



**Sidaama Region Public Health Institute**

**Regional Data Management Center (RDMC)**

**Working Guideline**

**November, 2022**

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# List abbreviations and acronyms

# CSA: Central statistics agency

DRG:Data repository and governance

DAV: Data analytics, modeling and visualization unit

GTP:Growth and transformational plan

HSTP: Health sector transformational plan

IR: Information revolution

ICT: Information and communication technologies

ITR: Information transformation road map

PHEM: Public health emergency management

RDMC: Regional Data Management Center

RHB: Regional Health Brue

RTT: Research and Technology transfer

SDG: Sustainable development goal

SiPHI: Sidaama Public Health Institute

TWG: Technical working group

VERA: Vital events registration agency

WHO: World health organization

# Summary

The Sidaama Public Health Institute (SiPHI) has given the responsibility by the Council of region decree as 11/2013([1](#_ENREF_1)) to undertake research on regional priority health challenges, public health emergency management and building regional laboratory capacity and to establish a regional health data repository. The institute is a technical wing for the Regional Health Bureau (RHB), having responsibility for generating strong evidence for decisions including evidence that support epidemic alert, responses and evidence for program inputs; evidence for developing, tracking and evaluating strategies, policies and for implementing information transformation agenda of the health. In 2021, the institute has established Regional Data Management Center for health (RDMC) as one directorate among from four main directorates of the institute. The impetus behind the establishment of the center was that despite the region having health and health related data at multiple levels, there was no recognized coordinating center to archive and process health data, and synthesize strong evidence to inform decisions at regional levels, priority health challenges and interests. Upon its establishment, the center will take advantage of the fast paced digital transformation and information technologies, it fast forward towards achieving its vision of being a center for excellence in health data management, evidence synthesis and translation in the region. Now the RDMC is trying to have some of the notable achievements are,

A) To create credible and reliable health data governance systems, procedures, guidelines to ensure data integrity, confidentiality and security as well as to facilitate data access and sharing.

B) Digitizing health data and information systems, creating standard repository, promoting digital health, make health data Findable, Accessible, Interoperable and Reusable (FAIR), improve quality, reproducibility and reliability of health data and researches.

C) The center will serve as a regional health data hub for archiving all health and health related data in the region with their respective meta-data, set data standards and regulations to foster data exchange and maximize data use.

d) Building state of the art data systems and capacities for the realization of the center’s vision not to be left behind in the highly progressive digital revolution; to support the regional digital health and health information system strategies.

# Chapter I: Introduction

## Back ground

Sidaama national region is one of the 11 regions of Ethiopia. The region has large amounts of routine, program and research data collected by various health and social sectors using diverse data platforms. These data are mostly in silos, fragmented and poorly organized which presented a challenge for real time reporting and poorly inform local decision, and health system responses. Moreover, the region’s health systems and research institutes have limitations in undertaking big and heterogeneous data analyses, which in turn undermines the values of available data to inform and influence decisions making. These challenges call for transforming the conventional health data systems and data analytics to digital, advanced and innovative systems and techniques having the right expertise.

Following the World Health Organization (WHO) recommendations to establish and strengthen health information systems, digital health and vital statistics for evidence driven decision([2](#_ENREF_2)).

Building big data analytic expertise and Data Science capacity in Africa is essential to exploit the great potential of innovative techniques including Data Science to solve highly complex and computationally demanding health issues from heterogeneous data. Data Science uses scientific methods, processes, algorithms and systems to extract knowledge and insights from many structured and unstructured health data employing supervised and unsupervised learning algorithms to ensure knowledge discovery from large health data collected from different sources([3](#_ENREF_3))[[1]](#endnote-2).

The Ethiopia’s first Health Sector Transformation Plan (HSTP I) for the year 2015-2020 and second Health Sector Transformation Plan (HSTP II) for year 2017-2023 has made Information Revolution (IR) as a core agenda. The major goal of the Information Revolution is “to maximize the availability, accessibility, quality, and use of health information for decision making processes through the appropriate use of Information and Communication Technologies (ICT) to positively impact access quality, and equity of healthcare delivery at all levels”. For its implementation Information Transformation Roadmap (ITR) was developed, which calls for a fundamental shift on the way health data is collected and utilized and the application of IT to advance public health and biomedical data analysis and evidence generation([4](#_ENREF_4), [5](#_ENREF_5)) .

