human resource staffs who took short- and long-term training	output		Assessment report (annually)	
# of external workforce who took Short term training	output		Assessment report (annually)	
# of health workforce trained with CPD program	output		Assessment report (annually)	
# of standardized modules for short-term & CPD training	output		Assessment report (annually)	
# of public health information broadcasted sessions/events channeled to the general public through different channels	output		Assessment report (quarterly)	
Number of forums organized by the institution (disaggregated by wings)	process	Number	Assessment report (annually)	

Indicators	Indicator level	Formula	Means of verification	Risks and Assumption
# of established regional and international level collaborations and partnerships	output		Assessment report (annually)	
The proportion of maintained collaborations and partnerships	output	# of maintained collaborations and partnerships/total of collaborations and partnerships	Assessment report (annually)	

Annex Table 3: Five Years Detail Activities Plan

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
Setting national health priorities for evidence synthesis	This major activity covers the identification and prioritization of existing and emerging health issues and their economic aspects that need evidence. It also includes capacity building on health prioritization.	Conduct annual evidence demand assessment of MOH, RHB, and Partners	#	1	1	1	1	1	1
		Facilitate the prioritization of national health problems for evidence synthesis through review of scientific and program documents and consultative workshops	#	1	1	1	1	1	1
		Establish collaboration with international /national institutions expertise in health priority setting and evidence use on capacity building and technical support	#	1		1		1	
		Identify national hot/emergency national health-related issues such as COVID, GERD……	#		1	1	1	1	1
		Prepare a cost-effectiveness analysis database (registry)*	%	0		25%	50%	75%	100 %
Synthesizing evidence on identified health priorities	This major activity covers the synthesis of demand-driven high-quality evidence that helps inform national health policy and practice	Develop protocol/term of reference on evidence synthesis priorities to guide data mapping, organization, integration, and analysis	#	9	11	13	15	17	19
		Facilitate visualization/ dashboard use	#	9	11	13	15	17	19
		Produce evidence and or issue briefs	#	9	11	13	15	17	19
		Produce manuscripts	#	7	9	11	13	15	17
		Publish peer-reviewed articles	%	35%	40%	45%	50%	55%	60%
Advancing evidence	The major activity incorporates the	Facilitate evidence communication	#	6	6	12	15	18	22

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
translation and use	dissemination and communication of synthesized evidence to potential stakeholders and the general public. It extends to monitoring the utilization of the evidence by the stakeholders for informed decisions and practice.	through either of the different outlets (workshop, broadcasted media, and scientific conference)	%		100 %	100 %	100 %	100 %	100 %
			%	-	50%	55%	60%	65%	70%
		Facilitate evidence use for decision by MOH, RHB, and Partners	#		3	3	3	3	3
		Track, verify and measure the use of evidence for decision, policy framework, and public health practice.							
		Conduct advocacy on the culture of evidence use							
Developing working guidelines	This major activity focuses on developing and revising working guidelines that are used to guide the process of priority setting for evidence synthesis, evidence synthesis, and evidence translation and communication. It also covers the use of evidence for informed decisions and practices.	Develop roadmaps/guidelines for national health priority setting, evidence synthesis, and evidence translation;	#	1	1				
		Revise roadmaps/guidelines for national health priority setting, evidence synthesis, and evidence translation;	#	0	1				
Understand/analyzed and prioritize in-country evidence and health technology needs and prioritize		Health technology Assessment brief	#		**1**	**2**	**2**	**3**	**3**
Make data systems interoperable and interconnected	Creating interoperable and interconnected data systems to foster real-time reporting, real-time data collection and sharing, and integrated analyses	Creating Data repository and tracking platform		4	4	3	3	4	
Ensure data governance to enhance open data system and open data access	Developing governance systems and structures including establishing data governance council to enhance open data system and open data access in	Developing data hub strategy Develop governing document for the implementation of FAIR data principle (Findable, accessible), interoperable and		3	1				

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	relation to data standards, research and analytics, MoU's and access policies, technology	reusable) Develop a guideline for data digitization, health information systems							
		Developing health data regulation Establish data governance council				1			
		Data storage governing document					1		
Digitization/automation of data systems and regular update	Fully automate data sharing, prospective data archiving (research), Solution for enterprise Resource Planning Creating automated keyword extraction tools to archive the keywords into the database, Metadata extraction, and keywords.	Creating automated data systems	#	7	1	1	1	1	**1**
Advancing data infrastructures and data security systems	Improved data infrastructure capable of supporting big data analytics, heterogeneous and integrated data analytics, high-performance computing, advanced analytics including machine learning, automated backup, and up to date data security	Establish high computation power and networked systems	#	1	1				
Create national and continental health data hub for seamless data sharing between diverse endpoints	Establish data hub and standard health data repository having national and continental purposes in African countries using DHIS2 platform, East African and Nile basin countries, and Counties under African in-depth network (HDSS)	Create practical and scalable national health data hub (data from EPHI, IHME, NGO, DHIS2, CSA, Research institutes, metrology, traffic data, universities)		-	1	1	1	1	
		Updating and supporting existing systems		-	1	1	1	1	
Data sharing for a more open research landscape, improved research integrity, innovation, and discovery		Sharing data , Reduce ToT	#	27	40	50	60	70	**80**
		Data Mapping and archiving	#	118	75	50	50	50	**50**
Harnessing Data Science, Machine Learning (ML)/Artificial Intelligence (AI), big data analytics for health and fostering		Building and updating mathematical and statist models, disease intelligence		4	3	5	6	1	-
		Forecasting/prediction/projection		2	2	2	-	-	-
		Integrated and triangulated analyses		5	7	9	11	13	**15**

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
public health intelligence		Geospatial analyses		-	5	7	9	11	**15**
		Cutting edge analytic techniques and methods		4	3	-	-	-	-
		Visualization and dashboard		4	6	8	12	14	**16**
Produce high-quality, relevant, and up-to-date synthesized research evidence		Systematic Review	#		**1**	**1**	**1**	**1**	**1**
		Scoping review	#			**1**	**1**	**1**	**1**
		Policy brief	#		**1**	**1**	**2**	**2**	**2**
		Rapid Evidence Review	#		**4**	**5**	**5**	**7**	**9**
		Evidence briefs	#	**10**	**12**	**16**	**20**	**24**	**30**
		Translated evidence	#	**6**	**8**	**10**	**12**	**14**	**16**
		Publications	#	**4**	**8**	**12**	**16**	**20**	**24**
		Technical reports	#	**3**	**4**	**5**	**6**	**7**	**8**
Review research proposals	This major activity covers providing independent guidance, advice, and decision in the form of ("approval/minor change/resubmission/disapproval") on health and related research protocols.	Receive research proposals in health and health-related areas	#	**340**	**85**	**85**	**85**	**85**	**85**
		conducts a scientific and ethical review of the protocols	#	**340**	**85**	**85**	**85**	**85**	**85**
		Gives independent decision in a form of Approved, minor change, resubmission, and disapproved	#	**340**	**85**	**85**	**85**	**85**	**85**
Monitor research activities	This major activity conducts to protect research integrity and will apply in selected research projects.	Monitor approved research protocols by progress and final reports	#	16	4	4	4	4	4
		Conduct supportive monitoring supervision of approved research projects during training and fieldwork/data collection.	#	40	10	20	40	60	85
Estimating National, sub-national and local burden of diseases (BoD) and injuries	Producing profiles and health atlas for Health and Demographic Surveillance Sites, DHIS2 by health facility and Health profile at national and sub-national levels with GBD results.	Estimating Sub-national BoD			**1**	**1**		**1**	
Develop capacity and		Capacity building on policy brief preparation	#			**1**	**2**	**3**	**3**

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
infrastructure for use of evidence in informing health policy and practice		Training on rapid response service	#			**2**	**2**	**2**	**2**
		Orientation on rapid response Service	#			**1**	**1**	**1**	**1**
		Embedded support(mentorship)	#			**1**	**1**	**1**	**1**
Disseminate synthesized evidence Scientific workshop and congress, Broadcasted scientific programs, Conduct research and surveillance on communicable diseases (Viral,)		Disseminate synthesized evidence on Scientific workshop	#		1	1	1	1	1
		Conduct Survey and surveillance on HIV and related	#	3	12	14	15	18	18
		Operational research on HIV and TB	#	-	2	4	5	5	5
		Conduct Health Technology assessment on TB and HIV technologies	#	3	3	3	5	5	5
Identify national public health gap on Communicable disease	National Elimination programs on Malaria and neglected tropical diseases (evaluation and monitoring, Surveillance, diagnosis and treatments efficacy)	Malaria elimination program: surveillance, evaluation, and implementations of program interventions	#	1	0	1	0	1	0
		Diagnostic techniques: molecular and genomic surveillance on drug resistance of malaria, genomic epidemiology, the genomic sequence of plasmodium falciparum and vivax.	#	0	1	0	1	0	1
		Foci investigation and identification, Mass screening, and passive screening of malaria in malaria hotspot areas of Ethiopia	#	3	0	2	1	1	1
		Surveillance of pfHRP2/3 gene deletion, G6PD and Duffy coat of P. vivax in Ethiopia	#	0	1		1		1
		Impact, coverage and mapping of NTDs intervention programs, transmission break and elimination	#	3	1	2	1	2	2

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Surveillance of AMR-Malaria infection and transmission dynamics	#	1	1	1	1	1	1
Conduct research and surveillance on communicable diseases (malaria)	Malaria elimination: diagnosis and treatment research agendas	Conduct on Malaria drug resistance surveillance: microscopy, molecular and Genomic Epidemiology, genomic sequence pf and pv, and genetic diversity of plasmodium falciparum and vivax in Ethiopia. Evaluation of Safety, efficacy and quality of drugs study of malaria.	#		0		1	1	1
		Prevalence of drug resistance markers	#	0		1		1	
		Asymptomatic malaria: implication of diagnosis for malaria elimination	#	1	0	1	0	1	0
		Performance and competence evaluation of microscopy, RDTs, and RT-PCR	#		1	1			
Conduct Neglected tropical diseases elimination strategic research priorities	Ethiopia is estimated to have the highest burden of trachoma, podoconiosis, and cutaneous leishmaniasis in sub-Saharan Africa (SSA), the second-highest burden in terms of ascariasis, leprosy, and visceral leishmaniasis, and the third-highest burden of hookworm. Infections such as schistosomiasis, trichuriasis, lymphatic filariasis, and rabies are also common. A third of Ethiopians are infected with ascariasis, one quarter is infected with trichuriasis and one in eight Ethiopians lives with hookworm or is infected with trachoma. However, despite these high burdens of	Impact assessments, Mapping, and treatment coverage studies on Onchoceciarisis, and Leishmaniasis elimination program	#	1	-	1	-	2	1
		Evaluate new and enhanced diagnostic tools	#	1	-	1	1	1	1
		transmission break modeling on Schisto/STH in Ethiopia	#	1	-	1	1	-	-
		Assessment of unmapped districts on Onchocerciasis	#	1	-	-	1	1	-
		Impact assessments, Mapping, and treatment coverage studies on LF elimination program	#	1	1	1	1	1	1
		National LF elimination program outcome validation survey	#	-	-	1	-	1	-
		Drug resistance survey on Trachoma and Onchoceciasis elimination program	#	-	-	1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	infection, the control of most NTDs in Ethiopia is in its infancy.	Surveillance on epidemiological and entomological of LF in Ethiopia	#	-	-	1	-	1	-
		Leishmaniasis Epidemiology of prevalence and mapping	#	-	-	1	-	1	-
Assessment, evaluation, and validation of diagnostics and health technologies	Assessment and evaluation of elimination and diagnosis tools on malaria and neglected tropical diseases	Assess and evaluate new diagnostic technologies for malaria elimination programs	#	1	-	-	1	-	-
		Assess and evaluate new diagnostic technologies for neglected tropical diseases elimination programs	#	1	-	1	-	1	-
Conduct research and surveillance on communicable diseases (Viral, Bacterial, Parasitic, rickettsia and fungal)	Public health surveillance is the "continuous, systematic collection, analysis and interpretation of health-related data needed for the planning, implementation, and evaluation of public health practice. Conduct research on Antimicrobial Resistance (ESBL, CRE, MRSA, VRSA ,carbapenemase etc..) on the selected priority pathogens.	Develop AMR surveillance protocol	#	1	2	2	3	4	4
		Produced AMR surveillance technical report	#	1	2	2	3	4	4
		Conduct monthly mentorship for AMR sentinel sites	#		9	16	16	20	24
		Confirmatory testing for the isolated priorities pathogen	%		10%	10%	10%	10%	10%
		Conduct ECHO session	#		52	52	52	52	52
		Capacity building for AMR sentinel sites	#		9	16	16	20	24
		Conduct supportive supervision using standard assessment tool.	Round		4	4	4	4	4
Conduct National bacterial meningitides surveillance.	Bacterial meningitis is one of the most feared infectious diseases of children and epidemic meningitis can	Expand surveillance sentinel sites	#	9	0	7	0	4	4

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	have a devastating impact on entire populations. Until recently, antibiotic treatment of cases, and, in some situations, chemoprophylaxis of contacts, was the only means of control. So, Meningitis surveillance can bring strong evidence for decision-makers and programmers.	Conduct confirmatory test using molecular plat form.	%		100	100	100	100	100
		Produced Meningitis surveillance technical report	#	1	1	1	1	1	1
	Conduct research on gastrointestinal pathogens, Sexually transmitted infections, upper and lower respiratory disease, urinary tract infection from selected hospitals at national level	Develop surveillance protocol	#		2	3	3	4	4
		Produced technical report	#		2	3	3	4	4
Conduct research on Fungal diseases	Conduct research on medically important fungal disease. Fungal diseases studies in the lungs are often similar to other illnesses such as bacterial or viral pneumonia. Some fungal diseases like fungal meningitis and bloodstream	Develop protocol	#	-	2	3	3	4	4
		Produced technical report	#	-	2	3	3	4	4

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	infections are less common than skin and lung infections but can be deadly.								
	Conduct research on emerging and re-emerging bacterial etiologic agents.	Develop protocol	#	-	1	1	1	1	1
		Produced technical report	#	-	1	1	1	1	1
conduct research on animal, human, and environment health interface (One Health approach)	Undertaking interdisciplinary studies on priority health and nutrition issues for evidence based information generation, translation and utilization for policies, programs, public education. Strengthen one health plat form for scientific evidence generation and interventions on interests of national zoonotic disease	Conducting research and surveillance on rabies	#	1	2	3	3	4	4
		Conducting research and surveillance on anthrax	#	1	1	2	2	2	3
		Conducting research and surveillance on brucellosis	#	1	1	1	2	2	2
		Conduct research and surveillance on AMR	#	1	1	2	2	3	3
		Conduct research and surveillance on re/emerging zoonotic disease	#	1	1	2	2	3	3
		Conducting research on G.worm and other parasitic zoonosis	#	1	1	1	2	2	3
		Laboratory animals produced and distributed as per demand (Rate, Mosquito etc.)	%	100	100	100	100	100	100

