



Government of Pakistan
Ministry of National Health Services,
Regulations & Coordination



Health Information Systems 2020-2024

National Health Information
System Action Plan &
Provincial Roadmaps



Pakistan Health Information System Action Plan &
Provincial Action Plan

2020-2024

Ministry of National Services, Regulations & Coordination

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Pakistan: National Health Information System Action Plan & Provincial Roadmaps (2020-24)

Produced by:

Health Planning System Strengthening & Information Analysis Unit (HPSIU)- Ministry of National Health Services,
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In partnership with:

Punjab Department of Health

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Baluchistan Department of Health

Khyber Pakhtunkhwa Department of Health Newly Merged Districts

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Message from the Minister of State

On behalf of Ministry of National Health Services Regulations and Coordination, it gives me immense pleasure to announce the National Health Information System Action Plan (2020-24). It is a matter of honour and privilege for me, personally, to introduce the Health Information System (HIS) in the backdrop of significant and far reaching changes to the health system in line with the directives of the Prime Minister of Pakistan.

The role of health information that include routine data through information and management systems, civil registration and vital statistics (CRVS) systems, is widely acknowledged in furnishing data for programme monitoring, performance monitoring, quality of care, planning and policy-making. HIS and CRVS systems provide decision-makers with regular and continuous information on the coverage and utilization of health services and mortality statistics, including causes of death.

Strengthening the information systems, supports the decision-making processes, which have been identified as an important first step toward improving the efficiency, effectiveness, and equitability of the health information and its utilization in Pakistan. WHO & UNICEF in collaboration with the Ministry of National Health Services Regulation and Coordination and other development partners are working together to strengthen the Health Information Systems at the provincial and national levels. HIS activities are coordinated by the Health Planning, Systems Strengthening and Information Analysis Unit within the Ministry of National Health Services, Regulation and Coordination.

The HIS – Action plan provides a well thought out strategic framework for implementation of good governance parameters that can positively influence the achievement of health-related Sustainable Development Goals (SDGs) and Universal Health Coverage (UHC) targets within Pakistan.

I am confident that the Health Information System (HIS) provides evidence-based information on core health indicators in Pakistan, –and will provide the necessary impetus and guidelines for addressing the challenges facing the health system through appropriate and efficient deployment of advanced technologies as well as harnessing the skill of the health workforce.

It is important to acknowledge the hard work put in by the team of Ministry officials and provincial counterparts under the capable guidance of the Secretary and Director General Health. I wish to convey my sincere thanks to all the health professionals who contributed in this undertaking.

I look forward to the full commitment and dedication of all officials of the Mo NHR&C to achieve the expected health outcomes as envisioned in the National HIS— Action Plan & Provincial Roadmaps (2020-24).

Dr. Zafar Mirza

Special Assistant to Prime Minister (SAPM) / Minister of State for Health

Foreword

The Ministry of National Health Services, Regulations and Coordination since its creation in 2013, is making all possible efforts in providing common strategic vision to guide the health sector according to the Government of Pakistan's Vision 2025, which is to achieve universal health coverage through efficient, equitable, accessible and affordable health services to its entire populace; to coordinate public health and population welfare at national and international levels; fulfil international obligations and commitments; and provide oversight to health regulatory bodies.

In pursuance of the eight pillars of the National Health Vision (2016-25), the National Health Information System Action Plan is defined as one core pillar and relates to the common national priorities and guidance about the most important pillar of the health system in Pakistan. However, to implement the plan we need to make early corrective measures at national, provincial/area and district level to deliver the best possible results.

It is a proud moment when we present this strategic document that gives a plan for Health Information System to improve data, and information for better decision making. We see high level of commitment at the federal and provincial levels, and also among national and international partners to strengthen Health Information System across Pakistan.

On behalf of the federal and provincial/ area governments, it is a call for all the relevant public and private sectors stakeholders, nongovernmental organizations (NGOs), United Nations agencies and health development partners to extend their full support to the implementation of this action plan and actively engage in the HIS development process.

I really appreciate the dedication and commitment of the federal, provincial/area department of health and all those who have contributed to the development of this action plan. However, their task is not over yet and they have a long road to travel for successful implementation and monitoring of the action plan.

Dr. Allah Bakhsh Malik

Federal Secretary Health

Acknowledgements

The Pakistan Health Information System Action Plan (2020-24) reinforces the commitment of the government for creating a meaningful improvement in the health status of the people of Pakistan. The HIS action plan provides a way forward for strengthening the most important pillar of the health system and to achieve the goals set in the National Health Vision 2016-2025 and the Planning Commission's Pakistan Vision 2025.

In National Health Vision Health 2016-2025, Information System and Research is one of the eight core pillars. Some of important activities undertaken by Ministry include collaboration with WHO-EMRO and country offices for a scoping mission to Pakistan, that was conducted in December 2016 at the request of M/o NHSRC&C, and a detailed mission in July 2017 to assess Health Information Systems of Pakistan. UNICEF Pakistan provided HR support for these reviews. The main recommendations were to develop HIS action plan & provincial road map.

The work for the development of HIS action plan was initiated in 2018. A consultation was conducted with teams participating from each province/region in February 2019 to develop HIS action plan and provincial road map. During the consultation each province/region presented current status of the information systems and prepared respective action plan.

My gratitude is due to Provincial Secretaries of Health, Directors General Health Services, Academic Institutes and the development agencies in identifying focal points to constitute a National HIS Steering committee and a National HIS subcommittee.

I am grateful to Dr Palitha Gunarathna Mahipala, WHO Representative in Pakistan and his team especially Dr. Jamal Nasher, Coordinator Health System Development in providing technical inputs, all possible support to successfully complete the consultative process. Special thanks are due to Dr Arash Rashidian and Henry V. Doctor, Health Information Systems, Science, Information and Dissemination (SID) from WHO EMRO for providing support and guidance. I am also thankful to the UNICEF country office for being a key partner in this process.

I am thankful to all Departments of Health, DHIS Cells and all those who participated in a series of meetings, consultations, consolidating interventions and analysing the same to suggest common strategic areas for the action plan. This document could not have materialized without their efforts and technical work. It is worth mentioning the coordinating efforts of the Health Planning, System Strengthening and Information Analysis Unit (HPSIU)

under the leadership of Dr. Malik Muhammad Safi, Dr. Anjum Javed , technical support of Dr. Ahsan Ahmad , Ms Lubna Yaqoob and other members of the team.

I hope this action plan guides all provinces/areas, M/o NHR&C, all development partners and other stakeholders to effectively plan and implement interventions to strengthen health information system in Pakistan.

Many more individuals and organizations gave their time and suggestions to create this action plan and I am thankful to all of them. In the end, I call upon all stakeholders to support the implementation of this plan and achievement of targets.

Dr. Assad Hafeez

Director General (Health)

Abbreviations

API	Application Programming Interface
B&MGF	Bill & Melinda Gates Foundation
CRVS	Civil Registration and Vital Statistics
DHIS	District Health Information System
DoH	Department of Health
EMRO	Eastern Mediterranean Regional Office
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HPSIU	Health Planning, System Strengthening and Information Analysis Unit
HRMIS	Human Resources Management Information System
HSRU	Health Sector Reforms Unit
ICD	International Classification of Diseases
ICT	Information, Communication and Technology
IT	Information Technology
JICA	Japan International Cooperation Agency
LHW	Lady Health Worker
LQA	Lot Quality Assurance
LT	Long Term
M&E	Monitoring and Evaluation
MIS	Management Information System
MNCH	Maternal, Newborn and Child Health
MT	Medium Term
NTC	National Telecommunication Corporation
PBS	Pakistan Bureau of Statistics
PHC	Primary Health Care
PHE	Public Health England
RHIS	Routine Health Information System
SDG	Sustainable Development Goal

SID	Science, Information and Dissemination
SOP	Standard Operating Procedures
ST	Short Term
SWOT	Strengths, Weaknesses, Opportunities and Threats
TB	Tuberculosis
ToR	Term of Reference
ToT	Training of Trainer
UHC	Universal Health Coverage
UKAID	UK Department for International Development
UN	United Nations
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

Executive summary

The essential role of health information systems (HIS) including civil registration and vital statistics (CRVS) systems in generating health information data for programme monitoring, performance monitoring, quality of care, planning, and policy making, is widely acknowledged. Well-structured Health Information and CRVS systems provide decision makers with regular and continuous information on the coverage and utilization of health services, burden of disease statistics, including attributable causes of death. At the sub-national level, HIS data enables countries to assess equity in the provision of health services.