Even though, Ethiopia developed ambitious agenda and transformational roadmap to use health information for decision making processes, there have been long standing challenges to track progress and evaluate implementation of global goals as Sustainable Developmental Goal (SDG), national plans as Growth and transformational Plan (GTP) and health sector plan as HSTP I and II. Formulating evidence-based policies, strategies and program in Ethiopia have double burden constraints. Having limited and fragmented health data on the one hand which has limited data analytic and evidence synthesizing capacity on the other hand sustained the production of weak evidence. The poor accessibility of available evidence is also adding to the problems ([6](#_ENREF_6)).

Consequently, The RDMC establishment takes advantage on synthesizing high-level evidence at regional level by creating credible and reliable health data governance systems to digitize health data and information systems and by creating standard repository to archive all health and health related data for SiPHI and RHB. Also, it has responsibility to implement the major activitiesset out in the information revolution agenda and SDG.

## Sources of Data for RDMC

There are various sources and nature of data at region. Overall, the major data sources at Region are classified as data source in the SiPHI and data source out of the SiPHI.

* Data source in the SiPHI are:-

• Research and Technology Transfer (RTT)

* Data from RTT could be obtained from survey, lab-based surveillance from SPHI and health facilities and community knowledge.

• Public Health Emergency Management (PHEM) data

* Data from PHEM could be from day to day rumors and intelligence reports from health facilities and other sources of routine and outbreak nature.

• Regional Laboratory System data

* Laboratory data comes from regional laboratories and companies on instruments and equipment.
* Data sources from directorates like human resource management, planning and Evaluation, financing… ……
* Data sources outside SiPHI for RDMC are:-

• Regional Health Bureau for the integrated routine data and surveys,

• Central statistics agency (CSA), Vital Events Registration Agency (VERA), Regional Plan Commission,

* Local universities like Hawassa University.
* Regional Agricultural Bureau ,
* Local NGOs, bilateral as well as multi-lateral institutions that generate health related data.
* Governmental and colleges like Hawassa health science and Yirgalem health science,
* Private sector and private universities,
* Data from uniformed services, refugees, public health projects

## Major drivers of RDMC’s establishment

• Large amount of health and health related data are produced in the region including SiPHI but due to lack of a regional coordinating body most health data are in silos, fragmented, poorly organized

• There was a need to create Regional repository/databases for health and health related data, automating the data systems

• Despite availability of data sharing and guidelines data sharing and access were not standardized and were disorganized

• There were gaps in data governance systems, structure, reliable and secure data storage

• There were gross limitations on technical and technological capacity to transform the existing health data systems to generate strong evidence for high level policy decision

• The need to build data visualization platforms to maximize data and evidence use

• The need to have health data experts, support national health data analytic expertise

• Limited technical expertise to apply robust data analytics and evidence synthesis to generate strong evidence

# Chapter II: The Regional Data Management Center for health (RDMC)

The RDMC intends to bridge the gaps in data systems and transforming data analytics and evidence synthesis and translation capitalizing on existing and emerging strategies, opportunities including information revolution policies and strategies of the region, locally available research infrastructures, technologies, high demand for quality data for health decision, available local collaborations, and available multiple health and health related data sources to achieve its vision. RDMC process and manage already available data using rigorous scientific methods, to create research collaboration platform with local agencies, to draw regional research agenda and develop data sharing culture, and to use resources efficiently and build evidence synthesis and dissemination capacity in the region.

Moreover, the RDMC provides easy access to quality data. This can significantly improve efficiency in obtaining and analyzing regional population health data, can save cost and investment to generate primary data, and uses of research findings for evidence informed decisions, innovation and advancing science and improve research integrity. The center implements the FAIR data principle to pave the way towards open health data systems and open data access. The RDMC establish systems that prevent data loss, reduce the cost of data storage, reduce financial burden on researcher for data collection and archiving, to ensure security, access and availability with the aim to support scientific works, research institutes and researchers. The RDMC interconnect and integrate data/information systems to foster data exchange and information sharing at regional levels. The national health policy promotes health information resources to be widely available and accessible to all, whereby the RDMC has taken this responsibility. The RDMC bridges the people who produce/collect data with the people who use data to generate information and with the people who generate evidence from the data and with the people who use evidence including decision makers.