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
Conduct research and surveillance on injuries and multi hazard issues.		**Conduct national survey on injuries**	#	-	-	-	**1**	-	-
		Conduct national survey on hazard issues	#	-	-	-	-	**1**	-
conduct research on animal, human, and environment health interface (One Health approach)		**Conduct survey on** Knowledge, attitude and practice towards **animal human disease in Ethiopia**	#	-	-	-	-	-	**1**
Conduct ethno-medicine survey on traditional medicine practice and medicinal plants	Survey of Traditional medicine is used to exploit and document traditional medicine knowledge and practices besides strengthening research-based conservation and conduct agricultural studies to ensure sustainability and promote commercial farms of validated medicinal plants.	Survey on Ethnomedicne& Ethnoveterinary and traditional practice	#	1	-	-	-	-	1
		Survey on Traditional Medicines in market vendors	#	-	-	-	-	1	-
		Survey on Traditional Medicines used in households	#	-	-	-	1	-	-
		Survey for KAP assessment on traditional medicines & practice in modern health workers, healers, community	#	-	-	1	-	-	-
Conduct preclinical study (safety, efficacy, and quality of traditional medicine)	Pre-clinical studies evaluate the safety, efficacy, and quality of traditionally claimed medicinal plants as well as standardize the validated products.	Multidisciplinary investigation on Moringa stenopetala	#	1	1	-	-	-	-
		Studies on traditional medicines used for diabetes	#	1	1	1	1	1	1
		Studies on antimicrobial traditional medicines	#	1	1	-	-	1	-
		Studies on traditional medicines used for hypertension	#	1	1	1	-	1	1
		Studies on Traditional Medicine used for Mosquito replant	#	1	1	1	-	-	1
		Studies on water clarifying traditional medicines	#	1	1	1	-	1	-
		Studies on traditional medicines used for	#	1	1	-	-	-	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Malaria							
		Studies on traditional medicines for helminthiasis	#	1	1	-	-	-	1
		Studies on traditional medicines supplied by traditional healers for Covid-19	#	1	1	-	-	-	1
Strengthen and Increase the laboratory scale formulation of scientifically validated traditional medicines and transfer the technology package	This activity is used to develop and standardize traditional medicine products and production packages for reliable quality and rationalization of their use. In addition, laboratory-based product packages of traditional medicines are optimized in incubation centers for scaling up in industries to contribute to health care.	Medicinal herbs for Covid-19 project	#	-	-	1	-	-	-
		Production package for water clarifying agent	#	-	-	1	-	-	-
		Multidisciplinary Moringa project	#	-	1	-	-	-	-
		Dermatology project	#	-	-	1	-	-	-
Conduct clinical trial of standardized traditional medicine	In this activity pre-clinically verified and laboratory-scale formulated traditional medicines are going to be clinically tested.	Medicinal herbs for Covid-19 project	#	-	-	1	-	-	-
		Dermatology project	#	-	-	1	-	-	-
Compile data repository on medicinal plants, another source of traditional medicine, and traditional practices	This activity includes systematic exploration and documentation of indigenous knowledge of traditional medicine practice, and pharmacological activity, ethnomedicinal uses, phytochemistry, and physicochemical parameters of medicinal plants.	Documentation on traditional medicines \from Indigenous Knowledge & scientific publications (efficacy, safety, chemical constituents, and quality) of non-communicable diseases	#	-	-	-	-	-	1
		Documentation on traditional medicines from Indigenous Knowledge & scientific publications (efficacy, safety, chemical constituents, and quality) of	#	-	-	-	-	-	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		communicable diseases							
Studies on the trends of drug prescription and adherence for the patients, and Pharmacovigilance to monitor drug reactions	In this activity, the detection, assessment, and prevention of adverse effects or any other drug-related problem are studied. It aimed to enhance patient care and patient safety and to support public health programs providing reliable, balanced information for the effective assessment of the benefit-risk profile of medicines to ensure the safe use of prescribed medicine. And also access patient adherence to the prescribed medicine.	Studies on trends of drug prescription and patient adherence for medication	#	-	-	-	-	-	1
		Studies on detection, assessment, and prevention of adverse effects or any other drug-related problems.	#	-	-	-	-	-	1
Capacitate training healers to improve the health care delivery	Capacity building through training encompasses the training of traditional healers to improve standardized traditional medicine, health service, experience sharing, ethical practice, and supporting research and development initiatives on traditional medicine.	Number of Traditional healers trained	#	50		100	100	100	200
		Number of a training program organized for Traditional healers training	#			2	2	2	4
		Training of Trainers of Trainees (TOT) for the training of traditional healers	#			10	10	10	20
Conduct research and surveillance on nutrition	Nutrition research has undergone revolutionary changes with a move away from a focus on single nutrients to an assessment of overall dietary intake. Furthermore, there	National micronutrient survey	#	-	1	-	-	-	-
		National Nutrition Program (NNP-II) evaluation study	#	-	1	-	-	-	-
		National food consumption Survey	#	-	1	-	-	-	-
		Nutrition education	#	10	10	10	10	10	10

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	has been a realization that not everyone responds in the same way to dietary interventions and the concept of personalized or precision nutrition has emerged. So, research on nutrition brings strong evidence for programmers and user communities.	Feasibility of introducing egg powder to families in Ethiopia	#	-	1	-	-	-	-
		Food-Based Dietary Guideline	#	-	1	-	-	-	-
		Sustainable Undernutrition Reduction in Ethiopia (SURE) Coverage Survey	#	1	1	-	-	-	-
		Product Development and Sensory Evaluation	#	2	1	1	1	1	1
		Food Technology Development and Or Adaptation	#	-	1	-	1	-	1
		Food Shelf-Life evaluation	#	-	1	1	1	1	1
		Updating Ethiopian Food Composition Table	%	-	25	50	25	-	-
		Designing Industrial Production of Ethiopian Traditional Foods	#	-	-	1	1	1	1
		Food Quality Assessment of Imported Food Product	#	-	-	1	1	1	1
Conduct food safety and microbiological research	Evaluation of the treatment efficacy of drinking water utilities Molecular characterization and antimicrobial resistance Risk Assessment using qualitative/semi-Quantity/QMRA approaches at water utilities and at the household level.	Study the microbial quality of source water	#	-	-	1	-	-	-
		Study the physicochemical quality of source water	#	-	-	-	1	-	-
		Comparing the WSP approaches of Ethiopia to other eastern African countries	#	-	1	-	-	1	-
		Comparing the WQM approaches of Ethiopia to other eastern African countries	#	-	-	-	-	1	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Studying the treatment efficacy of AAWSA	#	-	-	-	1	-	-
	Enteric pathogen study	Molecular and AMR study of isolated from source water samples	#	-	-	-	1	-	-
	Risk Estimates of non-typhoidal salmonella in raw beef using quantitative microbial risk assessment in Ethiopia	Molecular and AMR study of isolated from food samples	#	-	-	1	-	-	-
	Study on food safety, Hygiene, and quality	QMRA study at water utilities	#	-	-	-	1	-	-
	National Food safety and quality risk Analysis	QMRA study at the household level	#	-	-	1	-	-	-
	National Food safety system survey and surveillance	Study on enteric pathogen their AMR	#	-	-	1	-	-	-
	Strength National food safety Laboratory	Study on non-typhoidal salmonella	#	-	-	1	-	-	-
		Food and waterborne microbiological research on priorities pathogens	#	1	-	-	1	1	1
	Evaluation of the treatment efficacy of drinking water utilities	Study on microbial and chemical and allergens on high and medium risky food products.	#	-	-	1	-	-	-
	Molecular characterization and antimicrobial resistance	Assess the Current HACCP Based food safety system implementation in Catering Sectors	#	-	-	1	-	-	-
		Food microbiology laboratory Accreditation	#	-	1	-	-	-	-
	Risk Assessment using	Establish a Food safety laboratory at the	#	-	-	-	-	2	2