The Government of Pakistan had developed the first health management information system (HMIS) in 1992. Based on the study aimed at improving the management information system in the health sector (2004–2007), a new health information system based on the DHIS protocol was developed and rolled out across the country in a phased approach since 2005 in Khyber Pakhtunkhwa, Punjab, Baluchistan, and Sindh provinces, Federally Administered Tribal Areas, and Azad Jammu and Kashmir regions. The DHIS is one of the mainframe health recording and reporting systems undergoing some digitization at the reporting and management levels in Sindh, Punjab, Khyber Pakhtunkhwa, and Baluchistan provinces and also in Azad Jammu and Kashmir, Gilgit Baltistan and Federally Administered Tribal Areas. Work is currently under way to implement the DHIS in Islamabad Capital Territory. Routine health statistics are collected at the district and the provincial levels through the district health information system (DHIS) and programme management information systems. The structure of the HIS in the country remains fragmented with a number of vertical and multiple information systems that are not integrated at the sub-district, district, provincial and national levels. The implementation and consistent use of the DHIS as the main system across all the provincial departments of health is the key to ensuring that health-related data are generated for policy and planning at the facility, district, provincial and national levels. Recently, the country has integrated an AIDS/tuberculosis (TB)/malaria-specific management information system into a single platform by using DHIS2 platform and linked with the Pakistan HIS.

At the national level, HIS activities are coordinated by the Health Planning, Systems Strengthening and Information Analysis Unit within the Ministry of National Health Services, Regulation and Coordination. WHO and UNICEF in collaboration with the Ministry of National Health Services, Regulation and Coordination and other development partners are working together to enhance the national health information system.

In National Health Vision 2016-2025, Health Information System and Research is one of the eight core pillars. Some of important activities undertaken by HPSIU include collaboration with WHO – EMRO and country office for scoping mission for HIS review to Pakistan, that was conducted in December 2016 at the request of MoNHSRC, and a detailed mission in July 2017 to assess Health Information Systems of Pakistan. One of the main recommendations was to develop HIS action plan and provincial road maps.

With the support of WHO this Ministry has conducted a consultation with teams participating from each province/region in Feb 2019 to develop HIS action plan and provincial road map.

During the consultation each province/region presented current status of the information systems and prepared respective action plan. The interventions of eight HIS strategic objectives have been defined and a National HIS action plan and provincial roadmaps have been consolidated based on the provincial/area plans. The total cost of the action plan is 13,647,891 PKR for five years.

1. Background

1.1 Overview of the health information system in Pakistan

The role of health information system (HIS), including civil registration and vital statistics (CRVS) systems, is widely acknowledged in generating health information data for programme monitoring, performance monitoring, quality of care, planning and policy-making. HIS and CRVS systems provide decision-makers with regular and continuous information on the coverage and utilization of health services and mortality statistics, including causes of death. At the subnational level, HIS data enables countries to assess equity in the provision of health services.

The Government of Pakistan developed a health management information system in 1992 for the first time. Based on the study aimed at improving the management information system in the health sector (2004–2007), a new health information system based on the DHIS protocol was developed and rolled out across the country in a phased approach since 2005 in Khyber Pakhtunkhwa, Punjab, Baluchistan, and Sindh provinces, Federally Administered Tribal Areas, and Azad Jammu and Kashmir regions. The DHIS is one of the mainframe health recording and reporting systems undergoing some digitization at the reporting and management levels in Sindh, Punjab, Khyber Pakhtunkhwa, and Baluchistan provinces and also in Azad Jammu and Kashmir, Gilgit Baltistan and Federally Administered Tribal Areas. Work is currently under way to implement the DHIS in Islamabad Capital Territory. Routine health statistics are collected at the facility, district and the provincial levels through the district health information system (DHIS) and various disease specific (e.g. TB, EPI) and vertical programme (e.g. LHWS Program, Community Midwives Program) management information systems. Despite the presence of multiple HIS in the health system, the structure of the HIS in the country remains fragmented with a number of vertical and multiple information systems that are not integrated at the sub-district, district, provincial and national levels. The implementation and consistent use of the DHIS as the main system across all the provincial departments of health is the key to ensuring that health-related data are generated for policy and planning at the facility, district, provincial and national levels. Recently, the country has integrated an AIDS/tuberculosis (TB)/malaria-specific management information system into a single platform by using DHIS2 platform and linked with the Pakistan HIS.

At the national level, HIS activities are coordinated by the Health Planning, Systems Strengthening and Information Analysis Unit within the Ministry of National Health Services, Regulation and Coordination. WHO and UNICEF in collaboration with the Ministry of National Health Services, Regulation and Coordination and other development partners are working together to support enhancement of the health information systems at the provincial and national levels.

1.2 Overview of the health information flow in Pakistan

Routine health information in Pakistan, is captured through various health and management information systems in the country. Health facilities at the primary and secondary level relay information through the District Health Information System (DHIS), while various vertical programs and functions of the health services delivery through their respective Management Information Systems such as the Lady health Workers MIS, Tuberculosis Program MIS, MNCH-MIS etc. The information in DHIS and LHW-MIS on a monthly basis is collated at facility level and then sent to district and from district to the provincial level. At national level only selected information of indicators is collated. There are many mechanisms regarding information collection, some of the indicators are collected manually and some are electronically.

In Punjab 19 information systems are operational with 100% reporting compliance and coverage of DHIS. Two committees were notified for MIS, integration and upgradation of information system. The key challenges faced in Punjab are

- No data collection from private sector, which drains approximately more than 50% of the total patients.
- Multiple systems in action, resulting in confusion.
- Vacant posts
- Capacity issues

Support required from federal level:

- Policy for integration of systems on provincial level
- Legislation for inclusion of private sector for sharing data
- Capacity Building
- Uniform data collection indicators in all provincials/regions
- Biannual review of indicators at federal level

In Sindh 8 information systems are operational with 100% reporting compliance and coverage. The key challenges faced by Sindh:

- Recruitment of Data Analyst at Provincial M&E cell
- Recruitment of IT person for technical issues of online System
- Shifting of Online system on NTC network
- Allocation of annual subscription service charges in Regular Budget
- Regular Budget for Printing of DHIS Tools
- Capacity Building of Managers on Evidence based Decision Making
- Design and development of MIS for Tertiary Hospitals and Medical Institutes and Private Sector Hospitals

The key challenges face by Khyber Pakhtunkhwa province :

- Project staff is regularized due to which developmental budget will halt and on regular side it is an uphill task to get the budget.
- Newly merged districts need to be brought at par.
- For real time data, gadgets are required to be installed at facility level with complete package including overhauling the DHIS system, trainings etc. to switch to the next level
- Integration and configuration with other MIS needs support
- To bring tertiary level care in ambit, legislation and support is required.

The Key challenges faced by Baluchistan province:

- Less number of staff particularly for DHIS at districts
- Capacity building of the staff on data quality
- Reporting compliance
- Utilization & analysis of data by District managers
- DHIS provides only limited information on vertical programs data

2. Comprehensive health information system assessment

One of the aims of Ministry of National Health Services, Regulation and Coordination is to strengthen and integrate the HIS through its role of coordination by providing a joint platform for discussion and consensus-building with the provincial and regional departments of health. Recognizing challenges associated with the HIS, such as fragmentation and data quality, the Ministry is keen to implement measures aimed at unifying the various systems and preparing the country to report on the indicators required for reporting and monitoring at the national, regional, and international levels. To achieve this, a comprehensive assessment of the national health information system was conducted from 24 to 28 July 2017 aimed at supporting Pakistan's efforts to monitor health development and enhance its reporting capacity on the 100 core health indicators, the 75 regional core indicators, and the health-related Sustainable Development Goals (SDGs).