RDMC builds strong partnership through a comprehensive and transparent regional data sharing policy with several data sources outside of SiPHI.

## Vision, Mission, Goal and Key Strategies of RDMC

**Vision**

To be center of excellence in generating, synthesizing and translating public health and biomedical evidences in Sidaama region.

Mission

To improve the health of the public through presenting high quality evidence for decision making to the RHB. The mission encompasses;

1. Establishing a centralized system that continuously collects and archives all available health related data/information to serve as a national repository of research data to ensure safe storage and open sharing in region.

2. Availing health and health related data/information for the public and on demand according to the nature of the data/information.

3. Managing and process the data, synthesize available health related evidence from region research institutes and researchers.

4. Measuring health progress with the applications of robust scientific methods and providing timely quality evidence for region.

5. Translating research evidence for public health policies and programs.

Goals

The goal of RDMC is to create a system of data management and evidence synthesis to improve public health practice through generation of high quality evidence for Sidama region.

This is to build databases, data management and evidence synthesize approaches on health and health related data through pooling all available data in the region. The ultimate goal of the regional data management center is to maximize the utilization of available data related to health and to fill the gaps on evidence informed health decision through the application of rigorous scientific methods at regional level.

**Specific objectives**

The following are specific objectives of the center;

1. To map, collect and archive historical and contemporary health and health related data from different sources and make available for public use as required.

2. To conduct in-depth analysis and evidence synthesis on different research questions on, but not limited to, maternal, neonatal, nutrition, malaria, tuberculosis, HIV/AIDs, NTDs and other infectious diseases, non-communicable disease and provide findings for decision making.

3. To generate disease burden and health risk factor estimates that is essential for planning and resource allocation.

4. To manage and process available data on health interventions and provide evaluation estimates economic evaluation/cost-effectiveness to the regional health strategies and interventions through Evaluation and make findings available for academic and research purpose for region users.

**Key Strategies of RDMC**

The RDMC follows the following five key strategies called CDCFU to build data management system in the region and to strengthen collaboration with region research institutes. In the CDCFU strategy; C for capacity building, D for data generating and sharing, C for collaboration, F for funding and U stands for utilization of evidence.

Strategy 1: Build capacities including human capital, digital infrastructure, systems and networks to ensure safe and secured data storage, sharing, access; systems and expertise for health data analytics (modeling, forecasting, data science, data mining, machine learning, integrated, heterogeneous and big data analyses); as well as systems and expertise to ensure advanced evidence synthesis and translations (Capacity).

Strategy 2: Establish regional standard repository and databases for health and health related data within RDMC, archive data, publish meta-data, facilitate data access and sharing, and apply advanced data analytics and visualization techniques to improve data and evidence availability and accessibility for local and international users (Data).

Strategy 3: Establish and strengthen local and international collaboration for the realization of the aforementioned four strategies of the center (Collaboration)

Strategy 4: Ensure local and international funding to undertake the different health and health related researches (Funding).

Strategy 5: Ensure utilization of data, analysis outputs, estimates and population health evidence for decision making at RHB and key partners (Utilization).

## RDMC on SiPHI’s strategic plan

At present, the institute is preparing its third Costed 10 year’s strategic plan aligned with the country’s 10-year development plan and with the second HSTP II. One of the core activities of the SiPHI’s strategic plan is enhancing regional health data repository, analytics through the application of data science and health metrics sciences, burden of disease estimates, digital health and information systems, where RDMC is responsible for its implementation. In this strategic objective, four strategic directions with major and detail activities, expected results, indicators and targets are described. The strategic directions are:-

1) Enhancing Regional health data repository, data security systems and strong data governance systems and maintain database interoperability.