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	qualitative/semi-Quantitive/QMRA approaches at water utilities and at the household level.	regional level							
Conduct research on food science and technology		Product Development and Sensory Evaluation	#	2	1	1	1	1	1
		Food Technology Development And Or Adaptation	#	-	1	-	1	-	1
		Food Shelf-Life evaluation	#	-	1	1	1	1	1
		Updating Ethiopian Food Composition Table	%	-	25	50	25	-	-
		Designing Industrial Production of Ethiopian Traditional Foods	#	-	-	1	1	1	1
		Food Quality Assessment of Imported Food Product	#	-	-	1	1	1	1
Conduct Research on environmental health and non-communicable disease issue	As the department of environmental health-focused mainly on disease prevention and control resulting from determinants of environmental sanitation and hygiene, conducting researches on these determinants is key to reduce public health problems by creating a conducive environment. Therefore, ensuring food safety, water, and air quality, enhancing infection prevention activities, and reducing many food and waterborne diseases will be the	Conduct researches on water quality, its determinants	#	1	2	1	1	1	1
		Conduct researches on WaSH associated diseases and determinant factors	#	-	1	1	1	-	-
		Conduct researches on foodborne diseases and associated factors	#	-	1	-	1	-	1
		Conduct researches on air quality and its health impact	#	3	1	2	-	2	1
		Conduct researches on infection prevention and control	#	-	1	1	1	1	1
		Conduct research on environmental determinants of antimicrobial resistance	#	-	1	1	1	1	1
		Conduct researches on solid and liquid	#	-	-	1	-	1	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	scope of this strategic plan of the environmental health department. On the other hand, the emergence of several non-communicable diseases in Ethiopia has triggered the need for comprehensive public health research. The prevalence of non-communicable diseases such as chronic respiratory diseases, renal diseases, and mental health problems among others are setting the health sector in dichotomy altogether with the already pressing burden of communicable diseases.	waste management practices							
		Conduct research on rural housing, acute respiratory health	#	-	2	1	2	-	-
		Conduct researches on occupational health and safety practices	#	2	-	1	1	1	1
		Conduct research on risk assessment of chemicals on the environment and human health	#	1	1	1	-	1	1
		Conduct research on determinants of chronic respiratory health	#	-	-	1	1	1	-
		Conduct research on determinants of renal disease	#	-	-	-	1	1	
		Conduct research on determinants of mental health	#	-	-	1	1	1	1
Conduct in-depth analysis and evidence synthesis on different research agendas	This major activity covers the in-depth analysis and evidence synthesis on priority health system agendas that will be conducted and disseminated for policy-making decisions and the scientific community.	Develop, dialogue, and disseminate policy briefs on…health system questions	#	-	1	1	1	1	1
		Develop and disseminate evidence briefs/ issue brief/rapid review on…health system/ questions	#	-	1	1	1	1	1
		Develop and disseminate systematic review, meta-analysis, and in-depth analysis on…health system/reproductive health questions	#	-	1	1	1	1	1
		Conduct data triangulation and modeling for health care	#	-	1	2	2	2	2
Conduct evidence dissemination, promotion for end-users and translators.	This major activity covers the dissemination and promotion of synthesized evidence on priority	Conduct Stakeholder dialogue	#		1	1	2	2	2
		Translate and disseminate evidence-	#		1	1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	health system agendas and promotion for end users.	based information on health system/ reproductive health using $DHIS_2$							
Identify national public health research priorities agenda through analysis of gap	This major activity covers the identification and formulation of the national health system research priorities agenda.	Analyze and identify the research in the areas of the health system and setting priorities research agenda in the country	#	-	1	-	-	-	1
Developing evidence-based strategies and roadmaps	The internal strengths and weaknesses, as well as external opportunities, and threats (SWOT) will be analyzed to design an evidence-based strategy and road map of Health System Research of Ethiopia.	Developing evidence-based strategy	#	-	1	-	-	-	-
		Developing evidence-based roadmap	#	-	1	-	-	-	-
Disseminate synthesized evidence Scientific workshop and congress, Broadcasted scientific programs,	This major activity covers disseminated evidence through a scientific workshop organized by the health system and reproductive health research directorate	Disseminate synthesized evidence on Scientific workshop	#	-	-	1	1	1	1
Conduct research on health care services delivery	Assessment of the availability, readiness, provision, coverage, quality, accessibility, affordability, equity, and outcomes of health care services, resources, and across different levels of the health care. Including maternal and child health services, Sexual and reproductive health researches, NCDs, Infectious diseases, etc.	Assessment of the coverage of health care services, resources across different levels of health care. (SPA)	#	-	1	-	-	-	-
		Assessment of quality of health care services, health outcomes.	#	-	-	-	-	-	1
		Availability, readiness, provision of health care services (SARA)	#	-	-	1	-	-	1
		Health system factors responsible for the unmet need for health services, utilization, coverage, outreach, referral,	#	-	-	1	-	-	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		barriers to health service care,							
		Quality of Care Network (QCN)	#	-	1	-	-	-	-
		Health service provider performance	#	-	-	-	1	-	-
		Post measles campaign coverage survey"	#	-	1	-	-	-	-
Conduct research on human resource for health	This major activity covers the following focus areas, not limited to: • National auditing /assessment of HRH, retention, regulations, workload & its impact on health worker performance • Satisfaction, motivation, and effectiveness of HRH in the health sector • Impact of different models of task shifting on health sector performance. • Assessment on Health professional curriculums	Health workforce census /audit	#	-	-	1	-	-	-
		Workload assessment and its impact on health worker performance	#	-	-	1	1	-	-
		Knowledge, Satisfaction, motivation, and effectiveness of HRH in the health sector	#	-	-	1	-	-	1
		Assessment of the availability, Strategies for HRH retention, Impediment to HRH policies and regulations in the health sector.	#	-	-	1	-	-	1
		Health care workers and support staffs work risk assessment and management	#	-	-	-	1	-	-
		Impact of different models of task shifting on health sector performance	#	-	-	-	1	-	1
Conduct research on health information system	This major activity covers the following focus areas, not limited to: •Health data quality, utilization, and health management information system •Status, effectiveness, reliability of health information system and other data in the health care system.	Health Data quality, utilization, and collection mechanisms for program planning and implementation.	#	-	1	1	1	1	1
		Status, effectiveness, reliability of HMIS DHIS and other data systems for the health care system.	#	-	1	1	1	1	1
		Utilization of health information for decision making	#	-	1	1	1	1	1
Conduct research on pharmaceutical products and	This major activity covers the following focus areas:	Assessment of supply chain management, Determinants of medical and	#	-	1	-	-	-	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
technologies availability, access, quality, and utilization	•Assessment of supply chain management, determinants of medical and pharmaceutical products stock-outs •Laboratory and diagnostic researches •Patient safety, pharmaco-vigilance, Medication errors, interaction with a health care provider, patient satisfaction •Health Technology assessments	pharmaceutical products stock-outs							
		Rational utilization of medical and pharmaceutical products.	#	-	-	1	-	-	-
		Patient safety, Pharmaco-vigilance, Medication errors, interaction with a health care provider, patient satisfaction	#	-	1	-	-	-	-
		Pharmaceutical Equipment Inventory	#	-	-	-	-	-	1
		Health Technology assessments	#	-	-	-	-	1	-
		Ethiopian Cold Chain Equipment Inventory	#	-	1	-	-	-	-
		Impact of health reforms on health systems performance.	#	-	-	-	1	-	1
Conduct research on health care financing	This major activity covers the following focus areas, not limited to: •Cost-benefit and cost-effectiveness analysis of health care services, and economic burden of diseases •Willingness and capacity to pay, cost-sharing, price regulation, prices, equity in access, demand for health services •Health saving accounts and health insurances • Health care financial catastrophic effect	Determination & evaluation of costs, and economic Evaluation	#	-	1	3	2	2	3
		Willingness to pay, cost-sharing, price regulation, prices, equity in access, demand for health services	#	-	-	1	1	1	1
		Health saving accounts	#	-	-	1	1	1	1
Conduct research on health leadership and	This major activity covers the following focus areas, not limited to:	Data-Informed Platform for Health (DIPH)	#	-	1	-	-	-	-
		Strategies for community engagement in	#	-	-	1	-	1	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
governance/stewardship	•Community engagement in the implementation of health programs. •Impact of health reforms on health systems performance. •Utilization of research evidence and community needs on health decision making •Equity and resilient health system •National health insurance management, FDA regulation, Regulatory reforms and governance, health sector reform agenda (BPR, BSC, HDA)	the implementation of health programs.							
		Utilization of research evidence and community needs on health policy formulation	#	-	-	-	1	-	1
		Equity of health system	#	-	-	1	-	1	1
		National Health Insurance, FDA regulation, Regulatory reforms and governance, Health Sector Reform Agenda (BPR, BSC, HAD…)	#	-	-	1	-	1	-
		Research on resilient health system	#	-	-	1	-	1	1
Conduct research on reproductive, adolescent, and community health issues	This major activity covers the following focus areas, not limited to: •Research on social determinants of health and other emerging health issues; •Perception of the community towards communicable and non-communicable diseases, health care services •The interrelationships and policy implications between health and other social domains of human life. •Factors that determine access to health services, especially in marginalized populations	Demographic and Health Survey (DHS)	#	-	-	1	-	-	-
		Research on social determinants of health and other emerging health issues;	#	-	-	1	-	1	-
		Health services for specific populations (Geriatrics health care (60 years and older, Disabilities, Eye, Ear, mouth health ……)	#	-	-	1	-	-	-
		Perception of the community towards communicable and non-communicable diseases, health care services	#	-	-	1	-	-	-
		Effective strategies for increasing male involvement in women and child health programs	#	-	1	-	1	-	-
		Community barriers that impede access to health care	#	-	-	1	-	1	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	•Community barriers that impede access to health care •Community satisfaction with the health system, •Population health, health-seeking behavior, determinants of utilization, coverage, outreach, referral, barriers to care, equity in access, demand for health services •Health services for specific populations	Factors that determine access to health services, especially in marginalized populations	#	-	-	-	1	-	1
		Population health (Morbidity and mortality patterns, Risk factors, Obesogenic environment, Natural or human-induced hazards, etc …)	#	-	-	1	-	-	1
		Community satisfaction with the health system,	#	-	-	-	-	-	1
		Conduct research on different Aspect of family planning	#	-	-	1	-	1	-
		Conduct research on safe motherhood	#	-	-	1	-	1	-
		Conduct research on abortion and related issues	#	-	1	-	1	-	-
		Conduct research on neonatal health and related issues	#	-	1	-	-	1	-
		Assess gender issues	#	-	-	1	-	-	-
		Conduct research on MM, infant, and child mortality	#	-	1	1	1	1	-
		Prepare policy brief on RH	#	-	1	1	1	1	-
		Prepare alternative policies on RH	#	-	1	-	1	-	-
		Conduct adolescent reproductive health	#	-	1	-	-	-	1
		Conduct assessments on the impact of STD/HIV/AIDS and related issues on adolescents	#	-	-	-	-	-	1
		Assess fertility/infertility and abortion conditions of adolescents	#	-	-	1	-	-	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Assess adolescent awareness and gender issues	#	-	-	-	-	1	-
Conduct policy, program, strategy, and guideline evaluations	This major activity includes evaluating different health policies, programs, & strategies outcomes and impacts. Efficacy, effectiveness, and feasibility of new therapeutic and other interventions/programs against priority diseases of the country.	Conduct evaluations on health policy and related frameworks	#	-	-	1	1	-	1
		Evaluate different health care and nutrition guidelines' implementations/effectiveness	#	-	-	1	-	1	-
		The interrelationships and policy implications between health and other social domains of human life	#	-	-	1	-	1	-
		Efficacy, effectiveness, and feasibility of new therapeutic interventions against Priority diseases of the country	#	-	-	1	-	-	1
		Evaluate Ethiopian public health emergency management performance	#	-	-	1	-	1	-
		Evaluate the effectiveness of laboratory readiness program	#	-	-	1	-	1	-
		Operational Research by Coaching Research (ORCA)	#	-	-	-	1	-	-
		Quality of preventive health: childhood immunization, antenatal and maternal care, child health care, quality of care for chronic conditions	#	-	-	1	-	-	-
		Maternal & New Born Health Service Improvement Program	#	-	-	-	1	-	-
		Evaluation of the Second Generation Health Extension Program's impact on health post capacity to prevent, prepare	#	-	-	1	-	-	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		for and respond to							
		Evaluate different vaccination programs	#	-	-	-	1	-	-
		Evaluate diseases eradication programs	#	-	-	1	-	1	-
		Evaluate diseases elimination programs			-	-	1	-	1
		Health system analysis, in-depth analysis, Count down to 2030 Ethiopia	#	-	-	1	-	-	-
		Undertake HSTP-II Midterm and end-term evaluations	#	-	-	1	-	-	1
		Evaluate health sector performance against SDGs targets	#	-	-	1	-	1	-
		Forecasting of the efficiency and effectiveness of the health system	#	-	-	1	1	1	-
		Evaluate NAPS	#	-	-	1	-	1	-
		Evaluate laboratory master plan	#	-	-	1	-	-	1
Improve vaccine and Diagnostics research, development	The long-term national plan is to establish national capacity for our own vaccine development (discovery to product/manufacture, system, and application). For the short, medium, and long-term goals, we would need to define what areas should be prioritized for vaccine development. It could be that national Institutes could collaborate on testing what the Institute has in the pipeline if it can fit into our plan in developing the capacity to	Identify, prioritize and develop research projects	#	10	1	1	-	-	-
		Conduct validation and verification workshop	#	-	-	1	-	-	-
		Conduct research and development on vaccines and Diagnostics	#	10	1	1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	develop our own vaccines in a decade or so								
Identify potential demand, unmet needs, and priority vaccines to be produced in Ethiopia	The selection of what vaccines to produce would depend on what technology is best. it would be wise prefer to invest in technology that would serve us in the next years than technology that would be out of use in the next few years- such as polysaccharide meningococcal based versus conjugate meningococcal vaccine. Priority is also given to technologies that can contribute to research capacity development, strengthen GMP and QMS know-how and etc. Other considerations would be ease of application, the possibility of upgrades,	Identify potential vaccine demand	#	-	1	1	-	-	-
		Conduct local vaccine manufacturing feasibility document	#	-	1	1	-	-	-
		Identify antigens and technologies to be used for vaccine production	#	-	-	1	-	-	-
		Develop incentive mechanism to facilitate sustainability of local vaccine production	#	-	-	1	-	-	-
		Exploring and implementing new business models, partnerships, synergies for local vaccines and Diagnostics Production and Development	#	-	-	1	-	-	-
		Explore funding mechanisms for vaccine local vaccines and Diagnostics manufacturing	#	-	-	1	-	-	-
		Conduct validation and verification workshop	#	-	-	1	-	-	-
Produce anti-rabies vaccine (Tissue Culture)		Produce tissue Culture vaccine	#	38000	38000	38000	38000	38000	-
		Monitor the efficacy of the Tissue Culture vaccine	%	100	100	100	100	100	-
Support and implement GMP for existing vaccine production system (CCV, NTV)		End to end technology transfer for CCV production	%	50	75	100	-	-	-
		Establish and improve QMS	%	30	42	54	66	78	100
		Retrofit production facility based on regulatory requirements	%	20	60	100	-	-	-
		Installation of equipment lying in the	#	-	-	1	1	-	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		premises and including installation and operation of Ultracentrifuge							
		Install Vial filling line system and made operationally	#	-	1	1	1	-	-
		Installation of equipment lying in the premises and including installation and operation of Ultracentrifuge	#	-	1	1	1	-	-
		Establish fully characterized MCB and WCB of Vero cells as per WHO requirements	#	-	1	1	1	-	-
		establish MOI for the infection and the virus growth kinetics	#	-	1	1	-	-	-
		Cell propagation, virus infection, di-activation, harvest, and pooling	#	-	1	1	-	-	-
		Formulation	#	-	-	1	-	-	-
		DSP	#	-	-	1	-	-	-
		Final testing and release	#	-	-	1	-	-	-
Invest in technical and managerial capacities by training (new processes, new analytical methods…)	The long-term plan is to build national capacity in vaccine development. The role of highly skilled scientists, technologists, engineers, and technicians in R& D is	Develop training program on vaccine production processes, new analytical methods…)	#	1	1	1	1	-	-
		Hands-on training for staff on some equipment, production process, and QMS	#	20	20	20	20	20	20

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	irreplaceable and perhaps the first and foremost item to be addressed because there is already a huge gap of skilled personnel in diagnostics and vaccine production capacity in Africa in general and in Ethiopia in particular. Short-term training on specific laboratory skills and know-how can be facilitated through either sending Ethiopians or by inviting experts from abroad.	Training and Operation of ultracentrifuge, VFL	#	0	20	20	-	-	-
Create national and continental health data hub/data repository with data backup and recovery, for seamless data sharing between diverse endpoints	This contains in creating national health data hub and data repository with data backup and recovery through standard data repository and building standard data security system	Standard data repository (ICT infrastructure) development	#	1	1	1	1	1	1
		Building standard data security system	#	1	1	1	1	1	1
Mapping and archival of prospective & retrospective data sets at national & sub-national levels.	These efforts are mostly aimed at centrally archiving health and health-related datasets at national data management centers. By integrating different sources and reducing duplication of effort, could aid in improving data usage for better decision-making. This also allows different researchers to obtain different datasets to perform their research depending on data sharing	Archival of prospective & retrospective available health and health-related data	#	197	300	350	360	370	380
		Mapping all possible data sources in all regional Health Bureau	#	0	14	14	14	14	14
		Mapping all possible data sources in NGO s and associations	#	2	43	43	43	43	43
		Establishing communication, follow-up of all government organizations including NGOs and associations	#	2	57	57	57	57	57

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	and management rules.	Creating sustainable systems and using secured electronic data-sharing platforms with all organizations and EPHI directorates for prospective data archival.	#	1	1	1	1	1	1
		Developing data quality monitoring system	#	0	1	1	1	1	1
		Scanning and archiving old documents	#	0	60	40	30	20	20
Digitizing hard copy documents and making them ready for reuse	Using various tools to digitize old hard copies and documents and store them in the appropriate place for potential use and decision making and for historical documentation.	Storing all research publications conducted by EPHI staffs using different reference management software	#	0	1700	70	50	30	25
		Develop and store the metadata on RTDS depending on the updated guideline.	#	100	150	170	180	190	200
Developing metadata for archived data sets, catalog and index health and health-related data	This covers creating metadata on RTDS and catalog and index health-related data using standard systems on RTDS enhances the open data system for the visibility of data sets to the public.	Developing data quality assurance guidelines	#	0	1	1	1	1	1
Enhancing data quality status of secondary data and improving its use for decision making	This is to enhance the quality of all secondary data archived to EPHI by conducting regular data quality assessment and grading	Conducting regular data quality assessment for existing secondary data and recommending for future improvement	#	0	1	12	12	12	12
		Conducting Data quality grading based on the assessment of the data and making a decision for data sharing	#	0	4	4	4	4	4

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Providing different data quality training and support	#	0	2	2	2	2	2
		Developing Data collection tools for different EPHI research Directorates	#	1	2	2	2	2	2
Collect data set from a different source		Data sets from EPHI	#	197	60	90	110	108	111
		Data sets from stakeholders	#	262	200	300	350	360	370
		Data sets from NGO and association	#	65	140	210	245	252	259
		Assess and review the data sets and ready for further analysis	#	3	10	10	10	10	10
		Share the data set as per request based on sharing policy	#	27	66	114	119	124	129
		scanned documents archived to data warehouse	#	0	60	40	30	20	20
		Conduct data quality assessment	#	0	1	12	12	12	12
		Carry out data security and privacy methods	#	24	24	24	24	24	24
		Conduct Data awareness and advocacy workshops/conferences	#	1	2	2	2	2	2
Providing technical support to other teams and EPHI Directorates	This major activity majorly contains providing need-based technical support to different EPHI directorates to capacitate their data management systems and develop data collection tools.	Developing data collections tools	#	1	2	2	2	2	2
		Providing system development	#	2	2	2	2	2	2
Digitization/automation of data systems and regular update with data visualization/dashboards (Digitization/automation of data systems and regular	These major activities cover the automation of data systems includes data reprocessing and auto-update for the data for the EPHI data visualization system	Automating data cleaning and data update. Includes error handling; data entry page; translating data results into relational databases.	#	1	2	2	2	2	2
		Managing archived data, review for its	#	3	10	10	10	10	10