In line with the terms of reference, the HIS assessment team in 2017-2018 implemented a methodology that aimed at: developing common understanding of available information systems and databases; assessing the strengths and weaknesses of these components and operations within the HIS; and providing recommendations consistent with WHO and HIS standards, indicator frameworks and guidelines. The methodology followed an approach

developed by the WHO Regional Office for the Eastern Mediterranean for comprehensive assessment of HIS which includes desk reviews of available information on HIS, field visits, discussions with Ministry officials and a national workshop with relevant HIS stakeholders. During the HIS assessment, discussions were guided by the WHO monitoring and evaluation assessment and planning tool which provides an overview of the weaknesses and strengths of the country monitoring and evaluation systems and enables identification of priority actions based on those findings.¹

3. Summary results of the health information system assessment

Pakistan, as is the case with most countries, uses a HIS to serve multiple users and a wide range of purposes. The summary results of the HIS assessment focus on two key components: observations from the provincial field visits, and a quantitative assessment on the availability of key attributes of a functional HIS.

3.1 Observations from field visits

The field visits aimed at understanding the operations and functionality of the various components of the HIS at the provincial level and identify areas for improvement. This approach aimed at addressing the overarching assessment objective of identifying mechanisms to unify various HISs and preparing the country to report on the indicators required for reporting and monitoring at the national, regional, and international levels. For each province, the focus was on the strengths and weaknesses related to the four functional areas of: policy and governance; data sources; institutional capacities; and mechanisms for review, data use and decision-making. While the details results from the provincial visits have been outlined in the assessment report, briefly the assessment team found significant variations across the provinces visited. In some provinces there were significant investments made in enhancing the health information systems with established structures for coordinating provincial HIS-related activities. In other provinces, there were lack of coordinated mechanisms, limited investments in HIS infrastructure either with donor funds or domestic funding. Thus, the existing level of variation and fragmentation across the provinces is one of the key areas this action plan aims at addressing.

3.2 Sound policy and institutional environment

Using the HIS assessment and planning tool, workshop participants scored 71 attributes of a functional HIS across four categories: sound policy and institutional environment; well-functioning data sources; strong analytical capacities; and mechanisms for review and action. Key area requiring support in the category of sound policy and institutional environment include:

¹Comprehensive assessment of Pakistan's health information system 2017. Cairo: WHO Regional Office for the Eastern Mediterranean; 2018. Licence: CC BY-NC-SA 3.0 IGO

- A functional multisectoral coordination committee should be established to harmonize efforts in improving the HIS.
- The need for monitoring and evaluation (M&E) plan with clear indicators to be monitored, lack of HIS plan, and no clear standard operating procedures (SOPs) for data collection and monitoring progress.
- Weak coordination of HIS and M&E activities due to institutional administrative structures that have been affected by the post-devolution system of governance.

3.3 Data sources for health information systems

For the HIS data sources, the review team focused on two types: institution-based data sources (routine health information system, disease surveillance, and health systems information); and population-based data sources (household surveys, census, and CRVS systems).

3.3.1 Institution-based data sources

Key areas of support or improvement related to the following:

- Infrastructure and adequacy of staff for effective supervision and analytical capacities related to HIS activities.
- Feedback mechanisms and use of web-based systems across all reporting facilities.
- Equipping some provinces with Information Communication and Technology equipment and piloting and implementing DHIS-2 nationally
- Rolling out an electronic registry for the health workforce.
- Reviewing and updating the list of priority diseases and syndromes in some provinces including development of standards for case definitions.
- Integrating public health surveillance across all programmes and also strengthening public financial management system.

3.3.2 Population-based data sources

Key areas of support or improvement related to the following:

- Cause of death certification according to ICD coding and use of verbal autopsies to generate national representative cause of death data.
- Development of national survey plans.
- Coordination mechanisms to support implementation of CRVS interventions based on a CRVS comprehensive assessment that was conducted in 2013.
- Capacities for analysis of data from surveys and census including recruitment and training of additional statisticians, demographers and IT specialists in the Pakistan Bureau of Statistics (PBS) and the departments of health.

3.4 Institutional analytical capacities

Key areas of support or improvement related to the following:

- Setting up collaborative efforts to strengthen synthesis and analysis of national data from all sources and involve all key HIS stakeholders.
- Developing written guidelines and tools to support analysis and use of data.
- Ensuring that health data are transparent and accessible by establishing national health observatories and also improving data dissemination strategies.

3.5 Effective mechanisms for review and action

The main area identified for improvement was enhancing a system of joint periodic progress and performance reviews, including independent reviews of data, active engagement of civil society and incorporating results from reviews into decision-making.

3.6 HIS assessment and planning tool: scoring

A summary of scoring for the 71 attributes of a functional HIS (see Section 3.2) is displayed in Fig. 1. According to the assessment conducted by the workshop participants, 40% of the attributes of a functioning HIS are not present across all components; almost 59% of the attributes need some or significant strengthening, meaning that although key attributes of a good functioning HIS are in place, there is significant room for improvement; and the only attribute which was already present at the time of the assessment and which did not require further action was a comprehensive assessment of the CRVS system.

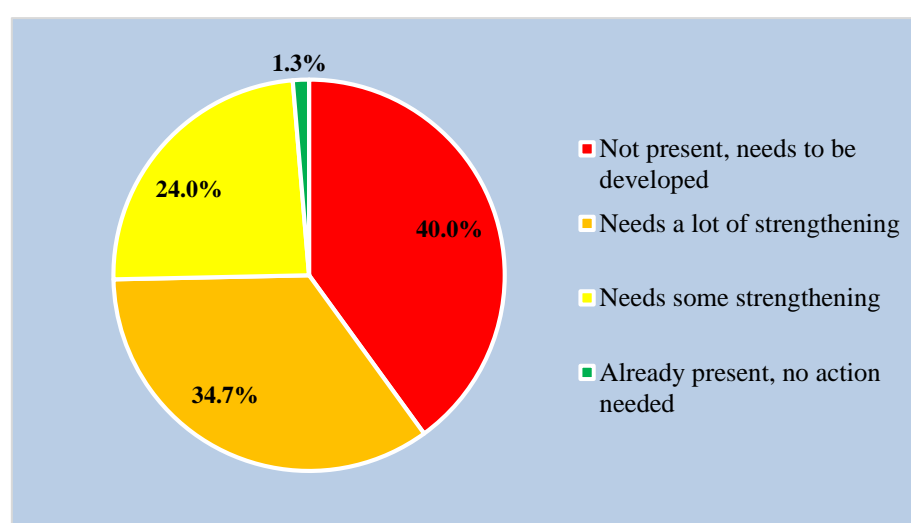


Fig. 1: Summary of scores from the assessment and planning tool

4. Pakistan health information system: SWOT analysis

As part of understanding the health information system operations in Pakistan, a summary of the Strengths, Weaknesses, Opportunities and Threats (SWOT) were identified. The results of this analysis are presented in Table 1 and show that the strengths and opportunities almost balance out with the weaknesses and threats. Addressing the challenges experienced by the national health information system was reiterated as a key priority in discussions during the HIS action development workshop. With the commitment of HIS stakeholders, the potential domestic and external funding sources, the HIS improvement agenda in Pakistan is tenable. Key to achieve this is continued coordination mechanisms and mobilization of both domestic and external resources to enhance the current HIS.

Table 1 SWOT analysis for Pakistan health information system

Strengths	Weaknesses
<ul style="list-style-type: none">• Availability of Health Information Centre• Gained experience in statistics and reporting and health surveys• The availability of legislation to support data collection• Availability of CRVS institutional and legislation infrastructure• Stakeholders of HIS are promising inside and outside MoNHSR&C• Availability of ICT services	<ul style="list-style-type: none">• Inadequate HIS resources• Changing country administrative structure in light of the devolution• Inadequate training programmes• Inadequate skilled ICT, epidemiologists and demographers• Non-standard approaches to data collection and sharing across the country
Opportunities	Threats
<ul style="list-style-type: none">• WHO continuous support• Other development partners' support for HIS strengthening• Willingness of national HIS stakeholders to support HIS strengthening process• Government commitment to modernize service delivery	<ul style="list-style-type: none">• Security situation in some areas• Lack of continuous financial support• Nonregulated private sector with respect to data collection and reporting

5. Vision, mission, and guiding principles

Vision: National health information system that leverages on the data revolution, uses innovative technology, produces reliable and timely information, meets the demands of policy makers and health planners across all provinces with partnership of all HIS stakeholders by the year 2024.