2) Advancing public health through the development and application of data science, advanced statistical and mathematical modeling, computational methods, and visualization techniques.

3) Enhancing regional burden of diseases estimate using health metrics measurements.

4) Advancing evidence synthesis and translation for informed decision making.

# Chapter III: RDMC Data Management and Processing Approaches

The RDMC collects all available data on population and demography, mortality and causes of death, morbidity and disability, health risk-factors, evaluation and socio-demographic data, biomedical and basic science data in the country. The center follows different steps to achieve its intended goals.

Regional data management

Data sharing policy

PHEM

From Inside of SiPHI

RTT

Regional Laboratory

**Data sources**

VEhRA

Local universities

CSA

From outside of SiPHI

NGO

Local colleges

RHB

**Figure 1: Functional relationship of RDMC with regional research institutes and agencies to access all data inputs and provide outcomes to potential users of the center**.

The core processes are data collection from different sources within and outside SIPHI, store the data with different databases, process the data with standardized techniques, apply rigorous scientific methods and techniques, provide estimates and avail health data for public use based on request. To provide relevant evidence, it is critically important to pool primary and non-primary data to the center using data access and sharing modalities.

## Accessing available data in the Region

Data sharing remains a major challenge for RDMC as the culture and practices of sharing health data are underdeveloped in Ethiopia, as in many other settings. SiPHI and RHB are developing Regional Data Access and Sharing directive/guideline, for guiding research institutes, health care actors, agencies and researchers to share their research data as open as possible to RDMC, taking privacy constraints into account. The directive/guideline that SiPHI and RHB are developing will reinforce and empower institutions and universities to develop their own institutional data sharing guides. The directive/ guideline give direction to consider recognition procedures for data contributor. It also articulate the need for educating investigators, researchers, health care worker and other relevant actors on responsible data sharing and reuse practices through class work, mentorship, and professional development including the FAIR data principles. The directive/guideline promotes a framework for deciding appropriate data sharing mechanisms, platform and encouraging data sharing practices as part of publication policies. The directive/guideline addresses the need for funding the costs of data sharing, support for repositories, the adoption of data sharing infrastructure and systems/platforms. In addition, SiPHI and RHB develop plan for the implementation of the directive/guideline and advocate using workshops and various mediums for responsible data sharing.

# Chapter IV: RDMC Organogram, function and structure

## RDMC organogram

The RDMC is accountable to the General Director of SIPHI. The center has functional relationship with data generating directorates and other directorates of the institute. The RDMC intends to leverage on public health and biomedical data collected within SiPHI by the different SiPHI directorates‟ including; public health emergency, national laboratory capacity, Technology Transfer and Research Translation Directorate, Monitoring and Evaluation Directorate and others.

Laboratory Directorate

Si-PHI General Director

RTT Directorate

PHEM Directorate

HRM Directorate

RDMC Directorate

Gender Directorate

Audit Directorate

**Figure 2: Organogram of SIPHI and the Regional Data Management Center for health**.

## RDMC functions

1. Creating a coordinated and standard digital health data repository that support continuous collection, archiving, storage of health and health related data in the country obtained from various sources including research institutes, NGOs, CSA, VERA, academia, universities, health and demographic Director surveillance sites, regional, zonal and Woreda health bureaus, meteorology agency (climate and weather data); data from road traffic accident registration, professional association, cancer society as well as from national health data repositories where data can be legitimately accessed.

2. Establish strong health data governance. The center is responsible for establishing reliable, safe and secured data access and sharing platforms, procedures; create interoperable data systems and to implement the FAIR (Findable, Accessible, Interoperable and Reusable) data principles on health data.

3. Advancing health data analytics using cutting edge statistical, epidemiological and mathematical computations, metrics science, analytics sciences and techniques including heterogeneous data, big data and integrated data analytics, artificial intelligence, machine learning and data mining, modeling, forecasting, projection, tracking and evaluation to generate strong evidence and to build visualization platforms including dashboard to ensure analytic outputs are reaching to wide range of users.