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
update with data dashboards)		content, preparing and cleaning, and ready for data analysis							
		Endorse national data sharing policies, strategies & implementation (manuals /arrangements/	#	1	2	2	2	2	2
Ensure data governance (data sharing protocols/data sharing regulation) to enhance open data system and open data access to advance open research landscape, improved research integrity, innovation, and discovery	This activity majorly contains developing and ensuring data sharing policy and strategy and assuring its implementation to overcome the open data access system. This also allows researchers and policymakers in improving data sharing trends and use at the national level for different research analyses and decision-making.	Ensure the implementation of open data access system throughout the health system (FAIR principles)	#	0	1	1	1	1	1
		Ensure the implementation of standard data collection tool development & ensure its integrity throughout the process	#	0	1	1	1	1	1
		Facilitate innovation and discovery through the area	#	0	1	1	1	1	1
		Conduct interoperability assessment nationally & across African regions	#	1	1	1	1	1	1
		Setting minimum standard (Protocol) for the databases to be interoperable with the existing system	#	1	1	1	1	1	1
Make data systems interoperable and interconnected with interoperability architecture within EPHI and across the region.	These major activities cover the health information systems interoperable and interconnected with interoperability architecture within EPHI and across the country to create one health system and building national data analysis and platform for data policy-making	Making the databases interoperable for wider use in the countries health system and across the regions	#	0	0	2	2	2	2
		Database creation and standardization across the region	#	0	0	2	2	2	2
		Provide standard training for staffs on (database development, data security	#	0	2	2	2	2	2

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	decisions and the scientific community.	system development, and other training							
		Capacitating regional health Bureaus and other stakeholders on data management systems	#	0	4	4	4	4	4
Capacity building and technology transfer among different data actors	We need to leverage current and upgraded technologies as a national data center to progress existing systems to a global level of competence in secondary data. This major activity covers providing training and other capacity building for stakeholders annually or as needed.	Conducting training need assessment and providing different software training	#	0	2	2	2	2	2
		Conduct different panel discussion and public forums for the advocacy implementation	#	0	1	1	1	1	1
		Building different collaborative engagements with stakeholders	#	0	1	1	1	1	1
		Maintain and develop the system for partners	#	0	1	1	1	1	1
Improve data use culture through advocacy and promotion	These major activities cover how to improve the data use culture through advocacy and promotion by conducting national data campaign and celebrating data days regularly	Conduct national data campaign and celebration of data days regularly	#	0	1	1	1	1	1
		Regular Visit and engagement with HDSS sites	#	2	2	2	2	2	2
Apply data science, Machine Learning (ML)/Artificial Intelligence (AI), big data analytics for health and fostering and enriching public health intelligence	This major activity includes the applications of advanced health data analytics through implementations of data science concepts to extract knowledge from big and complex health data which are critical to accelerating discoveries and innovations that can impact public health	Tracking SDG, HSTP, and GTP targets to analyze attainment at the national level on good health and well-being in relation to its indicators.	#	1	5	10	10	10	5
		Develop and maintain ML/AI-based predictive models on big and complex health data to assess correlation and association of risk factors with diseases and/or mortalities; to predict	#	0	1	1	1	0	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		effective measures and/or policies as mitigation or intervention; monitor effective health resource allocation and utilization using NHA, and drugs and logistic with the national burden of diseases; to predict magnitude and severity of certain diseases in near future.							
Advance health data analytics, modeling, forecasting, integrated analysis, heterogeneous and geospatial analysis through development and application of advanced statistical and mathematical methods	This major activity covers ways of maximizing the utilization of multiple available health data sources and advancing medical/public health research and/or M&E, to fill the evidence gaps on evidence-informed health decisions through the application of rigorous scientific methods.	Geospatial analysis and spatial models for health data and production of updated maps at national and sub-national levels on BOD, risk factors, mortality and morbidity estimates, climate-driven health products, and others	#	0	4	11	10	11	10
		Identifying data sources for mortality estimation, identifying possible methodologies and models, developing Integrated Mortality Modelling for all age groups, by sex, for all locations with the cause of death at the national level, generate and communicate proper evidence briefs, and collecting feedback, and reports of this mortality modeling and results. Finally annually updating the mortality models and methodologies, and data source inputs.	#	1	6	8	5	6	6

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Longitudinal data analysis and modeling: (eg: viral load data at national and subnational level)	#	0	1	2	3	3	3
		Infectious Disease data analytics and modeling by applying GLM, time-to-event modeling, competing for risk modeling ○ COVID 19 and COVID 19 related datasets ○ Epidemic(Cholera.) datasets ○ Measles datasets ○ HIV/AIDS datasets	#	1	2	2	3	3	3
		RMNCH and related coverage indicators analysis and modeling	#	5	10	10	10	5	5
		NTD data analysis and modeling to enhance national access to interventions for the prevention, control, elimination, and eradication of neglected tropical diseases	#	0	2	2	2	2	2
		GERD modeling to identify its major health gains.	#	1	0	1	0	0	1
		Annual NHA and BOD data triangulation for national and subnational	#	0	1	1	1	1	1
		Annual Logistic and Drug vs BOD data triangulation for national and subnational	#	0	1	1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
Maximize the use and utilization of local health datasets through the generation of extensive data quality assessment reports and guidelines for applying advanced health data analytics methods.	This major activity covers the applications of in-depth quality assessment techniques on local datasets to identify gaps, which hinders proper data use and apply advanced data analytics method to extract new insights and knowledge accordingly.	Quality assessment reports, and guidelines on applying advanced analytics methods on PHEM surveillance and case management data	#	1	0	0	1	0	1
		Quality assessment reports, and guidelines on applying advanced analytics methods on Emergency Obstetric New-born care	#	0	1	0	0	0	0
		Quality assessment reports, and guidelines on applying advanced analytics methods on DHIS-2 datasets	#	0	0	1	0	0	0
		Quality assessment reports, and guidelines on applying advanced analytics methods on HDSS datasets	#	0	0	0	0	1	0
		Quality assessment reports, and guidelines on applying advanced analytics methods on Cancer registry	#	0	1	0	0	0	0
		Quality assessment reports, and guidelines on applying advanced analytics methods on Vital registration	#	0	0	1	0	0	1
Developing and maintaining national health data analytics and visualization hub	This activity is required to provide data visualization modules that provide an accessible way to see and understand trends, outliers, and patterns in health data for generate data-driven solutions. This analytics and visualization hub is very interactive with enormous	Presenting analyzed or estimated trends of national health for different diseases in an interactive manner, using various visualization tools such as maps, bar charts, treemaps	#	7	10	13	12	14	15
		Comparing diseases and patterns of their risk factor along with the trends of socio-economic, behavioral, and	#	4	4	6	7	9	6

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	visualization galleries; simple to use and openly accessible; useful in quantifying and presenting health loss from different diseases, injuries and risk factors; helpful in assisting policymakers and in general health workers to understand the true nature of this country's health care challenges; useful in rapidly characterizing, identifying and estimating infectious disease parameters and predicting the outcomes.	biological factors.							
		Providing information on how trends in national health have changed over periods of time and identify indicators forcing these changes.	#	0	1	2	4	3	3
		Drill down from a national representation into specific details for regions, zones, and woredas for a comprehensive view of the country's health profile.	#	0	1	2	5	8	11
		Presenting comparisons of various causes of death at a national and regional level by applying advanced analytical methods and visualization mechanisms to provide profound representation and knowledge, to point out the leading causes of death. Tracking SDG ad HSTPII indicators for examining ad presenting national attainment	#	1	3	4	3	5	6
		Presenting real-time analytics and modeling for infectious diseases is the other role of the platform. Estimating and presenting the magnitude of the disease, disease severity and mortality differential across demographic groups of infectious diseases have significant input for prevention and control plan and response actions.	#	1	1	3	7	5	9

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Building re-usable, generic visualization scripts, and visualization libraries maintained in our online public repositories.	#	10	20	50	100	200	300
Developing a National health data catalog	This activity is aimed at providing a comprehensive health data catalog at all levels, extensive information on methodologies applied in the analytical work, both for source data extraction and results in a generation, and finally implementation of source codes or simulation for all users. The goal is to help people locate data by cataloging information about data including the topics covered, by providing links to data providers or explaining how to acquire the data, and by providing the data directly for download.	Building automated query tool for compiling the required variables or results by data availability, context, sex, metric (number, percent, rate), geography, keywords, data type, relevancy, title, and time period which included in the national health data analytics and visualization hub.	#	0	2	2	2	2	2
		Developing and maintaining a platform for providing information of data input sources synthesized I the analytics and visualization; ad also linking the resources accordingly with Research Tracking Database System.	#	0	1	1	1	1	1
		Building an active online repository for providing codes for all statistical, analytical, processing, estimation, and visualization works.	#	10	20	50	100	200	300
		Developing and maintaining a platform that will allow users to share data.	#	0	1	1	1	1	1
Python package for Ethiopia health system	This major activity is aimed to provide easy access to different data analytic and machine-learning techniques utilized by the team,	Creating a standard preprocessing library that can automate to clean, integrate, transform, and reduce different types of health datasets such	#	1	1	2	2	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
(PyEhealth Package)	which help public health and medical researchers to synthesize, and utilize evidence generation methods using standard data science procedure	as Survey (EDHS, Malaria, and service provision assessment, DHIS2, DSS), Electronic Medical Record (EMR), patient/diseases registries, and CHIS/eCHIS2, etc.							
		Creating a library that can automate the process of Explanatory Data Analysis (EDA) such as Data quality checker, statistical test, qualitative test, and provides a detailed report with visualization.	#	1	2	2	1	1	1
		Building a generic library that can automatically select, compose, and parametrize different advanced and classical machine learning models.	#	0	1	1	2	2	2
		Develop unified APIs, detailed documentation, and interactive examples across various types of health datasets and algorithms.	#	1	1	2	2	3	3
Developing national health Geo-portal	The development of the geo-portal enables the users to visualize health and health-related geospatial information in the form of dynamic and interactive maps. It helps decision-makers to easily visualize the Spatio-temporal patterns/distribution of health risk factors, disease prevalence, etc… It	Requirement analysis & validation	%	0%	40%	0%	0%	0%	0%
		Designing the geoportal	%	0%	15%	0%	0%	0%	0%
		Implementation & Testing	%	0%	40%	0%	0%	0%	0%
		Integration with NDMC portal	%	0%	5%	0%	0%	0%	0%
		Continuous monitoring and data update	#	0%	1	1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	can also be a geospatial health information share point for different users. The work includes requirement analysis up to integrating with NDMC portal and continuous monitoring and updating of the geoportal with geospatial data/information.								
Development and implementation of geospatial (health & health-related) data sharing policy	This policy is a legal framework that fosters wider and safer use of geospatial health data. It provides clear guidance on what type, format, and scale/resolution of geospatial health data to be shared among different partners, organizations, and the public in general.	Identifying users & user needs through need assessment	#	0	0	0	1	0	0
		Signing MoU with geospatial data custodian of the country	#	0	0	0	1	0	0
		Engaging stakeholders for identifying which data to be shared with whom	#	0	0	0	1	0	0
		Policy preparation & review by harmonizing with the spatial data sharing policy of the country	#	0	0	0	1	0	0
		Policy Approval	#	0	0	0	1	0	0
Application of geospatial technologies for systematic management of geospatial data	Based on the nature and type of geospatial data robust geospatial technologies which facilitate management and sharing of data will be implemented. This activity will include implementing industry-standard geospatial technology, managing data by enforcing spatial	Identifying the right technology	%	20%	0	0	0	0	0
		Implementation of selected technology	%	80%	0	0	0	0	0
		Continuous data management and sharing	#	1	1	1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	and attribute integrity and sharing geospatial data with the right expert/user at NDMC.								
Delivering Training on geospatial concepts and technologies	Providing training for experts of NDMC, EPHI, and other Collaborators	Conduct Need Assessment	#	0	1	0	1	0	1
		develop and/or revise training manuals	#	0	1	0	1	0	1
		Deliver Training	#	0	1	0	1	0	1
		Collect Feedback	#	0	1	0	1	0	1
Establishing and Implementing Web-based Early Warning, Alert and Response System and platform to enhance public health emergency early warning, prevention, detection, response, and recovery to disease outbreaks.	This work encompasses assessment and customization of existing early warning response systems, development of a new platform; increasing data capture capacities of existing sentinel sites, capacity building of stakeholders, model development conduct consultative workshops, and facilitate research publication and dissemination for end users. This activity is a collaborative work that NDMC will undertake with PHEM, AAU, ICTP, and others.	Conduct Capacity Assessment including sentinel site on Existing EWARS via applying model selection and using heterogeneous data	#	0	1	0	0	0	0
		development/customization of platforms that detect early warning, prevention, detection, response, and recovery	#	0	0	3	0	0	0
		Predicting malaria outbreak,	#	0	0	3	3	3	3
		Predicting dengue fever outbreak,	#	0	0	0	3	3	3
		Predicting cholera outbreak	#	0	0	0	2	2	2
		Deliver report of Predicted malaria outbreak for evidence brief	#	0	0	1	1	1	1
		Deliver report of Predicted dengue fever outbreak for evidence brief	#	0	0	0	1	1	1
		Deliver report of Predicted cholera outbreak for evidence brief	#	0	0	0	1	1	1
		Undertake customer satisfaction assessment on early warning system and delivered products via feedbacks and reports	#	0	0	0	1	0	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Output dissemination	#	0	0	3	8	8	8
		Training Module preparation	#	0	0	0	1	0	0
		Conduct training	#	0	0	0	25	25	25
		Platform rollout	%	0	0	50%	80%	100	0
Conduct statistical and mathematical modeling, computational methods, and visualization techniques		Identify data science techniques	#	2	2	1	3	3	5
		execute (develop and deploy) data science techniques	#	1	1	1	2	2	4
		Conduct training about data science	#	0	24	20	20	20	20
		Conduct scientific skill and knowledge attending on computational methods, modeling and data Science sessions/workshops/seminars	#	2	2	3	3	3	3
		identify and prepare for health data analytics and disease modeling	#	3	5	5	5	8	8
		develop metrics	#	0	0	2	1	1	1
		identify disease (infectious and non-infectious) models	#	3	5	5	5	8	8
		Develop and maintain disease (infectious and non-infectious) models	#	1	0	2	3	2	2
		develop and execute models on climate	#	0	1	1	1	0	0
		# of climate models on Human comfort Index developed/customized and executed	#	0	0	1	0	0	0
		compute and map Human Comfort Index values	#	0	0	0	12	12	12
		Number of a delivered report on Human comfort index and climate impact for evidence briefs	#	0	0	1	0	0	0
		develop and execute models and platforms on geographic information system	#	0	0	0	1	0	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		develop and execute models for EWARS using multiple data sources	#	0	0	3	8	8	8
		communicate and disseminate Early warning signals and reports	#	0	0	2	4	4	4
		identify platforms, systems, visualization dashboards, portals, and data communication channels	#	10	15	15	20	20	15
		Prepare scientific model outputs on visualization	#	10	20	30	40	50	60
		Conduct sessions on vetting scientific outputs	#	0	1	2	2	2	2
		incorporate health datasets and support by PyEhealth package	#	1	1	1	2	2	2
		Develop and update Geoportal	#	0	1	0	1	0	0
		Develop and update geospatial technology	#	0	0	1	0	0	1
Understand and quantify the specific effects of climate variability and change on disease burden and on opportunities and effectiveness in the public health response.	Climate is a key variable in managing the overall burden of disease, particularly in developing countries where the ability to control climate-sensitive diseases constrains the prospects of achieving the United Nations Millennium Development Goals. To mitigate their adverse effects, the health sector needs to understand and quantify the specific effects of climate variability and change both on the overall disease burden and on opportunities and effectiveness in the public health response. This work encompasses future adaptation strategies and	Assess vulnerability to, and the health impacts of, climate change, and to develop new responses (Air pollution, climatic factors)	#	0	0	1	0	0	1
		Customizing/developing models of Human Comfort Index via assessing existing early warning systems	#	0	0	1	0	0	0
		Compute and Map Human Comfort Index	#	0	0	12	12	12	12
		Deliver report for evidence brief	#	0	0	1	2	0	0
		Jointly develop health and climate atlas	#	0	1	0	0	0	1
		Conducting a quantitative and qualitative vulnerability assessment	#	0	0	1	0	0	1
		Quantify health effects of drought	#	0	0	1	0	0	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	understanding fully the impact of the climate on the existing disease burden and current interventions.	Deliver report for evidence brief	#	0	0	0	1	0	1
Support the automation and digitization work of the institute, the centers, and the team.	This major activity includes developing and maintaining web platforms and dashboards for the institute, the center, and the unit to facilitate basic routine activities. This Work encompasses assessment, design, and implementation of Enterprise Resource Planning solution, which is modularized and integrated within one platform for different operations. This activity will be the first step and initiation of this scale towards creating a Paperless institute. This integrated and all-in-one solution will automate the entire processes operating in the institute and can generate holistic reports for decision-making. Moreover, this activity includes providing technical support for national* need in moving towards a digitization era, by proposing and developing various visualization dashboards, platforms, portals, and enhanced data collection channels and systems.	Automate NDMC unit's routine activities. In addition, providing support in already developed or newly proposed systems by other case teams. - BoD health Atlas - EG&T evidence generation ad dissemination process - EG&T Africa first health cost-effectiveness database - RTDS database system redesign and enhancement - Automated analyzed result submission platform	#	1	1	1	1	1	1
		Conduct an extensive need assessment by considering technology, human resources and, leadership, and governance domains to get input for the proposed ERP system.	#	0	1	0	1	0	1
		Based on the assessment of the existing system and developed SRS develop and maintain the required module automating the institute's work process.	#	0	1	0	0	1	0
		Developing data collection applications with cleaner, faster, and	#	0	0	1	3	3	0