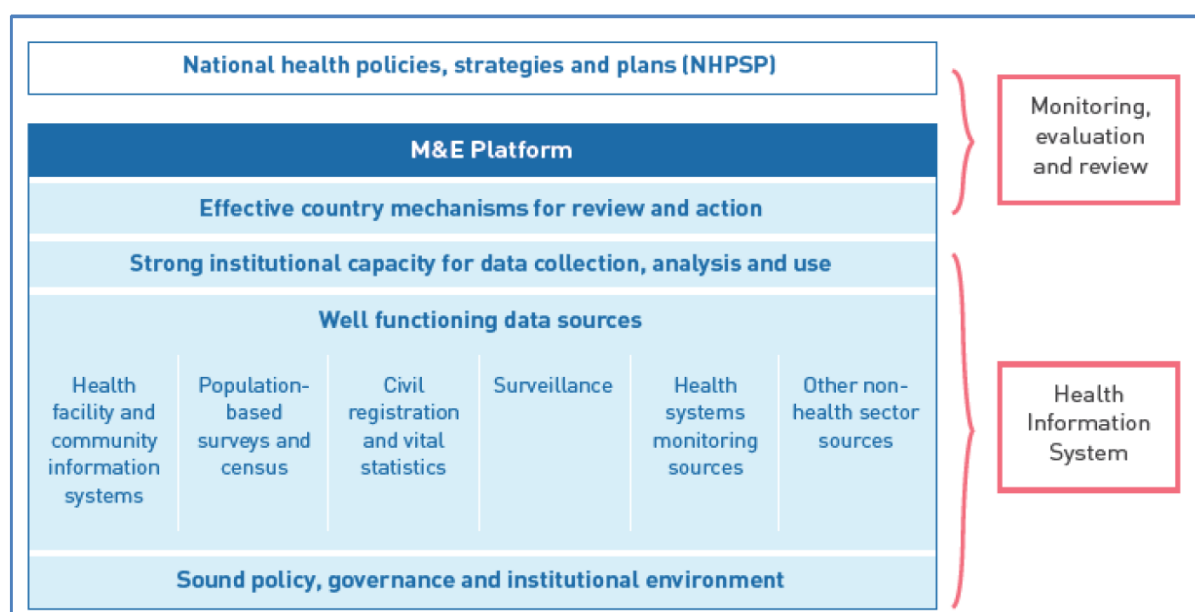
Mission: To provide a robust health information system that provides data to monitor health-related SDGs and national health targets and enables decision makers and program managers to make evidence-based decisions for better health outcomes.

Guiding principles: The national HIS action plan shall build on the United Nations Fundamental Principles of Official Statistics² encompassing the following dimensions: relevance; following international standards and ethics; accountability and transparency; prevention of misuse; confidentiality; proper legislation of HIS related activities; national and international coordination to enhance HIS operations; reliability; responsiveness; quality; sustainability; and use of innovative technologies.

6. Health information system strategic objectives

A single national-led platform consolidates all the key elements related to monitoring, evaluation and review of national health policies, strategies and plans including specific policy and plans relating to M&E and national health information system (Fig. 2).

Figure 1. M&E Platform and its proposed links with the health information system



Source: O'Neill et al. 2016, Fig 9.1.³

Consistent with the elements presented in Figure 1, the Pakistan HIS plan's strategic objectives are as follows:

²<https://unstats.un.org/unsd/dnss/gp/fundprinciples.aspx>; Resolution adopted by the United Nations General Assembly, 29 January 2014.

³O'Neill K, Viswanathan K, Celades E, Boerma T. Chapter 9. Monitoring, evaluation and review of national health policies, strategies and plans. In: Schmets G, Rajan D, Kadandale S, editors. Strategizing national health in the 21st century: a handbook. Geneva: World Health Organization; 2016.

- Objective 1:** Develop sound policy and strengthen HIS institutional environment
- Objective 2:** Strengthening health systems, health facility, and community information systems
- Objective 3:** Enhancing disease surveillance programmes
- Objective 4:** Enhancing CRVS, household surveys, and census operations
- Objective 5:** Enhancing evidence-based interventions through mechanisms for data use, review and action
- Objective 6:** Addressing fragmentation of HIS
- Objective 7:** Strengthening institutional capacity for data management and analysis
- Objective 8:** Transition to DHIS 2 platform

7. Logical framework, implementation plan, and key performance indicators

The logical framework addresses the eight key strategic objectives presented. For each strategic objective, the list of interventions to address the existing gaps is presented including the responsible actors, timeline, and the key M&E performance indicators.

Objective 1: Develop sound policy and strengthen HIS institutional environment

Strategies	Interventions/Activities	Responsible actors	Priority*	Timeline					Key performance indicators
				2020	2021	2022	2023	2024	
1.1 Prepare M&E Plan	Consensus building with all programs to identify key set of M&E indicators	Provinces, DHIS Cells, Vertical Programmes, HSRU	ST	✓					Key M&E indicators identified
	Once identified develop a plan to digitize/link up with digitized interfaces	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	MT	✓	✓	✓			A digitization plan developed
	Develop common platform for an integrated M&E dashboard/interface		MT	✓	✓	✓			M&E dashboard developed
1.2 Develop digital health strategy	Consultation of all provinces with support of a consultant	NHSR&C, Provinces, DHIS Cells, Vertical Programmes, HSRU	ST	✓					Consultative workshop conducted
	Development of digital health strategy	WHO	ST	✓					Digital Health strategy developed
	Dissemination of e-health strategy and implementation		MT	✓	✓	✓			Number of dissemination workshops conducted
1.3 Establish a functional national HIS steering committee	Finalization of TORs for national HIS steering committee	NHSR&C	ST	✓					TORs finalized
	Dissemination of TORs	WHO, UNICEF	ST	✓					TORs disseminated to stakeholders
	Meetings of national HIS steering committee		LT	✓	✓	✓	✓	✓	Number of meetings conducted
1.4 Operationalize M&E task force or HIS technical sub-committee	Share M&E task force TORs with all provinces and regions	NHSR&C, DOH	ST	✓					Taskforce TORs shared
	Notification of M&E task force by all provinces and regions	UNICEF, WHO	ST	✓					M&E taskforce introduced to provinces
	Follow-up meetings of M&E taskforce		LT	✓	✓	✓	✓	✓	Number of meetings conducted

1.5 Establish sound governance mechanisms	Strengthen existing health information system	NHSR&C, DOH	MT	✓	✓	✓			
	Define and implement data standards	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	MT	✓	✓	✓			Data standards defined
	Capacity building of data related personnel	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	LT	✓	✓	✓	✓	✓	Number of capacity building workshops conducted
	Oversee Implementation of HIS/Project Management	Donor Support	LT	✓	✓	✓	✓	✓	HR recruited
1.6 Develop mechanisms for establishing common investment framework for HIS strengthening	Prioritization of identified key areas	DOH	ST	✓					Priority list developed
	Identification of existing resources and donors to fill funding gaps	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	ST	✓					Report on resource and donor mapping
	Design common investment framework between provinces and regions	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	ST	✓					Presence of common investment framework
1.7 Conduct routine monitoring and evaluation of programme performance	Develop monitoring checklist	Provincial Govt	ST	✓					Monitoring checklist developed
	Develop monthly plans for monitoring	All supporting partners	LT	✓	✓	✓	✓	✓	Monthly monitoring plans prepared
	Meetings of monitoring committee	All supporting partners	LT	✓	✓	✓	✓	✓	Monitoring committee meetings conducted
1.8 Annual or biannual review of HIS performance	Develop checklist for HIS review	Provincial Govt	MT	✓	✓	✓			HIS review checklist developed
	Quarterly review at district level	All supporting partners	LT	✓	✓	✓	✓	✓	Presence of Quarterly Review Reports
	Biannual review at provincial level	All supporting partners	LT	✓	✓	✓	✓	✓	Biannual review reports available
	Annual review at federal level	All supporting partners	LT	✓	✓	✓	✓	✓	Annual review reports available

*Note: ST – Short term; MT - Medium term; LT – Long term.