4. Synthesizing strong evidence to inform health and health related policies, strategies and programs including progress tracking and evaluation of HSTP, Growth and Transformation Plan (GTP) and SDG targets of region by using a range of perspectives as economic/economic evaluation, disease control priorities, disease burden estimates. Moreover, the center conducts rigorous systematic reviews on regional priorities in health including but not limited to burden of diseases, impact evaluations, disease prevention and control as well as biomedical research. The center proactively seek and respond to evidence queries from program decision makers at RHB; provide support to academic institutions and jointly train graduate fellows focusing on data science, evidence synthesis and dissemination.

5. Maximizing health data and evidence utilization through open data systems and evidence translation platforms respectively to reach out decision makers, stakeholders, media and the population at large. These include producing evidence briefs, visualization, dashboard, social media and using conventional evidence translation platforms.

6. Capacity building is one of the major functions of the center which uses different approaches. This capacity building endeavor to foster in house capacities and for key partners and collaborators to achieve the objectives of the centers, ensure scaling up and sustainability.

## RDMC Structure

Currently, the RDMC has one unit. But, for the future the center may have four units which have interdependent functions and interconnected structure to achieve the broader objectives of the center. Now, the center is serving as four units. These units will have for the future are:-

### Data Repository and Governance (DRG) unit

The role of this unit is to map data sources with their respective data types. To map data sources, various approaches have been used including web search, technical reports, published articles, conference preceding, personal communication, academic and dissemination forums. The data mapping includes retrospective and prospective data types. After mapping, the unit sorts out the format and contents of identified data, then and approach primary owner/generator of the data using official procedure.

This unit builds regional health data repository, for archiving retrospective and prospective data collected from different sources. The health data repository has a highly secured digital platform with daily back up to protect the system from potential physical and cyber security threats. Data repository has been building with two-factor authentication including data mart, which has high storage for health and health related data and implementing a data warehouse with a data quality monitoring system.

The unit is responsible for improving the quality and integrity of health data. Using data quality assessment checklists, the unit reviews dataset to ensure its quality and to automate data quality assurance methods/ procedures. The data quality assessment findings serve as a feedback for data generating entities to improve the quality of their data. The team undertakes data standardization and classification activities to standardize the data and to maximize utilization. Introducing a system for grading data quality and making recommendation is another data quality assuring activity of the unit.

The unit establishes strong health data governance structures and systems including guidelines for data access and sharing, data governance counsel, digital platforms for data sharing and access, support drafting national data sharing regulation and proclamation. Strong data governance enhance the center’s move towards having an open data system and open data access to advance open research landscape, improved research integrity, innovation, and discovery (FAIR Principle). The unit aspires to have a national data-quality governing body to function through established standard process engaging various health data actors.

Data repository and governance unit

**Figure 3: Major activities of data repository and governance unit**

**Specific objectives of DRG case team**

1. Mapping and archiving prospective and retrospective data sets at regional level

2. Developing metadata for archived data sets,

3. Catalogue and index health and health-related data using standard systems

4. Create digital health data repository and tracking system

5. Digitization/automation of data systems and regular update with data dashboards

6. Establish health data governance systems and structures

7. Capacity building and technology transfer among different data actors

8. Improve data use culture through advocacy and promotion

9. Strengthen collaboration and engagement with Hawassa University, local NGO, and RHB.

10. Establish standards to assess the data quality of health data archived within the regional repository.

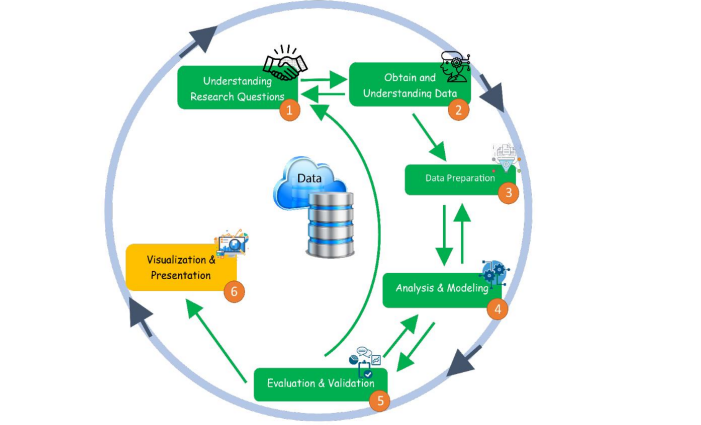
11. Establish advanced data infrastructure standard data warehouse and, building standard data security, backup and recovery systems

*12*. Digitize and archive hard copy years old, historic and precious documents.