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		the easier-to-use user interface; with effective online capabilities; with reliable and robust data communication channels and databases; with authentication, authorization, and partner APIs; with features that enable seamless report generation.							
		Identify, develop, deploy and provide support on visualization dashboards, platforms, systems, and enhancing or developing data collection toolkits, connection channels, databases, and portals per the institute, ministry of health, and other stakeholders' requests and/or needs.	#	2	2	3	5	5	2
		Launching advocacy platforms for collecting feedback from stakeholders, and general users, and promoting the platforms.	#	0	1	1	1	1	1
		Develop System Requirement Specifications (SRS) for planning the functional requirements of the platforms, systems, portals, visualization dashboards, and data collection channels, and providing system documentation, and user guidelines at the end of the	#	3	5	5	5	5	5

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		deployment stage.							
		Develop a training manual and provide training sessions for the system users.	#	0	1	1	1	1	1
Modernize and standardize the data management of the center and establish a data center unit with a disaster recovery site	Dynamic visualization platforms follow a BASE (Basically Available, Soft State, & Eventually Consistent), model to provide an effective connection channel between the front-end and back-end modules. Moreover, in this constantly expanding data world, scalable, adaptable ad secure data center with its own disaster recovery points is highly crucial to provide confidentiality, integrity, and availability for our nation's health data.	Transforming stored and archived data sets from structural data format to unstructured datasets	#	0	1	0	0	1	0
		Standardize the units operating systems and application software	#	1	1	1	1	1	1
		Site assessment and selection according to the give criteria and guidelines.	#	0	0	1	0	0	0
		Facility design and procuring the required items (networking devices, servers, storages, cabling, generators, ACS, security devices,) the specification must be done including for the DR site.	#	0	0	1	0	0	0
		Preparing RFP to select implementer.	#	0	0	1	0	0	0
		International bid floating and evaluating the bidders	#	0	0	1	0	0	0
		Supervising and monitoring the implementation	#	0	0	1	0	0	0
Build data science capacity: Fellowship and internship programs. In addition, providing short-term standard training with	This major activity will address, lack of knowledge and skill at both national and continental levels, to cope up with constant increment in both collected and stored health-	Course materials preparation for both basics of data science and advanced data science, for face-to-face sessions.	#	3	3	0	0	0	6
		Course manual preparation for both basics of data science and advanced	#	0	6	0	0	0	6

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
training manuals and curriculum on basics of health data science, and advanced data science	related data in terms of volume, velocity, and variety. The short-term training for both basics of health data science and advanced data science will be given face-to-face for local trainees and online sessions for trainees from various Africa countries.	data science, for online sessions.							
		Facilitate the review and accreditation of the course materials	#	0	12	0	0	0	12
		Develop and provide training of trainers (ToT) for both basics of data science and advanced data science training that will be given face-to-face and online.	#	0	4	0	0	0	4
		Provide a pilot test for both basics of data science and advanced data science training	#	0	1	0	0	0	1
		Prepare course environments (computer laboratory, test servers, stationaries, online repositories, and ELMS)	#	3	2	0	0	0	0
		Provide the training for trainees selected according to the selection criteria.	#	0	10	10	10	10	10
		Collect reports on how the trained experts are utilizing the concepts provided during the training	#	0	1	2	2	3	3
Increase the unit's bio (statistical) and mathematical modeling, and data science utilization capacities	Strengthening the abilities or capacities of individual to solve problems in respective sector and meet their objectives on a sustainable basis is essential. Thus, this major activity aimed at building data science and analytic capacities on machine learning/ artificial	Identify gaps and providing rationale for the proposed on the job training, and/or workshop	#	0	3	3	3	3	3
		Identify partners, collaborators, or organizations with best practices in geospatial analysis/technologies, and prepare experience-sharing platforms	#	0	1	1	1	1	1
		Identify partners, collaborators, or	#	0	1	1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	intelligence, big data analytics of the team through intensive training, work (field) visits, fellowship, workshops, on-job training, and internship.	organizations with best practices in advanced health data analytics and health data science, and prepare experience-sharing platforms							
		Experience sharing on Early Warning Systems	#	0	1	0	0	1	0
		Equip knowledge of R, Python, and GIS tools and state of the art tools	#	0	0	1	1	0	1
Providing scientific platforms for advocating scientific methodologies, and developed platforms	This major activity includes preparing various experience-sharing platforms for advocating and promoting the unit's analytical and visualization work.	Arranging workshop/seminars/webinars to validate and advocate developed mortality model	#	1	0	1	1	1	1
		Arranging workshops/seminars/webinars to validate and advocate models and techniques developed using data science approaches and using advanced (bio) statistical and mathematical models.	#	0	1	1	0	1	1
		Arranging workshop/seminars/webinars to validate and advocate geospatial outputs & models	#	0	1	0	1	0	0
		Arranging workshop/seminars/webinars to advocate PyEhealth	#	0	1	0	0	1	0
		Arranging workshop/seminars/webinars to advocate health data analytics and	#	1	1	1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		visualization hub							
		Arranging workshop/seminars/webinars to advocate and promoting national health data catalog	#	0	0	0	1	0	0
		Arranging workshops/seminars/webinars to provide training on proper health data utilization by applying advanced data management techniques.	#	1	1	1	1	1	1
		Arranging workshop/seminars/webinars to promote the team's digitization and/or automation activity to transform the institute and the health sector	#	0	0	0	1	0	1
Strengthen collaboration and engagement with AAU, UoG, IHME, EPHI (NTC, PHEM, and other directorates and departments), P2P, 10 Academy, MOSHE, INSA, ABReN, WB, and other institutes and organizations to advance the centers work.	This major activity is mainly focused on creating an experience-sharing platform on the development, application, and validation of advanced statistical and mathematical models, and data science techniques, and the generated results. In addition, the activity is designed to make sure continuity and sustainability of health data science training that will be undertaken by the center.	Identify national health priority research areas, and (bio)statistical expertise in collaborative and partnership health and medical-related research projects	#	1	1	1	2	2	2
		Establish national , continental, and global collaboration and partnership for developing health and climate atlas	#	0	0	1	0	0	0
		Collaborate in the advancement of public health emergency early	#	1	1	1	0	0	0

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		warning, prevention, detection, response, and recovery models and platforms							
		Preparing and approving geospatial data sharing policy.	#	0	0	1	0	0	1
		Establish national , continental, and global collaboration and partnership for utilizing data science concepts in our health sectors	#	1	1	1	1	1	1
		Establish national, continental, and global collaboration and partnership for properly utilizing national health data by applying advanced data quality assurance techniques, advanced mathematical models, forecasting methods, integrated and heterogeneous data analysis.	#	1	1	1	1	1	1
		Prepare and facilitate the authorizations of MoUs/TORs/other formal and legal agreements.	#	1	1	2	1	2	1
Develop and customize innovative burden of disease theories and concepts, methods, and techniques	This major activity covers the development of methods, theories, and concepts to estimate the national burden of diseases	Develop and customize theories for national BoD estimate	#				1		
		Develop concepts for national BoD estimate	#			1			
		Develop methods and techniques for national BoD estimate	#			1			
Develop and execute national and sub-national	This major activity intends to develop and execute burden of	Develop national burden of disease implementation working guideline	#			1			

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
burden of disease implementation working guideline	disease Implementation of working guideline considering available data, skill and knowledge, national priorities, priority metrics, and computational powers of the institute	Execute national burden of disease estimate using the developed working guideline	#			1	1	1	1
		Develop sub-national and local burden of disease implementation working guideline	#			1			
		Execute sub-national and local burden of disease estimate using the developed working guideline	#			1	1	1	1
Provide national , sub-national, and local burden of disease, and risk factor estimates	The burden of disease estimates have been instrumental to revise Essential Health Service Package, to develop NCD strategies and interventions, to monitor and evaluate HSTP II with its M&E framework and indicators, to evaluate health progress in the country	Provide population and demography estimates (Life expectancy, health adjusted life expectancy, fertility, mortality, and others)	#		1	1	1	1	1
		Provide UHC coverage and Socio-demographic index estimates	#			1	1	1	1
		Provide cause of death and premature mortality estimates for specific diseases	#			1		1	
		Provide morbidity and disability estimates for specific diseases	#			1		1	
		Provide health risk factor estimates	#			1		1	
		Conduct local burden of disease estimates	#				1		1
		Conduct geospatial analysis using available and accessible data sources	#		1	1	1	1	1
Provide burden of disease estimates for national and subnational SDG and HSTP	This major activity intends to monitor and evaluate SDG and HSTP indicators using BOD estimates	Provide burden of disease estimates for national and subnational HSTP indicators	#			1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
indicators		Provide burden of disease estimates for national and subnational SDG indicators	#			1	1	1	1
Produce annual national and subnational health atlas, epidemiological disease profiles	The production of health atlas and epidemiological diseases profile is used to make informed decision making at the national and sub-national level	Produce annual national and subnational health atlas	#	1		1		1	
		Produce annual national and subnational epidemiological disease profiles	#		1	1	1	1	1
Provide strategic support to MOH and partners on the burden of disease issues	This major activity intends to provide strategic support to MOH and partners by supporting the proper utilization of BoD estimates	Provide training on BOD estimate utilization for MOH and partners	#		1	1			
		Provide technical support on strategic document health policy and digital blueprint development	#	1	1	1			
Provide support to Regional Health Bureaus and Regional Public Health Institutes on the burden of disease-related issues	This Major activity is about cascading the utilization of BoD estimates to the regional level by establishing focal points and providing proper training	Give training for a focal person working at the regional health bureau and regional PHI on sub-national BoD estimates	#		1	1			
		Assign BoD focal point at regional health bureau and regional PHI	#		1				
Strengthen national and international burden of disease collaboration	This major activity is about strengthening collaboration and facilitating skills and knowledge transition focusing on the burden of disease methods, techniques, and estimates with EPHI, partners, different universities in the country, research institutes, and BoD collaborators	Conduct need and gap assessment GBD data utilization	#		1				
		Provide training on the burden of disease methods, techniques, and Utilization of GBD estimates for MoH, Regional health bureaus, School of public health, and Medicines and networks BOD national collaborators.	#			5	5	5	3
		Integrate GBD methods in the school of the public health curriculum	#					5	

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Organize cluster-based seminar and workshop on the use of GBD data	#			5	5	5	3
Serve as sub-Saharan Africa burden of disease regional hub in collaboration with Africa CDC, National Public Health Institutes in Africa, WHO, and others	This major activity includes establishing a sub-Saharan Africa burden of disease regional hub, at the institute, conduct promotional workshops, and developing a data sharing and governance system.	Map and analyze stakeholders	#			1			
		Develop data sharing and governance policy	#				1		
		Conduct advocacy and promotion workshops	#					1	
		Establish sub-Saharan BoD hub at EPHI	#					1	
Provide updated annual burden of disease estimates for National Health Account and National Drug and Logistic data triangulation working guideline	This major activity includes preparing national and subnational burden of disease estimates for triangulation analysis with MOH and stakeholders using Health Account and National Drug and Logistic data	Prepare burden of disease estimates for National Health Account triangulation	#	1		1		1	
		Prepare burden of disease estimates for National Drug and Logistic data	#			1		1	
Triangulate and synthesize national burden of disease estimates with UN, World Bank, and other estimate sources and national research outputs	This major activity covers regular burden of disease data triangulation and synthesis with related estimates with UN , World Bank, Central statistical agency and other research institutes	Identify priority topics and develop a protocol on methods, data search and get approval from the center	#		1	1	1	1	1
		Conduct triangulation of different data source estimates and research findings	#		1	1	1	1	1
Develop manuscripts and synthesize evidence briefs using GBD and other national data sources	This major activity covers preparation of manuscripts, evidence briefs, host dissemination workshops and seminars using GBD and other data sources	Prepare manuscripts and publish in reputable journals	#	9	10	14	15	15	15
		Develop evidence briefs	#	9	10	14	15	15	15
		Host dissemination workshops and seminars	#			1	1	1	1