Objective 2: Strengthening health systems, health facility, and community information systems

Strategies	Interventions/Activities	Responsible actors	Priority*	Timeline					Key performance indicators
				2020	2021	2022	2023	2024	
2.1 Assess current infrastructure needs, staffing and analytical capacities	Review existing assessment reports	DOH	ST	✓					Review reports available
	Conduct assessments for areas not covered by existing assessments to identify gaps and need for infrastructure, staffing and analytical capacities	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	ST	✓					Presence of assessment reports
2.2 Training of relevant HIS staff at all levels	Conduct needs assessment of all relevant HIS staff at the district and provincial level	DOH, NHSR&C	ST	✓					Needs assessment report prepared
	Develop training plans based on the assessment at facility, district and provincial level	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	ST	✓					Presence of training plans
	Conduct ToT at all levels		MT	✓	✓	✓			Number of ToTs workshops conducted
	Conduct training at end-user level		MT	✓	✓	✓			Number of end-user training workshops conducted
2.3 Purchase ICT equipment	Conduct needs assessment of existing ICT equipment to identify gaps	DOH, NHSR&C	ST	✓					Presence of needs assessment report
	Procure ICT equipment based on needs assessment	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	MT	✓	✓	✓			Presence of new ICT equipment
2.4 Develop and review standards for supportive	Review existing M&E checklist	DOH	ST	✓					Report on review of M&E checklist

supervision	Develop standardized supportive supervision checklist	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	MT	✓	✓	✓			Supportive supervision checklist conducted
	Promoting use of information for decision-making and streamlining HMIS systems for prompt actions		LT	✓	✓	✓	✓	✓	Number of workshops conducted on promoting use of information
2.5 Define indicators and targets	Review existing targets and indicators	NHSR&C, DOH	ST	✓					Review report on existing targets and indicators
	Finalize targets and indicators		ST	✓					Final list of targets and indicators available
	Develop mechanisms for utilization of core indicators		MT	✓	✓	✓			Presence of clear mechanisms
2.6 Develop an integration plan for vertical programs	Review existing MIS and develop MIS when needed	NHSR&C, DOH	MT	✓	✓	✓			Presence of MIS review report
	Assess HIS to identify areas for linkages	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	MT	✓	✓	✓			Presence of report on HIS areas for linkages
	Design an integrated dashboard with all core health indicators from all vertical programs		MT	✓	✓	✓			Integrated dashboard available
2.7 Review information system needs and the role of DHIS2	Review existing DHIS in provinces	NHSR&C, DOH	ST	✓					Review report on existing DHIS
	Standardize DHIS2 across all provinces	WHO, UNICEF, USAID, UKaid, PHE, JICA, GIZ, Global Fund, B&MGF	MT	✓	✓	✓			DHIS2 standards available
	Implement DHIS2 across all provinces		LT	✓	✓	✓	✓	✓	DHIS2 implemented
2.8 Develop an electronic Human Resources (HR)	Define indicators for HRMIS through consultative workshop	NHSR&C, DOH	ST	✓					HRMIS indicator list available

MIS	Develop and pilot a prototype HRMIS	WHO, UNICEF, USAID, UKaid, JICA, GIZ, Global Fund, B&MGF	MT	✓	✓	✓			Prototype of HRMIS developed
	Implement HRMIS across the country		LT	✓	✓	✓	✓	✓	HRMIS implemented across all provinces

*Note: ST – Short term; MT - Medium term; LT – Long term.

Objective 3: Enhancing disease surveillance programmes

Strategies	Interventions/Activities	Responsible actors	Priority*	Timeline					Key performance indicators
				2020	2021	2022	2023	2024	
3.1 Review and update priority list of notifiable diseases	Agree on common set of priority list of notifiable diseases	MoNHSR&C, Health Directorates	ST	✓					Priority list of notifiable diseases available
	Train staff on updated list and case definitions	WHO	MT	✓	✓	✓			Number of training workshops conducted
3.2 Legislation for mandatory case detection and reporting from public and private labs	Develop legislation for private sector based on priority disease list	Federal Law Department, WHO	ST	✓					Presence of legislation
	Implementation of legislation	NHSR&C, DOH	LT	✓	✓	✓	✓	✓	Legislation implemented across the country
3.3 Recruit data analysts and epidemiologists	Develop/update TORs for data analysts and epidemiologists	Provincial Public Health Cell	ST	✓					Presence of TORs for data analysis and epidemiologists
	Recruit data analysts and epidemiologists		MT	✓	✓	✓			Number of data analysts and epidemiologists recruited
3.4 Integrate public health surveillance and response systems	Develop SOPs for data collection	NHSR&C, DOH	ST	✓					Presence of SOPs for data collection
	Implement unique identification system for data collection at the primary facility level	WHO	MT	✓	✓	✓			Presence of unique identification system
	Quarterly review of disease surveillance system		LT	✓	✓	✓	✓	✓	Quarterly review reports available

3.5 Develop strategic action plans for the provision of resources and equipment	Provincial consultation on strategies	NHSR&C, DOH WHO, UNICEF, USAID, UKaid, JICA, GIZ, Global Fund, B&MGF	ST	✓					Number of consultation workshops conducted
	Develop provincial action plan		ST	✓					Presence of provincial action plan
	Financing the provincial action plan		LT	✓	✓	✓	✓	✓	Amount of money spent to finance the plan

*Note: ST – Short term; MT - Medium term; LT – Long term.

Objective 4: Enhancing CRVS, household surveys, and census operations

Strategies	Interventions/Activities	Responsible actors	Priority*	Timeline					Key performance indicators
				2020	2021	2022	2023	2024	
4.1 Deploy systems for ICD coding	Capacity building of staff on ICD coding	NHSR&C, DOH	MT	✓	✓	✓			
	Develop automated coding of cause of death	WHO	MT	✓	✓	✓			
	Implement WHO standard death certificate		MT	✓	✓	✓			Number of provinces adopting standard death certificate
4.2 Develop CRVS multisectoral strengthening plan	Develop multi-sectoral CRVS plan		ST	✓					CRVS multisectoral plan developed
	Stakeholders advocacy (MoPD)		ST	✓					
	Developing unique identification system		MT	✓	✓	✓			Unique identification system developed and implemented
	Developing Coordination with NADRA for unique identifications		MT	✓	✓	✓			Legislation developed and enforced
4.3 Strengthening analytical capacities of Pakistan Bureau of Statistics and national public health institutes	Conduct needs assessment of analytical capacity gaps	Ministry of Planning & Reforms	MT	✓	✓	✓			Needs assessment report available
	Develop curriculum to integrate key analytical capacities in academic training		MT	✓	✓	✓			Presence of curriculum
	Engage Pakistan Bureau of Statistics in national surveys to build capacity		LT	✓	✓	✓	✓	✓	Number of times PBS engaged in relevant national surveys

4.4 Development of multisectoral mechanisms to coordinate and develop harmonized national surveys plan	Constitute technical working group for integrated household surveys	NHSR&C, DOH	ST	✓					Functioning technical working group
	Develop national surveys plan	WHO, UNICEF, PBS, USAID, UKaid, JICA, GIZ, Global Fund, B&MGF	ST	✓					National survey plan developed
	Implement national surveys plan		LT	✓	✓	✓	✓	✓	Harmonized surveys conducted at national and provincial level

*Note: ST – Short term; MT - Medium term; LT – Long term.