13. Archive region’s scientific publications.

### 2) Data Analytics, Modeling and Visualization (DAV) unit

The goal of this unit is to transform health data analytics as well as outputs and result presentations using cutting-edge techniques, methods and applications that blend epidemiological, mathematical and statistical theories and rigorous techniques, modeling, forecasting, integrated analysis, heterogeneous and geospatial analysis. This is crucial because the conventional data analytic approaches are inadequate to the unprecedented volume of large and unstructured health and health related datasets. Analyzing such big datasets require wrangling, scraping, creating, and managing; applying advanced statistical and mathematical methods; application of data science methods to reveal features of large and complex health data to draw conclusions from the data. Summarizing and visualizing using digital platforms is an effective way for easy and timely communication of analytic outputs, which in turn facilitates easy understanding and interpretation by users. There is a constant increment in health and health related data. Owing to innovations and advances in biomedical and computational sciences, hitherto less valued varied data sources including satellite, GPS, telecom, climate, data from wearable devices, and machine readable data are becoming important source of health data. These voluminous fast velocity and big data of varied source as much as they present an opportunity, they also pose challenges to the conventional health data analytics. Moreover, as data are becoming deeper and richer with new sources of data generated using new technologies and sensors every now and then, our ability to harness and leverage useful knowledge from these data are critical to accelerate discoveries and innovations that can impact public health. This would require building Data Science and analytic capacities on machine learning/ artificial intelligence, modeling, forecasting and big data analytics.



**Figure 4: Flow diagram of data analytic, modeling and visualization unit**

**Specific objectives of Data Analytics, Modeling and Visualization (DAV) unit**

1. Apply data science, Machine Learning (ML)/Artificial Intelligence (AI), big data analytics techniques for heterogeneous, voluminous and big health.

2. Advance health data analytics, modeling, forecasting, integrated analysis, heterogeneous and geospatial analysis through development, customization, adoption and application of advanced statistical, Epidemiological and mathematical methods.

3. Developing all causes age specific mortality model for the region which project mortality trends since 1990 and forecasting across location and gender.

4. Developing infectious disease models for emerging as COVID 19, those on elimination target as Malaria and HIV/AIDS and other reemerging as Cholera using data from diverse sources including epidemiology, economic, clinical, climate, satellite and GPS.

5. Developing and maintaining interactive health data analytic platforms public health intelligence for the region.

6. Building epidemiological and climate model for predicting outbreak occurrence to support responses including early warning, preparedness and plan, mitigation, prevention, control and elimination strategies.

7. Supporting system automation and digitization work of the institute, the center and the team.

8. Building public health data science capacity within the center, at region level through short-term accredited training with training manuals and curricula on basics of health data science, and advanced data science.

9. Launching Fellowship and internship programs to attract high caliber experts, to tap on their expertise and to ensure sustainability and scale of the unit’s initiatives.