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
Prepare preparedness documents and frameworks	With the availability of preparedness documents and frameworks made before the occurrence of emergencies, it would be easy for the response in mobilizing required manpower, run the supply chain and logistics management in a short period of time during an emergency for coordination.	Prepare preparedness documents including regulations, policies, and mutual aid agreement.	#		1	1	1		
Develop different guideline and frameworks for strengthening PHEs	To frame the activities being conducted to strengthen public health emergency management guidelines, frameworks and manuals were required.	Develop health system resilience framework	#	0	1	0	0	0	0
		Develop health system resilience road map	#	0	1	0	0	0	0
		Develop standard health system resilience training module	#	0	1	0	0	0	0
Establish/strengthen public health emergency management structure at all level	The existence of strong PHEM structures with trained PHEM officers helps in improving the potential capability towards readiness. Therefore, the structures would be capacitated and strengthened by providing technical support and intensive training across all levels. / To facilitate early detection, timely response, and establish a proactive public health emergency management system, PHEM structure should in place and be strong at all levels	Assign dedicated PHEM officer at the health center	%	0	5	12	19	26	35
		Provide PHEM basic training for PHEM officers at the health center	%	0	100	100	100	100	100
		Provide Frontline Field epidemiology training program for woreda ,MOD, federal police PHEM Officers	%	21	41	61	81	100	100
		Provide supportive supervision and feedback for public health emergency management structures at all level	#		2	2	2	2	2
		Conduct assessment of PHEM status at a health facility, Woreda, zonal and regional level	#	0	0	1	0	0	0
		Develop a roadmap to reorganize PHEM structure from national to health facility level	#	0	0	1	0	0	0
		Establish PHEM team at woreda level	%	0	0	0	10	10	10
		Establish PHEM team at the health facility level	%	0	0	0	10	10	10
Develop leadership capacity at individual, organizational and system level	All staff and leaders of public health emergency management deal with leadership practices before, during, and after emergencies. Therefore, leadership capacity is required from all members of	Conduct leadership need assessment	#	0	1	0	0	0	1
		Develop a roadmap for Public Health Emergency leadership capacity development	#	0	1	0	0	0	1
		Provide leadership training	#	0	20	20	20	20	20

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	PHEM at any position.								
Strengthen workforces for the purpose of PHEs	A trained health workforce is a very critical component of the public health emergency management system.	Provide health system resilience training for PHEM officers and health workers at all level	#	0	72	120	240	240	300
Build leadership capacity for national and regional PHEM staff.	Through improved leadership skills, the productivity of the PHEM staffs would increase; they would also make evidence-based decisions, Improve their communication and coordination capacity and promote self-awareness	Provide leadership skills training for all national PHEM staffs	#	40	30	30	30	30	30
		Provide leadership skills training for regional PHEM staffs	%	0	20	20	20	20	20
Strengthen domestic public health emergency financing including the contingency funding plan.	Enhanced capacity in mobilizing domestic resources -sustainable and local budget for the emergency preparedness and response at all levels maintain the timely responses when emergencies happen.	Conduct Advocacy workshops for leadership at all levels in allocating budget for PHEM activities	Number	0	4	4	4	4	4
Develop and implement Multi-hazard national public health emergency preparedness and response plan based on vulnerability risk assessment.	National and regional PHEM centers have a plan for Vulnerability Risk Assessment and Mapping for public health hazards so as to work on prevention and preparedness activities. This national and regional level exercise will help to prepare EPRP by quantifying the required materials and systems for a response. To improve the VRAM exercise and EPRP preparation process	Conduct Woreda level VRAM exercise	%	8	16	24	32	40	50
		Conduct Zonal level VRAM exercise	%	0	20	40	60	80	100
		Conduct Regional level VRAM exercise	%	100	100	100	100	100	100
		Conduct National level VRAM exercise	#	1	1	1	1	1	1
		Prepare Zonal level EPRP based on VRAM Exercise finding	%	0	20	40	60	80	100
		Prepare regional and National level EPRP based on VRAM Exercise finding	%	100	100	100	100	100	100
Improve the availability of the necessary logistics (Emergency Supply Chain Management)	Provide an essential competency for ESC management to help the country effectively prepare for respond to epidemic and pandemic threat	Conduct regular inventory of Emergency Drug & Kits (EDKs) and other supplies at the national level	#	2	2	2	2	2	2
		Conduct regular mapping of Emergency Drug & Kits (EDKs) and other supplies at the national level	#	2	2	2	2	2	2
		Train logistic officers on emergency supply chain management training at *Woreda* level	%	8	20	20	20	20	20
Strengthen health facilities and		Conducted Simulation Exercise (SimEx)	#	0	2	2	2	2	2

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
system readiness for PHE		Conducted Health Resource Assessment Monitoring (HRAMs)	#	0	1	1	1	1	1
		Conducted Service Availability and Readiness Assessment (SARA) for PHE	#	0	1	1	1	1	1
Strengthen post-emergency health system recovery	During the post-emergency period, the community suffers because of the damage to health infrastructures. Therefore, timely and comprehensive recovery should be practiced.	Conduct post-disaster need assessment for major public health emergencies/disasters	%	0	20%	20%	20%	20%	20%
Ensure provision of essential health service during emergency	Emergencies may shift the attention of the health system toward the response activity though essential services should not be interrupted.	Develop health service continuity plan	#	0	0	1	1	1	1
Establish a real-time and digital surveillance system	It significantly improves the real-time surveillance information collection, generation, and communication for the decision-making process so as to reduce PHE-related mortality and morbidities. Besides, it can improve the data quality using the data quality monitoring features embedded in the system.	Adapt / revise DHIS2 platform for PHEM	No	1		1		1	
		Capacity building for DHIS2 platform for PHEM officers	No	2638	4116	-	-	4116	-
		Capacity building on data management, information generation, and sharing	No		-	2500	-	-	-
		Capacity building on advanced data management, information generation, and sharing using other sectors databases for prediction and forecasting using modeling	No		-	-	2500	-	-
		Create an interoperable platform with another E-based reporting system available in the health sector and other sectors	%	0	50%	75%	100%	100%	100%
		Periodic revision and validation of the PHEM reporting tools and data management tools	No	-	1	-	1	-	1
		% of regions / woreda's conducting PHEM data quality assurance bi-annually	%	20%		25%	50%	60%	70%
		Periodic information generation and sharing using different platforms	No	5	1	1	1	1	1
Establish/strengthen CBS and EBS system	Establishing / strengthening EBS and CBS system can improve the early detection and reporting of Public health emergency by reducing the time delay	Develop the implementation manual of CBS	#		1				
		Provide TOT on the manual of CBS	#		100				
		Start piloting of the system on selected kebeles CBS	%		5				

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	which requires cases to reach to health facilities. Besides, it improves the community engagement on PHEM activities and representativeness of surveillance data received at the national level.	Conduct regular supportive supervision of CBS	%		100				
		Provide refreshment training CBS	#			100			
		Conduct regular review meeting	#			2			
		Expand to other kebeles of the country	#			10	20	35	50
		Integrating the CBS with e-CHIS2 platform	%	0%	-	100%	100%	100%	100%
		Integrating mobile-based reporting system with e-CHIS2 platform for event capturing	%	0%	-	100%	100%	100%	100%
		Expansion of national and regional level hotline (rumor capturing and management system)	No	50%	75%	80%	90%	100%	100%
	Having a robust EBS system in place is important because serious public health risks can often bypass health care providers and structured ways of reporting diseases to health officials. In addition, when a disease is unknown, it may go undetected by the existing health care infrastructure. “EBS is the way to reach really remote communities and receive information about potential outbreaks much faster,”	Develop the implementation manual EBS	#		1				
		Provide TOT on the manual of EBS	#		100				
		Start piloting of the system on selected kebeles	%		5				
		Conduct regular supportive supervision	%		100				
		Provide refreshment training	#			100			
		Conduct regular review meeting	#			2			
		Expand to other kebeles of the country	#			10	20	35	50
		Periodic revision of CBS/EBS system	No	1	-		1	-	1
		Piloting PHEM module integration with an e-CHIS2 platform at the community level	No	1		1	-	-	-
		Capacity building for HEW to facilitate implementation of CBS at kebele levels (integrating with IRT module of HEWs)	No						
		Translation and distribution of CBS guideline and reporting formats to five different local languages	%	100%	-	-	100%	-	-
		Design, print, and distribute community case definitions of priority PH problems, educational materials using broachers and posters	%	100%	100%	100%	100%	100%	100%
		Assign a responsible person to coordinate CBS/EBS at the regional and national level	No	1	1	-	-	-	-
		Standardize the database for EBS and CBS at	No	0	-	1			

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		the regional and national level							
		Capacity building for responsible bodies on information generation and sharing	No	0					
		Capacity building on event identification, reporting, investigation, and management for reported events through EBS and CBS							
		Capacity building for CBS / EBS data management, information generation, and sharing at the national and regional level							
		Periodic information generation and sharing							
		Periodic evaluations of the established EBS/CBS system							
Strengthen laboratory-based surveillance system	Since the communicable disease trend changes rapidly, EPHI developed a communicable disease surveillance system according to our country's health system. Among the surveillance, the laboratory-based surveillance system has been particularly important for epidemiological analysis of various communicable diseases. Some communicable diseases, and can be monitored accurately only through the laboratory-based surveillance system because of the no specificity of the clinical syndrome. And clinical surveillance data are confirmed with laboratory findings can have substantial impacts on reporting rate and can increase the reliability of surveillance data.	Periodic system evaluations for available laboratory-based surveillance systems	No	1	-	1	-	1	-
		Expansion of laboratory surveillance system to ensure representativeness	%	-	100%	100%	100%	100%	100%
		Establish laboratory-based surveillance for new diseases	%	-	100%	100%	100%	100%	100%
		Equip regional and national laboratories with required laboratory infrastructures	%	80%	100%	100%	100%	100%	100%
		Periodic document revision (guidelines and SOPs)	No	5	5		5		5
		Establish a system to integrate case-based laboratory findings / data's with epidemiological data's	%	80%	100%	100%	100%	100%	100%
Strengthen early warning and risk communication	Early warning is a major element of public health risk reduction. It prevents loss of life and reduces the economic and material impact of community	Strengthen data/information sharing between different sectors and organizations	%		50	60	70	80	95
		Develop outbreak forecasting models	#		2	3	4	5	6
		Strengthen CEBS implementation							

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
	health. To be effective, early warning systems need to actively involve the communities at risk, facilitate public education and awareness of risks, effectively disseminate messages and warnings and ensure there is a constant state of preparedness.	Conduct regular weekly/monthly/quarterly data analysis and trend monitoring	%		100	100	100	100	100
		Map and capture any risks/event occurrence/mobility etc for PHEs occurrence	%		75	80	85	90	95
		Develop PHEs risk communication SOP	#		1				
		Establish a standard / uniform system for early communication and risk communication to sectors within and outside of the health sectors	#	0	-	1	-	-	-
		Prepare SOPs or manuals / procedures for early warning and risk communication during normal and emergency times (Indicating timing and basic information for sharing)	#	0	1	-	-	-	-
		Establish a web-based platform for early warning and risk communication for the public / community	#	-	-	1	-	-	-
		Establish a platform for work relation for collaboration with all relevant stakeholders during normal and emergency times – with required MOU or directives / policies	#	-	1	-	-	-	-
		Establish automated early warning and risk communication platform integrated with routine PHEM / other sectors reporting platform	#	-	-	-	1	-	-
		Capacity building for early warning, risk communication, and information management	#	-	120	120	120	120	120
		Capacity building for content development and communication	#	-	120	120	120	120	120
		Establish a working relationship with all available stakeholders for mobilization, engagement during normal and emergency times – with required MOU or directives / policies to guide mobilization, engagement, and compensation-related issues	%	-	50%	-	100%	-	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Establish a system to monitor and manage health and health-related rumors in the community during normal and emergency times as early as possible	1	-	-	1	-	-	-
Provide timely response to public health emergencies		Capacity building for RRTs at required health system levels for emergency response based on the prepared EPRP	#	0	55	45	35	50	15
		Equip the RRTs at office and field level with required information communication materials in collaboration with telecommunication – satellite mobile	%	0	100%	100%	100%	100%	100%
		Equip regional and national level EOC by equipping them with required human resources and communication infrastructure	%	-	50	60	70	100	100
		Provide mentorship and capacity building activities for lower level PHEOCs at the regional level	%	0	100%	100%	100%	100%	100%
		Establish cluster PHEOC at selected zonal and woreda level (based on their vulnerability for PHEs) to coordinate PHEs	%	0	100%	100%	100%	100%	100%
		Equip cluster PHEOC centers established at selected zonal and woreda levels	#	24	5	10	15	20	24
		Provide required capacity building to coordinate PHEs suing IMS	%	-	100%	100%	100%	100%	100%
		Conduct Simulation exercises and tabletop exercises at all level PHEOC based on priority PHEs identified by EPRP	#	-	2	3	3	3	3
		Establish a system (collaboration) for mobilizing and deploying responders at field level – Military, air force, or transport minister	1	0	-	1	-	-	-
		Provide a capacity building on multi-sectoral and multi-disciplinary PHE response	%	-	100%	100%	100%	100%	100%
Designate and build minimum	The PoE needs a minimum requirement	Undertake comprehensive baseline capacity assessment at PoEs for designation and gaps filling	#	4		23			