Objective 5: Enhancing evidence-based interventions through mechanisms for data use, review and action

Strategies	Interventions/Activities	Responsible actors	Priority*	Timeline					Key performance indicators
				2020	2021	2022	2023	2024	
5.1 Develop an integrated web-based HIS system to address fragmented challenges	Development of input interfacing and dashboards	NHSR&C, DOH	MT	✓	✓	✓	✓	✓	
	Development of integrated dashboard as single platform for all programs	WHO, UNICEF, PBS, USAID, UKaid, JICA, GIZ, Global Fund, B&MGF	MT	✓	✓	✓	✓	✓	Presence of integrated dashboard
	Linking data from all programmes		MT	✓	✓	✓	✓	✓	Presence of linked data
5.2 Conduct regular data analysis, independent reviews of data, and performance reviews at the national and sub-national levels	Develop guidelines and SOPs to improve timely reporting of data	DOH, NHSR&C	LT	✓	✓	✓	✓	✓	SOPs and guidelines developed
	Conduct data quality audits	All other supporting partners	LT	✓	✓	✓	✓	✓	Data quality audit reports available
	Conduct data quality review for Service Availability Readiness Assessment		LT	✓	✓	✓	✓	✓	
	Monthly data validation and use meeting at facility and district level		LT	✓	✓	✓	✓	✓	Number of data validation and use meetings conducted at facility and

									district level
	Quarterly data validation and use meeting at provincial level		LT	✓	✓	✓	✓	✓	Number of quarterly data validation and use meetings conducted at provincial level
5.3 Awareness raising on importance of data and conducting ToT on data use and analysis	Capacity building of relevant staff on data use for decision making	DOH, NHSR&C	MT	✓	✓	✓			Number of staff trained on data use for decision making
	Provincial master training on data use and analysis	All other supporting partners	LT	✓	✓	✓	✓	✓	Number of people trained as master trainers
	District/end-user training		LT	✓	✓	✓	✓	✓	Number of staff trained at district level

*Note: ST – Short term; MT - Medium term; LT – Long term.

Objective 6: Addressing fragmentation of health information system

Strategies	Interventions/Activities	Responsible actors	Priority*	Timeline					Key performance indicators
				2020	2021	2022	2023	2024	
6.1 Define/update national core health indicators	Conduct national consultative workshop to develop/update national core health indicators in line with international health-related SDGs	NHSR&C, DHIS Cells	ST	✓					National workshop conducted
	Conduct provincial and district level workshops to disseminate the core health indicators	All supporting partners	MT	✓	✓	✓			Number of workshops conducted
	Update HMIS/DHIS with national core health indicators		MT	✓	✓	✓			HMIS/DHIS updated with national core health indicators
	Linkage of Health Facility Mapping across the Country at National Dashboard		ST		✓				
6.2 Develop integrated data aggregation and performance monitoring worksheets	Develop/update monitoring tool	NHSR&C, Provincial Govt	MT	✓	✓	✓			Monitoring tool updated
	Develop and implement feedback mechanisms (e.g. monthly meetings)	All supporting partners	LT	✓	✓	✓	✓	✓	Feedback mechanisms established and operational
	Identify gaps to support data aggregation for		MT	✓	✓	✓			
	Conduct regular Lot Quality Assurance (LQA) Sampling		LT	✓	✓	✓	✓	✓	Number of LQA sampling conducted
6.3 Develop/customize an electronic tool to calculate health indicators	Recruit IT staff (MIS, Software and Data)	NHSR&C, Provincial Govt	ST	✓					IT staff hired
	Review available electronic tools		ST	✓					Available electronic tools reviewed
	Revise/update the electronic tool	All supporting partners							Electronic tools developed/updated
	Create missing data summary**		ST	✓					Missing data summary tool developed

6.4 Develop data management and data use manual	Develop SOPs for data management	NHSR&C, Provincial Govt	ST	✓					SOPs for data management developed
	Develop capacity building plan for data management	All supporting partners	ST	✓					Capacity building plan developed
	Conduct ToTs for data management		MT	✓	✓	✓			ToTs conducted for master trainers
6.5 Produce periodic integrated reports	Meeting with stakeholders	NHSR&C, Provincial Govt	LT	✓	✓	✓	✓	✓	Number of meetings conducted
	Finalize reporting	All supporting partners	LT	✓	✓	✓	✓	✓	Number of reports prepared
	Automate reporting for easy accessing and dissemination		LT	✓	✓	✓	✓	✓	Automated reporting system developed
6.6 Produce special bulletins based on contemporary health issues and problems	Prepare timely feedback letter/email	Provincial Govt	LT	✓	✓	✓	✓	✓	Feedback letters prepared
	Constitute committee for bulletins	All supporting partners	LT	✓	✓	✓	✓	✓	Committee established and functional
	Produce quarterly bulletins		LT	✓	✓	✓	✓	✓	Quarterly bulletin produced

*ST – Short term; MT - Medium term; LT – Long term. **Similar to missing data summary created by Sindh Province for the LHW Programme

Objective 7: Strengthening institutional capacity for data management and analysis using DHIS 2

Strategies	Interventions/Activities	Responsible actors	Priority*	Timeline					Key performance indicators
				2020	2021	2022	2023	2024	
7.1 Assess existing capacity and architectural framework of DHIS at all levels	Assess capacity of DHIS in provinces with respect to data management, analysis and report generation	Provincial programmes UNICEF, WHO, GIZ, USAID	ST	✓					Assessment report on DHIS capacity in provinces
	Harmonization of all indicators through a consultative process		ST	✓					Harmonized list of indicators available
	Updating DHIS 2 with the harmonized list of indicators		ST	✓					Updated DHIS 2 with harmonized list of indicators
7.2 Develop SOPs for DHIS 2 data management and analysis including TORs for data management and analytical staff	Development of SOPs for data management	MoNHSR&C WHO	ST	✓					SOPs developed and regularly used by relevant staff
	Development of TORs for DHIS 2 staff		ST	✓					TORs for DHIS 2 staff developed
	Capacity building of DHIS 2 staff		MT	✓	✓	✓			Capacity building trainings conducted
7.3 Establish coordination mechanisms for submission and sharing of data in a timely manner	Develop data sharing mechanisms or protocols	MoNHSR&C WHO	ST						Data sharing protocols developed
	Conduct quarterly inter-provincial meetings at federal level		LT	✓	✓	✓	✓	✓	Quarterly meetings conducted
	Data sharing using established protocols		LT	✓	✓	✓	✓	✓	Data shared in required format
7.4 Strengthening of GIS with special focus on Public Health Indicators	Capacity workshop with the support of Survey of Pakistan	NEOC Polio, WHO & NHSRC	ST	✓					
	Linkage of Survey of Pakistan data with PHIS	NEOC Polio, WHO & NHSRC	ST	✓					

*Note: ST – Short term; MT - Medium term; LT – Long term.

Objective 8: Transition to DHIS 2 platform

Strategies	Interventions/Activities	Responsible actors	Priority*	Timeline					Key performance indicators
				2020	2021	2022	2023	2024	
8.1 Develop a DHIS2 readiness capacity building plan	Conduct baseline survey in all reporting units to assess readiness capacity	MoNHSR&C, Provinces	MT	✓	✓	✓			Baseline survey report prepared and disseminated
	Develop action plan based on baseline survey report	WHO	MT	✓	✓	✓			Action plan developed
	Approval of action plan		MT	✓	✓	✓			Approved action plan
	Selection of districts for pilot implementation of the readiness capacity building plan***		MT	✓	✓	✓			Completion of pilot study
	Implementation of the plan		LT	✓	✓	✓	✓	✓	Plan rolled out to all facilities
8.2 Draft a national-provincial SDG-DHIS2 target and incentive plan	Hire a consultant to develop a DHIS2 target plan	MoNHSR&C, Provinces	ST						DHIS 2 target plan developed
	Design, approve and advocate a DHIS2 incentive plan at the national level	WHO, USAID	LT	✓	✓	✓	✓	✓	Approved DHIS 2 incentive plan
	Conduct seminars to disseminate the DHIS2 target and incentive plan		LT	✓	✓	✓	✓	✓	Number of seminars conducted
	Implement incentive for employees on extra work hours		LT	✓	✓	✓	✓	✓	Enhanced efficiency and satisfied employees
8.3 Design a DHIS2 API/Mediator system	Identify the parameters for API	MoNHSR&C,	ST	✓					API parameters identified