10. Improving the unit’s bio (statistical) and mathematical modeling, and data science utilization capacities.

11. Providing a scientific platform for advocating scientific analytic methodologies, and developed platforms.

12. Application of geospatial technologies and techniques for systematic management of geospatial data.

### 3) Evidence Synthesis and Translation (EST) unit

The ultimate goal of the unit is to support evidence informed decision and public health practices in region and beyond. Major activities of the unit are prioritization of regional health evidence demand; generation and synthesis of demand-driven high-quality evidences; health policy analysis; evidence translation and evidence use tracking. The unit intends to maximize evidence use at region level to inform decision and promote the culture of evidence-based decision-making and practice. It aims at improving evidence synthesis and through application of systematic reviews and rigorous standard scientific methodologies using various data sources archived by the data repository and governance unit of the center. The unit sets criteria to identify topics for analysis, areas that require evidence and areas where there are data gaps. Issues identified by RHB high-level decision makers who need the evidence to inform their day-to-day decisions often get priority. Prioritization criteria are evidence demand for policy, magnitude and severity of the issue, availability of data, availability of resources and feasibility to undertake the analysis among others. The unit annually releases priority thematic topics/areas to direct the center’s investment and to draw annual action plan. Moreover, the unit works closely with the DRG unit to map the data, the data sources and to review the data for prioritized topics. The unit follows different approaches to get lists of priority topics within the center and beyond. Moreover, the unit advises and facilitates research institutes and agencies to register their research areas prospectively, promote collection of primary data on data scarce priority topics of having regional relevance, and facilitate data availability and accessibility for the center. The unit actively engages in devising and communicating research data strategies, engaging local research partners and collaborators, and facilitating and securing research grant from government sources and funding organizations.

The unit conducts, evidence synthesis and coordinate, and facilitate this endeavors within and outside of the center. Synthesizing evidence to evaluate the impact of health policies and programs in promoting health and preventing diseases from health economics, demography, and epidemiology and disease burden perspectives. Synthesize evidence on disease prevention, control and health promotion. The unit synthesizes evidence for early warning, mitigation, control and response of and epidemics. Synthesize evidence on disease control priority, health system responses and challenges for communicable, infections, reproductive, maternal newborn and child health, on communicable diseases and injuries are activities of the unit. The unit undertake policy analysis, scrutinize health promotion and disease prevention strategies; track and monitor progress made in HSTP, GTP, SDG and other national and global targets. Synthesize evidence on universal health coverage, health extension program, primary health care, essential health service package are additional focus areas of the center; Evaluating the national public health status and health care delivery including disease control priorities through the use of economic evaluation for priority setting at regional level using trend analysis, systematic reviews, modeling techniques among others. In addition, the unit is also responsible for synthesizing biomedical research and basic science data available at region and other research institutes. These activities are interlinked with the other units of the center. Evidence translation activities of the unit include developing appropriate policy translation platforms and materials. Communication material includes publications, policy briefs, and web communications, preparing blogs, newsletters, press release and media briefs. The unit capitalizes on conventional and up to date evidence translation platforms including webpage, visualization, dashboard, social media, mainstream media, scientific evidence dissemination forums and reportable journals. Together with the Burden of Disease Unit, the EST unit coordinates manuscript writing workshop, conduct dissemination and scientific workshops. Establishing and strengthening strong partnership and collaboration is a key to the success of the unit. To this end the unit is building strong engagement team having commendable research communication skills. The unit invests heavily in forging collaborative partnership within region to optimize its activities and to secure joint funding.

**Specific objectives of EST unit**

1. Setting regional health priorities for evidence synthesis.

2. Synthesizing evidence on identified health priorities.

3. Enhance health informed decision making.

4. Advancing evidence translation and use.

5. Establish evidence use tracking mechanism for regular tracking of evidence us

### 4) Burden of Disease unit

This unit builds strong foundation for improving the validity and reliability of burden of disease estimates by coordinating national Global Burden of Disease (GBD) collaborative efforts. Evidence based public health practice are at the core in tracking and monitoring health progress, population health, demographic process and outcomes and achievement. Available evidence provides common indicators, which are critical elements for monitoring, tracking and evaluation across location, years, gender and age. To produce valid and reliable estimates in the region to help efficient utilization of limited health resources for priority areas.

**Specific objectives of burden of disease unit**

1. Develop and customize innovative burden of disease theories and concepts, methods and techniques.

2. Develop and execute regional burden of disease implementation working guidelines.

3. Provide regional burden of disease, and risk factor estimates.

4. Provide burden of disease estimates for regional SDG and HSTP indicators.

5. Produce annual regional health atlas by coordinating with National Data Management center (NDMC).

6. Provide strategic support to RHB and partners on burden of disease issues.

7. Strengthen regional and national burden of disease collaboration

8. Develop manuscripts and evidence briefs using GBD and other regional data sources.

9. Provide updated annual burden of disease estimates for regional Health Account and regional Drug and Logistic data triangulation

# Annex

**Technical Working Group members for developing the first guideline**

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