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
IHR core capacity at PoE	to respond to PHE as outlined in IHR-2005. It applies to all designated PoEs	Avail necessary human resources for each of PoEs	#	0		15	12		
		Establish and equip office/station onsite at each PoE	#	1		15	11		
		Map, define and regularly update referral linkage for off-site laboratory testing	#			15	12		
		Put in place the needed capacity/arrangement for onsite specimen collection, packaging, and transportation	#	2		13	12		
		Establish onsite isolation facilities at PoEs	#	1	0	4	6	10	6
		Implement feasible referral linkage for suspect transfer to the off-site facilities	#			10	10	7	
		Develop and implement working (1 directive, 1 guideline, and 6 SOPs) documents for public health measures at PoEs and update as needed.	#	0	7	1			
		Develop and implement vaccination card fake tracking system	#		0	1			
		Implement real-time data collection and establish an electronic database for PoEs	#			10	10	7	
		Undertake comprehensive and practical capacity building for the HWs at each of the PoEs	#			10	10	7	
		Establish an onsite quarantine center at PoEs and/or prepare a feasible referral system to the off-site facilities	#	0		4	6	10	7
		Establish PoE's coordination branch offices at an average site	#	0		2		2	
		Avail at least two motorbikes/PoEs	#			10	10	7	
Strengthen programs for vector control and surveillance system at the point of entry	The PoE needs to implement the vector control system and capacity to hinder the importation of vector-borne diseases into the country and abroad. It is one IHR recommended capacity/requirement	Develop a package of necessary working documents (SOPs, Certificate, and checklists) for vector control system at PoEs	#	0		1			
		Undertake capacity building for at least one 1staff/PoE on vector control	#	1		10	10	6	
		Design and adopt the system/method	#	0		1	1		

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		recommended by WHO/IATA for vector control at PoEs							
		Establish the regulatory framework for the vector control on conveyances and implement	#	0		1	1		
		Design system and implement linkage of the PoEs to the national surveillance system as a peripheral reporting unit	#	0			1		
Establish functional cross border collaboration with neighboring countries	A platform for Information exchange, joint planning, and execution with neighboring counties is needed for effective response at the border.	Prepare the consultative meeting with the neighboring countries and define areas of collaboration	#	0		1			
		Develop and sign MoU with Kenya, S/Sudan, Sudan, Djibouti, and Eritrea per the defined areas of collaboration	#	0		3	2		
		Conduct annual cross border collaboration meeting with the neighboring countries (once per year)	#	0		1	1	1	1
		Develop a joint plan, implement and evaluate	#	0	1	1	1	2	
Develop and implement Public health emergency contingency plan at the designated points of entry.	PHERCP is necessary for effective response to the cross-border PHE or PHEIC.It is one of the recommended capacities by IHR too.	Develop disease-specific or generic PHERCP for each PoEs jointly with stakeholders	#	2		8	9	8	
		Conduct familiarization workshop with stakeholders of PoEs	#	0	2	8	9	8	
		A conduct simulation exercise for the developed PHERCP to test the plan	#	0		1	1	1	2
		Revise and update PHERCP for all PoEs	#	0		2	10	19	27
		Activate and implement PHERCP during the occurrence of cross border PHEs	%	0		7	37	70	100
Implement the routine public health measures on human and conveyances at PoEs	EPHI has been given the mandate to undertake regulatory measures related to communicable disease control at the borders.	Implement the routine regulatory measures on human remain or ashes at PoEs	#	1			11	21	27
		Implement the disinsection of conveyances for outgoing conveyances	#	1			4		
		Implement the regulatory framework for disinsection of going conveyances	#	1			4		
		Implement routine public health measures on	#	1		2	10	19	27

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		incoming and outgoing passengers at PoEs							
		Implement Travel health advice and notice (HAN) for the international traveler	#	0		1			
Establish/strengthen traveler health service	To prevent travel-related health risks to passengers. Besides, one of the mandates given to EPHI with legislation	Conduct need assessment for the establishment of additional vaccination centers	#	0		1			
		Establish and equip the needed vaccination centers	%			50	50		
		Adapt medical waiver card for the international traveler	#	0		1			
		Implement the electronic database at vaccination centers	#	0		1			
		Develop and implement a tracking system for fake proof of vaccination	#	0	0	1			
Support laboratories to implement relevant national and/or international laboratory quality standards		Mentor and technically support health laboratories for full scope accreditation to pertinent ISO standards	#		2	3	4	5	6
		Mentor and technically support health laboratories for limited scope accreditation to pertinent ISO standards	#		25	30	35	40	50
		Mentor and technically support laboratories to maintain their accreditation status	%		100	100	100	100	100
		Mentor and technically support laboratories to expand their scope of accreditation at least by one test	%		30	35	40	45	50
Provide support to implement WHO's Stepwise Laboratory Quality Improvement Process Towards Accreditation (SLIPTA) program and other Quality Improvement initiatives		Support laboratories to implement SLMTA and achieve 4- & 5-star levels in SLIPTA	#		5	5	5	10	15
		Support laboratories to implement SLMTA and achieve 3-star levels in SLIPTA	#		20	30	35	40	45
		Support laboratories to implement SLMTA and achieve 2- star levels in SLIPTA	#		30	35	40	50	60
		Support laboratories to implement SLMTA and achieve 1- star levels in SLIPTA	#		30	40	50	55	60
Provide support for the implementation of basic LQMS		Provide support for laboratories to implement basic LQMS	%		75	80	85	90	95

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
across the laboratory system									
Measure customer satisfaction level on laboratory services		Level of customers satisfaction in laboratory services	%			80		85	
Build human resources capacity on Laboratory Quality Management System		Provide basic and refreshment training for laboratory directors, quality managers, and laboratory personnel in different QI initiatives.	#		260	250	250	250	200
Develop laboratory policy, implementation guidelines, and manuals		Develop health laboratory policy as per the national health care policy.	#			1			
		Develop and disseminate laboratory mentorship, QA implementation guidelines	#			1		1	
Establish a system for laboratory equipment acquisition, inspection, installation, commissioning, decommissioning, and disposal Strengthen system for the provision of validation and calibration of biological safety cabinet, negative pressure, and other laboratory equipment Strengthen system for preventive and curative maintenance of laboratory equipment		Laboratory equipment technology assessment	#		1	1	1	1	
		Develop technical specification	%	100	100	100	100	100	1
		Manage installation and commissioning of laboratory equipment	%	100	100	100	100	100	
		Plan and organize national laboratory equipment replacement	%	100	100	100	100	100	
		Annual certification of biological safety cabinet Annual verification of cleanroom System Ancillary laboratory equipment calibration	%	100	100	100	100	100	
		Curative maintenance of lab equipment Preventive maintenance of lab equipment Maintenance contract management	%	100	100	100	100	100	
Strengthen laboratory equipment data management system		Laboratory equipment inventory data management	%		100				6500
		Spare part data management	%	100	100	100	100	100	437
		Tools(calibration and maintenance) data management	%	100	100	100	100	100	
Establish national laboratory equipment innovation/ refurbishment center		Construct laboratory equipment innovation center	#				1		

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Fulfill necessary materials for constructed innovation / refurbishment center	%		20%	60%	80%	100%	100
		Refurbishment of laboratory equipment	#						2
Establish laboratory equipment calibration center		Construct laboratory equipment calibration	#				1		1
		CentreFulfil necessary materials for constructed calibration	%					100	2
Develop Laboratory equipment management guidelines and manuals		Number guideline developed for laboratory equipment management	#		1		1		1
		Public health laboratory equipment guideline	#			1			1
		Laboratory equipment calibration guideline	#				1		1
		Biological safety cabinet certification guideline	#		1				
		Establish equipment disposal system guideline	#			1			1
		Standardization and harmonization of laboratory equipment	#		1				1
Strengthen the implementation of institutional biosafety and biosecurity programs		Provide technical support for health laboratories on biosafety and biosecurity	%	**5**	**15**	**25**	**35**	**45**	1
		Conduct supportive supervision on biosafety and biosecurity at Health Facilities	#	**45**	**50**	**55**	**60**	**65**	100
		Strength Occupational Safety and Health at EPHI	%	**50%**	**75%**	**100%**			42
		Conduct workshop on biosafety and biosecurity	#	**1**	**2**	**2**	**2**	**2**	
		Conduct supervision on biosafety and biosecurity program	#	**1**	**2**	**2**	**2**	**2**	30
		Provide technical support for health laboratories to develop a safety manual	#	**13**	**25**	**35**	**50**	**65**	**1**
Strengthen laboratory waste management system		Develop waste management manual	#		**1**				
		Install environmental friendly incinerator at EPHI campus	#					**1**	90
		Standardize EPHI liquid waste treatment system	%			**75%**	**100%**		12
		Provide technical support for health laboratories on waste management system strengthening	%	**-**	**50**	**60**	**70**	**100**	

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
Develop and implement chemical hygiene plan for health laboratories		Provide technical support health facilities for the development of laboratory chemical hygiene plan	#	**13**	**100**	**150**	**200**	**250**	1
		Provide technical support for laboratories for implementation of a chemical hygiene plan	#	**13**	**25**	**35**	**50**	**65**	95
		Provide training on chemical and hazardous material handling, disposal	#		**100**	**150**	**200**	**250**	95
Establish regulatory and legal frameworks on biosafety and biosecurity requirements		Conduct public consultation workshop on the draft Biosafety and biosecurity proclamation	#	**2**					1
		Review and submit the draft Biosafety and biosecurity proclamation for council of ministries for approval	#	**1**					1
		Establish regulatory body for enforcement of Biosafety and biosecurity proclamation	#		**1**				4
		Develop Biosafety and biosecurity directives and procedures for the implementation of Biosafety and biosecurity proclamation	#		**2**				
		Provide services for certification of Labs for using and housing Ethiopia's selected hazardous pathogens and toxins (ESHPT)	#			**5**	**10**	**24**	2
Implement regulatory and legal frameworks of biosafety and biosecurity requirements at facilities		Conduct workshop on the Biosafety and biosecurity proclamation implementation	#	**1**	**2**	**1**	**1**	**1**	2
		Provide Technical for laboratories and research centers for implementation of Biosafety and biosecurity proclamation	#						1
		Provide training for safety officers on the implementation of Biosafety and biosecurity proclamation	#		**20**	**40**	**75**	**100**	
		Support laboratories and research centers to get a license for using and housing Ethiopia's selected hazardous pathogens and toxins (ESHPT)	#		**5**	**10**	**24**	**40**	
Strengthen risks management system across the laboratory system		Provide Technical for health laboratories for implementation of the risk management system	#	**5**	**15**	**25**	**35**	**50**	

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Provide training on the risk management system for	#	**50**	**100**	**150**	**200**	**250**	
Establish and implement national proficiency testing production in accordance with ISO 17043 standards		Follow and monitor the progress of PT production center construction	#			**1**	**1**	**1**	
		Provide TOT training on preparation of Panels as per ISO 17043 standards and ISO 17043 Standard implementation	#		**10**	**15**	**25**	**30**	
		Develop PT production manual, per ISO 17043 standards	#		**1**			**1**	
		Develop PT production protocols per ISO 17043 standards	#		**15**	**10**	**5**	**4**	
		Prepare Panels as per ISO 17043 standards	#			4	**6**	**6**	
Strengthen national capacity for the production and management of proficiency testing panels		Production of different NEQAS Proficiency testing samples	#	**2**	3	3	2	**2**	
		Facilitate test specific TOT training on Panels preparation, stability testing, packaging at the national level	#		2	3	3	**5**	
		Enrolling laboratories in National EQA schemes	#	**295**	**300**	**391**	**450**	**518**	
		Develop national EQA implementation guideline	#		1			1	
Enhance EQA utilization and performance evaluation		Prepare training material for conducting PT utilization and performance evaluation training for participant laboratories.	#		1	2	2	1	
		Provide EQA/PT testing, utilization, and performance evaluation training for participant laboratories.	#	**105**	120	160	180	200	
		Conduct onsite evaluation and supportive supervision for selected participant laboratories	#	**500**	1000	1300	1500	2000	
Establish and implement national electronic proficiency testing (ePT) data management program in accordance with ISO		Follow up the development of national ePT (EQA Software) program establishment	#		**1**	**1**	**1**	**1**	
		Develop ePT user's manual, per ISO 13528 standards	#			**1**		**1**	

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
13528 standards		Develop ePT utilization training material for users	#			**1**		**1**	
Establish Biobank centers		Follow and monitor the progress of biobank center construction	#			**1**	**1**	**1**	
		Develop a guideline for collecting, storing, and utilization of the stored biobank samples	#			**1**		**1**	
		Develop a protocol for selecting, collect and storage of necessary samples	#			1			
Support the implementation and coordination of Regional EQA systems and schemes		Provide support for strengthening the utilization and implementation of regional EQA schemes	#	12	12	12	12	12	
Strengthen the implementation of random blinded rechecking retesting and onsite evaluation EQA schemes		Provide support for the strengthening of random blind rechecking, retesting, and onsite evaluation EQA schemes for regions	#	3	3	3	3	3	
Establish Quality Control and Reference material production center and enhance utilization		Develop protocols for QC and reference material production	#		**1**	**3**	**5**	**8**	
		Produce quality control materials	#		**1**	**3**	**5**	**8**	
		Produce Reference materials	#			**1**	**5**	**8**	
Facilitate and Coordinate all International EQA programs		Facilitate all the procurement and importation of IEQAS panels from the international PT providers	#	**228**	**228**	**228**	**228**	**228**	
		Coordinate the enrollment, distribution, result submission, and proper utilization of IEQAS panels	#	**3**	**3**	**3**	**3**	**3**	
Scale up the implementation of LIS and data management system		Number of Desktop computers and server procured and hosting LIMS	#						
		Supported labs in network infrastructure and communication	#						
		Provide training for LIS officers providing technical support	#	15	16				
		Lab machines interfaced with LIS	%	50	70	90		100	
		LIS integrated with HIS or EMR or another point of service applications	%	30	50	70	90	100	

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		Preventive and curative maintenance for LIS existing facilities	%	100	100	100	100	100	
		Install and configure new LIS sites	#	10	15	20	30	40	
Standardize paper-based LIS data capturing, storage, retrieval, analysis, and reporting at all levels of the lab system.		Provide training for data managers regional LIS	#	27					
		prepare lab requests standardized for tests marked as the flagship	%	25	100				
		Prepare registration books developed or standardized for tests marked as the flagship	%		50	100			
Implement technologies for real-time communication information/data.		synchronization lab data using real-time communication information/data	#						
		Install databases and configure synchronization for new testing sites	%	100	100	100	100	100	
		Remote service and support software developed	#		1				
		LIS systems developed/ customized	#		1				
		EQA data management systems developed/ customized	#		1				
		lab equipment data management system developed	#						
		Specimen tracking and result delivery systems developed	#		1				
Number of the protocol developed to ensure interoperability between electronics systems used across HMIS		Point of service application integrated with LIS	#		**1**				
		interoperability frameworks developed	#	**1**					
		Labs participating in the collaborating framework	#			**2**			
Develop and implement device-agnostic/independent connectivity solutions for point-of-care diagnostic machines.		POC machines using the connectivity solutions	#	**10**	**40**	**70**	**100**	**130**	
		Lab machines using the connectivity solutions for quantification and mentorship	#	**2**	**5**	**8**			
		Maintain Connectivity for existing machines	%	**100**	**100**	**100**	**100**	**100**	
Strengthen ICT infrastructure		Establish a state of the art data archiving	#	25	25	25	25	25	25