	Technical review of APIs by technical committee	Provinces	ST	✓					Finalized parameters
	Development and testing of API	WHO	MT	✓	✓	✓			API tested and results shared with technical committee
	Implementation of developed API		MT	✓	✓	✓			API implemented
8.4 Define and operate a DHIS 2 certification programme	Comprehensive training of DHIS2 for provincial staff	MoNHSR&C, Provinces	LT	✓	✓	✓	✓	✓	Number of trainings conducted
	Award certification	WHO	LT	✓	✓	✓	✓	✓	Certificates awarded to qualified staff
8.5 Design and approve a master DHIS-2 rollout plan	Provincial and district staff prepare a roll out plan	MoNHSR&C, Provinces, Districts,	MT	✓	✓	✓			Master rollout plan developed
	Implementation of master plan	WHO	MT	✓	✓	✓			Master plan implemented
	Develop PC-1 for implementation of HIS (all provinces & areas)	NHSRC, DoH, Donors	ST	✓					PC1s developed
8.6 Design a DHIS routine bulletin	Development of Draft Quarterly Bulletin for approval by provincial MIS team	Provinces, Districts, WHO	LT	✓	✓	✓	✓	✓	Draft reviewed and finalized
	Approval of quarterly bulletin		LT	✓	✓	✓	✓	✓	Approved bulletin
	Printing and dissemination to all concerned authorities		LT	✓	✓	✓	✓	✓	Bulletin disseminated

*ST – Short term; MT - Medium term; LT – Long term; **Using districts already selected in the Prime Minister’s Health initiative

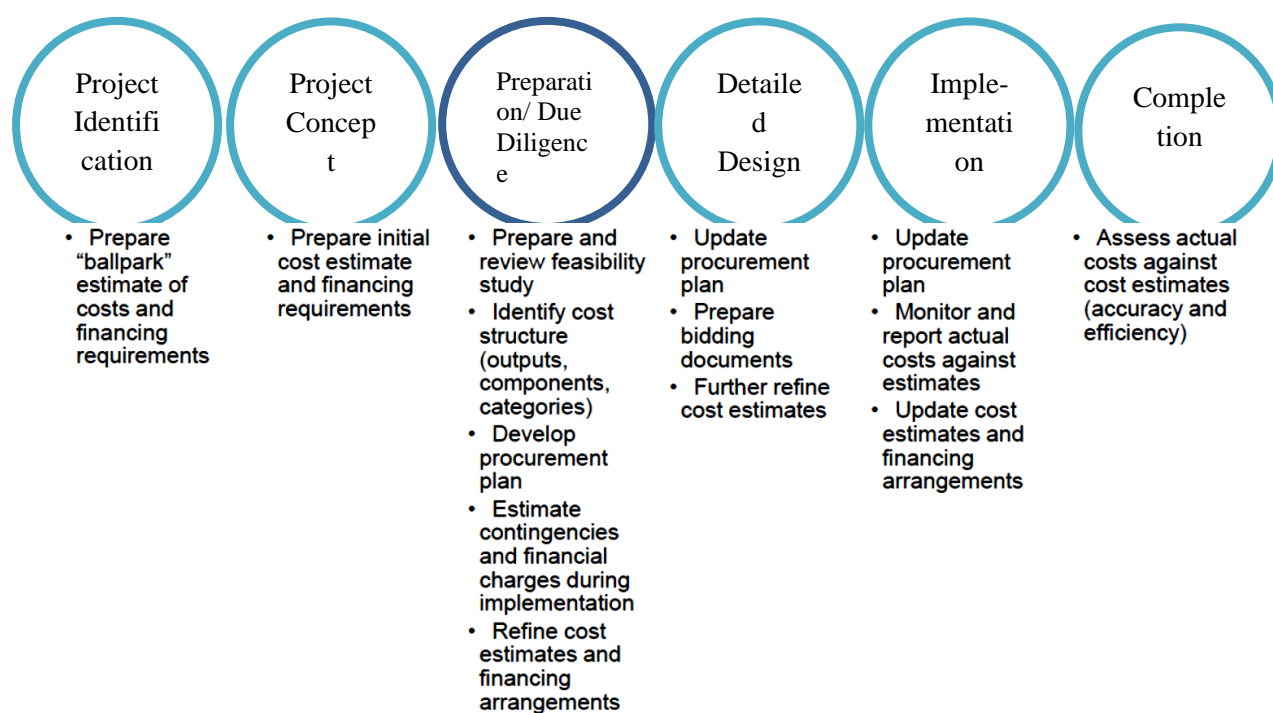
8. Financing the HIS strategy implementation

Enhancing HIS operations in Pakistan requires multisectoral coordination and significant financial, human and material resources. The Ministry of National Health Services, Regulations and Coordination, shall lead in mobilizing resources from both Government and external donors and partners. Provincial Governments and other stakeholders reflect their agreement to prepare respective PC 1s and have commitment to HIS strengthening through reasonable budget allocation for HIS operations and strengthening. WHO and other UN agencies and development partners whose mandate is to support countries in strengthening their health data systems shall complement the Ministry's efforts by allocating resources as well as mobilizing additional external resources. This action plan shall be used as a resource mobilization tool to ensure that adequate resources to strengthen HIS in Pakistan are available. This has been demonstrated by costing the HIS action plan according to the HIS strategic objectives (see Table 2).

8.1 Cost Estimates: Guiding Principles and Structure

A cost estimate approximates a project's probable cost. Cost estimates are prepared at concept stage, refined throughout the project-preparation process, and updated during implementation (see Figure.2) The cost estimate should identify those principal cost components needed to support effective project management (including monitoring of costs and physical progress during implementation). Cost estimates prepared using a Microsoft Excel spreadsheet.

Figure 2. Evolution of Cost Estimates during the Project Life Cycle



8.2 Guiding Principles

Ownership:

Project cost estimates should be prepared from the perspective of the project and therefore the borrower. Cost estimates should be sufficiently detailed and constructed to facilitate project financing and enable effective implementation.

Local currency basis:

Detailed cost estimates prepared in local currency units. Borrowers normally have a better appreciation of costs expressed in their local currency and the budgetary implications of the project will be more relevant. Preparing cost estimates in local currency units will also facilitate project monitoring and supervision as project accounting systems and financial reports are likely to be maintained in local currency units. Expressing the costs in local currency is also required for the purposes of their incorporation into the economic analysis and project entity financial projections. Project costs are also translated into USD equivalents.

Using Government accounting systems:

As much as possible, project expenditures should be categorized using the government's regular chart of accounts and accounting system. When determining how to structure and present project cost estimates, it is necessary to consider the structure and capabilities of the government's accounting system.

Foreign exchange and local currency cost:

The underlying project cost estimates should differentiate between foreign exchange and local currency costs as:

- (i) Component prices are likely to vary between local and international markets, taking into consideration, among other things, varying tax rates between import and local sales taxes, freight, customs, etc;
- (ii) Computation of price contingencies may differ according to currency;
- (iii) Having the detailed assumptions underlying the cost estimates will facilitate project management; and,
- (iv) This approach could highlight the extent to which the project could be susceptible to foreign exchange risks during implementation

8.3 Main Project Cost Elements

Cost estimates comprise of:

Base cost

Prepared on the basis of a detailed estimate of inputs, by expenditure category for each output/component, expenditure category, and/or implementing agency.

Base Cost Estimates

The base cost is prepared for each project component/output by expenditure category. It is expressed in local currency units at prices in effect at the date of estimation. The base cost would include all project-related costs irrespective of financing source.

The detailed base cost estimates should be based on quantitative estimates of project inputs. Input quantities are multiplied by estimated unit costs to derive the input base cost. The quantity of each

input should be based on the highest probability estimate. In some cases, inputs within the same expenditure category can be grouped for purposes of estimating unit quantities and costs.

For each component/output and expenditure category, the base cost should be allocated over the implementation period, based on a realistic expectation of when the expenditures are likely to be incurred.

Contingencies

Comprise separate physical and price contingency allowances. Physical contingencies are computed as a percentage of the base cost. Price contingencies are computed by applying cumulative cost escalation factors to the sum of the base cost and physical contingencies

Price Contingencies

Price contingencies will be calculated as a percentage of the sum of the base cost and physical contingencies for each component, subcomponent and expenditure category, applicable to foreign exchange and local currency costs.