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
with networking to explores new ways to innovate across the state		center for research data (ongoing)							
		Transfer the data institutional data repository center	#	25	25	25	25	25	25
		Establish regional data warehouse	#	-	2	2	2	2	2
		Establish cybersecurity for networks	%	-	100	100	100	100	100
Automate EPHI's operational activities with the latest technology		Fully automate PHEM data communication	%	-	50	100	100	100	100
		Develop laboratory data management system (Automated)	%	-	50	100	100	100	100
		Enhance automated operational systems(GS, Finance, HR, Procurement, reporting)	%	-	25	50	75	100	100
		Develop standard data collection tools for research (ODK system)	%	-	100	100	100	100	100
Strengthen institutional public Relation		Establish media production studio	#	-	-	-	1	-	-
		Furnished the media production studio	#	-	-	-	1	-	-
		Develop and broadcast different learning and awareness creation documentary programs through different channels	#	0	0	1	2	2	3
		Provide updated information for different customers	%	100	100	100	100	100	100
		Upload different information on the institute website and social media	%	100	100	100	100	100	100
		Prepare monthly newsletters and magazines' (by type)	#	1	1	1	2	2	3
		Update the institute citizen chart	%	100	100	100	100	100	100
		Prepare digital Data collection (Survey and surveillance) tools and organized the receiving data (archive system)	%	100	100	100	100	100	100
Construction of state-of-the-art facilities	To enable EPHI to serve as the center of excellence for disease detection and response in East Africa	BSL3 Building Design	#	0	1	-	-	-	-
		Construction of BSL3 Laboratory	%	0	0	29	49	71	100
		Construction of BSL2 15 Laboratories	%	0	20	80	100	-	-
		Construction of PT Panel production	%	-	-	20	80	100	-
		Construction of Bio-Bank	%	-	-	20	80	100	-
		Construction of Central Warehouse	%	-	-	20	80	100	-

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
Improve resource mobilization and utilization	To enable EPHI executes its mandate through effective resource mobilization and efficient utilization	Identify gaps and map financial resources and develop resource mobilization strategy	#	-		1			
		Mobilize Resources as per the planned need	%	-	70	75	80	85	90
		Track proper and efficient financial utilization through periodic financial management, tracking, and auditing	Round	-	12	12	12	12	12
		Develop general equipment and supplies directory and establish an efficient procurement system	#	-	1	-	-	-	-
		Prepare annual Procurement plan showing delivery schedules in line with planned activities	#	-	1	1	1	1	1
		Avail goods and supplies as per the need and lead time	%	-	77	80	85	90	95
		Budget utilization rate 9Utilize from mobilized (efficiently)	%	75	75	80	85	90	95
Develop institutional strategies/plan and conduct M&E activities	To improve the institute performance and prioritize the implementation activities accordingly to our resources	Prepare an annual operational plan	#	1	1	1	1	1	1
		Prepare joint plan	#	1	1	1	1	1	1
		Prepare M&E plan for the strategies	#	-	-	1	-	-	-
		Conduct performance monitoring reporting	#	1	1	1	1	1	1
		Conduct assessment	#	1	1	1	1	1	1
		Conduct midterm evaluation	#	1					1
		Conduct project follow up	#	1	1	1	1	1	1
		Conduct thematic area evaluation	#	-	-	1	1	1	1
Develop citizen charter, internal policies/guidelines	Familiarizing all intermediate/middle-level leaders with concerning public policies & regulations to ensure transparency, accountability, and compliance	Create awareness about the public property, procurement, Budget, Human Resource, and Finance policies	#	1	2	2	2	2	2
		Create awareness about Property handling directives, procurement processing procedures, details of financial directives, revenue and expenditures recognitions b/n	#	1	4	4	4	4	4

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		given times(matching principles on-budget performance)							
		Conducting an integral audit (Financial audits, special audits, compliance audits for risk-based assessments).	#	2	3	3	3	3	3
		Conduct performance audit (Engaging the management of the institute)	#	0	1	1	1	1	1
		Provide Audit feedback and follow up (Internal and external audit findings progress amendment duties/report based)	#	2	1	1	1	1	1
Provide long-term training for internal human resource	Capacity building for internal auditors for major fits in concern of future new technologies	Qualifying auditors by international public finance and its verifications / IFRS and CPA/ professionals.	#	0	1		1	1	1
Develop human resource strategy and emplace pertinent organization structure		Assess the current state of HRM practice	#	-	1	-	-	-	-
		Analyze the data and identify existing gaps.	#		1	-	-	-	-
		Prepare the strategic document	#		1	-	-	-	-
		Roll out the HR strategy for the staff	#		1	-	-	-	-
		Complete the approval process of the structure.	#		1	-	-	-	-
Provide short-term training for internal human resource		Conduct needs assessment and identifies the capacity gap.	#	-	-	1	-	-	-
		Design a short-term training plan	#	-	-	1	-	-	-
		Identify a required resource for the training	#	-	-	1	-	-	-
		Provide the training.	#	103	124	148	178	214	256
		Evaluate the impact of the training	%	100	100	100	100	100	100
Provide long-term training for internal human resource		Conduct needs assessment and identifies the capacity gap.	%	100	100	100	100	100	100
		Design a long-term training plan	%	100	100	100	100	100	100
		Identify the potential local and	%	100	100	100	100	100	100

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
		international level academic institutions.							
		Select the potential candidates for the program and communicate with the institutions.	%	100	100	100	100	100	100
		PhD	#	13	7	9	12	15	20
		MSc	#	10	8	10	14	18	23
		BSc	#	-	-	1	1	2	2
Provide Human resource services		Follow up on the progress of the candidate.	%	85	100	100	100	100	100
		Staff attrition rate	%	2.3	2.5	2.5	2.5	2.5	2.5
		Replacement rate	%	90	91	92	93	94	95
		Recruit new contract experts as per demand	%		100	100	100	100	100
		Provide career increment for staff	%		100	100	100	100	100
Strengthen public health workforce capacity development	Ethiopian Public Health Institute start continuous professional development Training to foster the development of a skilled, flexible, and diverse workforce that meets the current and anticipated needs	Providing short term training for external & internal health workers	#	3425	3939	4530	5210	5990	6500
		Providing CPD training programs for health professionals with standardized training modalities	#	0	250	285	330	380	437
		Developing short term training modules	#	12	18	24	30	36	42
		Developing training quality assessment guidelines	#	1					
		Establishing an eLearning training platform for various training	#	6	10	15	20	25	30
Conduct operational services	To facilitate the institutional work environment by synchronizing and harmonized the institutional activities in a compressive way	Provide transport service and Car maintenance	%	100	100	100	100	100	100
		Conduct building maintenance	%	100	100	100	100	100	100
		Provide cleaning and security services	%	100	100	100	100	100	100
		Strengthen institutional property management system	%	100	100	100	100	100	100
Ensure and empower women's and youth issues the	To empower women's in the institutional activities	Ensure women's and youth issues the institutional activities	%	100	100	100	100	100	100

Major Activities	Justification and Scope	Specific Activities	Unit	Baseline	Year				
					20/21	21/22	22/23	23/24	24/25
institutional activities		Support and follow disabled staffs to ensure the convenient working environment	%	100	100	100	100	100	100
		Strengthen child Day-cares	%	100	100	100	100	100	100
		Provide support for women's forum	%	100	100	100	100	100	100
Strengthen Reform and Good Governance		Develop & update Good Governance package	#	1	1	1	1	1	1
		Provide support to directorates about good governance transparency, accountability, ethical and public focused working environment	#	19	23	23	23	23	23
		Provide support for employees/staffs to achieve best performance score above 85%	#	700	725	750	800	825	850
		# of developed guidelines, procedures, and manuals	#	1	1	1	1	1	2
Provide short- training for internal human resource	Empower the institute`s human capital with the best management tools, techniques & philosophies	Conduct training on Quality management tools and Techniques	#	25	50	50	50	50	50
		Conduct training on Leadership training	#	0	25	25	25	25	25
		Conduct training on Updated operational management training	#	50	50	50	50	50	50
Develop citizen charter, internal policies/guidelines to ensure transparency, accountability, and compliance	Assure the customers of the institute get the satisfying service	Develop & update the Good Governance package	#	25	25	25	25	25	25
Establish collaborations and partnership with international, public-private partners, academic institutions, and foundations	Collaboratively work with MOH reform and Good Governance forum.	Meet quarterly and exchange experiences	#	-	1	1	2	2	-

Annex 4: Glossary

- **The burden of Diseases Estimate**
- **Comprehensive** – all significant options and impacts are considered.
- **Conceptual framework:** A diagram of a set of relationships among factors that are believed to impact or lead to a target condition. It is the foundation of project design, management, and monitoring.
- **Data repository**
- **Data governance**
- **Early warning** is the identification of a public health threat by closely and frequently monitoring identified indicators and predicting the risk it poses on the health of the public and the health system.
- **Efficient** – the process should not waste time or money.
- **Evaluation criteria** – The impacts (costs and benefits) considered in an analysis.
- **Evaluation methodology** – The process of valuing and comparing options, such as cost-effectiveness, Cost-utility analysis, and cost-benefit analysis among alternatives, benefit/cost, lifecycle cost analysis respectively.
- **Evidence generation**: is a gating of information/Knowledge occurring through research studies that are well-designed in anecdotes or opinion, methodological position, and experience.
- **Evidence Synthesis**: is the contextualization and integration of research findings of individual research studies within the larger body of knowledge on the topic. A synthesis must be reproducible and transparent in its methods, using quantitative and/or qualitative methods. It could take the form of a systematic review, result from a consensus conference or expert panel or synthesize qualitative or quantitative results. Realist synthesis, narrative synthesis, meta-analysis, meta-synthesis, and practice guidelines are all forms of synthesis.
- **Evidence Transfer**: is explained as the method to transfer knowledge to health facilities health professionals, and health systems globally through publications, journals, education, electronic media, training, and decision support systems. However, it takes the position where the production of derivative products from systematic reviews would not be a passive activity and therefore, the term 'transfer' is revised to coactive.
- **Evidence utilization**: is the process of moving evidence into practice to improve the health and development of the people and communities we serve. It should be noted, though, that research utilization can be employed in any context or process where evidence is needed or used; it is not

confined to the health sector or limited to only research studies. To attempt to put it simply, research utilization is an action. It is also the connective tissue between evidence and action.

- **Framework:** An open set of tools for project planning, design, management, and performance assessment. Frameworks help to identify project elements (goals, objectives, outputs, outcomes), their causal relationships, and the external factors that may influence the success or failure of the project. A framework matrix provides an easy overview of key project information that allows assessment of project logic as well as performance monitoring and evaluation.
- **Hazard:** An accidental or naturally occurring event or situation with the potential to cause physical or psychological harm (including loss of life) to members of the community, damage or losses to property, and/or disruption to the environment or to structures (economic, social, political) upon which a community's way of life depends e.g., Presence of outbreaks, flood, storm, chemical release.
- **Inclusive** – people affected by the plan have opportunities to be involved.
- **Indicators:** Quantitative or qualitative measures of program performance that are used to demonstrate change and that detail the extent to which program results are being or have been achieved. Indicators can be measured at each level: input, process, output, outcome, and impact.
- **Informative** – results are understood by stakeholders (people affected by a decision).
- **Integrated** – individual, short-term decisions should support strategic, long-term goals.
- **Logical** – each step leads to the next.
- **Options** – Possible ways to achieve an objective or solutions to a problem.
- **the percentage** is the amount, number, or rate of something, regarded as part of a total of 100; a part of a whole.
- **Performance indicators** – Practical ways to measure progress or changes toward objectives and strategies and initiatives during the implementation period.
- **PHEM** is the process of anticipating, preventing, preparing for, detecting, responding to, controlling, and recovering from consequences of public health threats in order that health and economic impacts are minimized.
- **Plans** – A scheme or set of actions. This may be a strategic (general and broad) or an action (specific and narrow) plan.
- **Policies or strategies** – A course of action implemented by jurisdiction or organization.
- **Principles** – A basic rule or concept used for decision-making.
- **Programs** – A specific set of objectives, responsibilities, and tasks within an organization.
- **proportion** is (lb) a quantity of something that is part of the whole amount or number while

- **Results framework:** Frameworks that explain how a project's strategic objective (SO) is to be achieved, including those results that are necessary and sufficient, as well as their causal relationships and underlying assumptions. It is usually depicted with the main objective at the top, each of the strategic direction in its own box under the objectives, and the results feeding into each strategic direction from the bottom to the top.
- **Risk communication:** refers to activities for sharing information and ideas about risks and actions to deal with real and potential dangers that could lead to an indiscriminate demand that is impossible to meet.
- **Scope** – The range (area, people, time, activities, etc.) to be included in a process.
- **Strategic Direction** – Specific, potentially quantifiable ways to achieve objectives
- **Strategic Objectives** – A general desirable condition to be achieved, usually too general to be quantified in the perspective of outcome and impacts.
- **Strategic Planning and Management (SPM)** is the fulfillment of the institution's mandate through a specific implementation path, resource allocation, structural arrangements, and communication. Successful planning is the preparation of the workforce mindset in an enabling environment and making relevant decisions in the arrangement and resource allocation is widely thought to be critical to the achievement of institutional mandates and aims.
- **Targets or Measurements** – a specific quantified number that will be measured using specific indicators.
- **Tasks or actions** – A specific thing to be accomplished.
- **Technical Working Groups (TWG),** which is a technical advisory body of some areas that encompasses experts, from different stakeholders, communities, and partners to give advice on the specific health issue.
- **Threat**: The intent and capacity to cause loss of life or create adverse consequences to human welfare (including property and the supply of essential services and commodities), the environment, or security. Risk: The probability of harmful consequences or expected loss (of lives, people injured, economic activity disrupted or environment damaged) resulting from interactions between natural or human-induced hazards conditions
- **Transparent** – everybody involved understands how the process operates.
- **Vision** – A general description of the desired result of the planning process.

- **Vulnerability**: The susceptibility of a community, service, or infrastructure to damage or harm by a realized hazard or threat. Or Vulnerability is the characteristics and circumstances of a community, system, or asset that make it susceptible to the damaging effects of a hazard.
- **Power BI** is a professional analytics of reporting mechanism and gives solution that lets we visualize our report data and share insights across our institute, or embeds them in in the institute website.