8.4 Preparing, Reviewing, Monitoring and Updating the Cost Estimates

Typical steps in preparing the cost estimates include:

- i. Identify the project scope and outputs/components;
- ii. Identify and define appropriate cost categories (considering the government's own accounting, classification, and project reporting systems);
- iii. Estimate the local and foreign currency base costs on the basis of the unit costs and quantities required;
- iv. Allocate the base cost, in local and foreign currency, to each year over the project implementation period based on the implementation schedule and projected cash flow requirements;
- v. Compute the local currency equivalent of the foreign currency cost in each year by applying the projected exchange rate for that year;
- vi. Compute the price contingencies during implementation in local currency;
- vii. For presentation in WHO documents, convert project cost estimates in each year to USD equivalents by either by applying the exchange rate for the period.

Significant variations between costs estimated at fact-finding and those actually incurred have been a major issue in operations for years. The quality and reliability of cost estimates can vary widely.

The base cost estimates would be prepared using actual market prices for the various project inputs prevailing at the time of preparation. Where possible, unit cost estimates should be compared to

contract prices for ongoing or actual projects. While such information is generally taken from Government PC-1's and other development projects.

Table 2 Summary cost of financing the HIS action plan in Pakistan

Objective	Year 1	Year 2	Year 3	Year 4	Year 5	Total	%
Develop sound policy and strengthen HIS institutional environment	169,247	562,803	156,205	171,825	189,008	1,249,088	9%
Strengthening health systems, health facility, and community information systems	3,165	747,723	3,165	3,165	3,165	760,382	6%
Enhancing disease surveillance programmes	145,728	166,686	182,295	206,225	226,231	927,165	7%
Enhancing CRVS, household surveys, and census operations	5,696	5,696	139,875	5,696	5,696	162,660	1%
Enhancing evidence-based interventions through mechanisms for data use, review and action		4,076,929	1,202,561	1,043,759		6,323,248	46%
Addressing fragmentation of health information system	85,443	93,987	117,627	204,723	125,097	626,877	5%
Strengthening institutional capacity for data management and analysis			6,165	3,956	11,480	21,601	0%
Transition to DHIS 2 platform	28,481			988,944	2,297,773	3,315,198	24%
Contingencies	62,595	54,121	44,744	47,710	52,503	261,673	2%
Total	500,354	5,707,946	1,852,636	2,676,002	2,910,953	13,647,891	100%

Table 3 Summary cost of HIS action plan by National & Provincial level in Pakistan

	Federal	Sindh	Baluchistan	KPK	Punjab	AJK	GB	Total
Q1	47,146	7,120	7,120	7,120	7,120	7,120	7,120	89,867
Q2	31,956	12,259	12,797	11,595	13,620	9,222	9,222	100,671
Q3	40,051	11,867	11,867	11,867	17,563	11,867	11,867	116,949
Q4	124,152	12,259	12,797	11,595	13,620	9,222	9,222	192,867
Y1	243,304	43,506	44,582	42,177	51,924	37,430	37,430	500,354
Q5	1,190,516	7,832	7,832	7,832	7,832	7,832	7,832	1,237,510
Q6	1,184,574	13,485	14,077	12,754	14,982	10,144	10,144	1,260,160
Q7	1,424,525	13,485	14,077	12,754	20,678	10,144	10,144	1,505,807
Q8	1,628,882	13,485	14,077	12,754	14,982	10,144	10,144	1,704,468
Y2	5,428,496	48,289	50,064	46,096	58,475	38,263	38,263	5,707,946
Q9	372,294	19,138	20,641	17,635	23,648	13,125	13,125	479,606
Q10	348,435	14,834	15,485	14,030	56,037	11,158	11,158	471,138
Q11	345,118	8,616	8,616	8,616	37,097	8,616	8,616	425,292
Q12	387,758	14,834	15,485	14,030	22,177	11,158	11,158	476,600
Y3	1,453,606	57,421	60,226	54,310	138,958	44,057	44,057	1,852,636
Q13	382,285	9,477	9,477	9,477	9,477	9,477	9,477	439,147
Q14	381,160	29,998	32,146	31,315	35,432	17,749	17,985	545,786
Q15	409,397	88,747	79,610	86,640	245,565	75,080	10,455	995,496
Q16	103,946	88,747	79,610	84,655	251,262	75,080	12,274	695,574
Y4	1,276,787	216,970	200,844	212,087	541,736	177,387	50,192	2,676,002
Q17	91,217	90,098	79,259	86,569	260,605	79,512	23,820	711,080
Q18	54,328	97,622	87,571	93,120	270,122	82,588	13,501	698,853
Q19	53,221	105,146	96,136	104,039	285,587	85,665	16,578	746,372
Q20	109,363	97,622	87,824	93,120	270,374	82,841	13,501	754,647
Y5	308,129	390,488	350,792	376,849	1,086,689	330,605	67,400	2,910,953
Total	8,710,321	756,675	706,508	731,519	1,877,782	627,742	237,343	13,647,891
%	64%	6%	5%	5%	14%	5%	2%	100%

9. Institutional set-up for the HIS strategy

The HIS Action Plan represents views from national stakeholders on the key interventions to rebuild and strengthen HIS operations in Pakistan within the context of increasing demands for high quality data to monitor progress in improving health outcomes and reporting on core health indicators at the regional and international levels. The assessment of HIS in Pakistan identified the need to establish effective multisectoral coordination mechanisms to improve HIS operations. This can be achieved by establishing a functional national HIS steering committee and national HIS technical committee. The following sub-sections presents the ToRs for the coordination and technical committees, which were discussed and endorsed during the HIS action planning workshop in February 2019.

9.1 Terms of Reference: National HIS Steering Committee

The **Goal** of the steering committee will be to support the Health Planning System Strengthen and Information Analysis Unit at the Ministry of National Health Services Regulations and Coordination to achieve an integrated national HIS through coordination and joint collaboration, cooperation and communication among all partners and stakeholders.

The steering committee will serve as an advisory committee for the Health Planning System Strengthen and Information Analysis Unit in the Ministry of National Health Services Regulations and Coordination and for the technical subcommittee⁴ and to coordinate with and guide all stakeholders on policy and procedures needed to improve the completeness and quality of health information in the country.

Purposes and key responsibilities

The National HIS Steering Committee will have the following tasks and responsibilities:

1. Oversee the overall progress and implementation of the national HIS action plan.
2. Support the provinces and the HIS including MoNHSR&C in developing priority actions for improving HIS system;
3. Establish subcommittees (within the technical subcommittee) on different aspects of the national HIS, if needed;
4. Review the utilization of information in planning, implementing, monitoring and evaluating health program at all levels;
5. Mobilize resources for national HIS activities

Composition of HIS Steering Committee

⁴A subcommittee comprised of members that review and provide oversight for HIS issues.

	Job Title/Directorate	Role
	Steering Committee Members	
1	Federal Secretary Health, MoNHSR&C	Chairperson
2	Director General Health, MoNHSR&C	Co-Chair
3	Provincial/Area Director General Health, DoH	Member
4	Director Programs/HPSIU, MoNHSR&C	Member
5	Director of Information Technology, MoNHSR&C	Member
6	Advisor Health System, HPSIU MoNHSR&C	Member
7	Advisor Advance Data Analysis, HPSIU MoNHSR&C	Member
8	Senior Specialist MIS /IT, HPSIU MoNHSR&C	Member
9	Representative WHO Pakistan	Member

9.2 Terms of Reference: National HIS Technical Sub-Committee

Purposes and key responsibilities

All technical work will be delegated to the technical subcommittee(s). These technical subcommittees will be formed according to the domains of work. The technical subcommittee(s) will report to the steering committee for guidance or approvals.

- Map out all existing information systems that generate HIS data and ensure that they are consistent with expected standards to generate high quality data on core health indicators;
- Endorsing terms of reference for technical resources/consultants;
- Reviewing and approving the work of technical sub-subcommittees and technical resources/consultants;
- Identifying and defining core health sector indicators;
- Reviewing data collection tools and software in line with the national and international HIS requirements and standards;
- Validating data collected for core health sector indicators;
- Reviewing mechanisms to monitor storage, processing, analysis, reporting, dissemination and utilization of collected data;
- Advising on training programs for health information staff to ensure availability of adequate skills for the implementation of the health information strategy;

- Monitoring the production of quality and timely health profiles and any other health reports;
- Coordinating the overall implementation and review of the health information system action plan;
- Establishing and monitoring an integrated system for sentinel disease surveillance;
- Reviewing proposals for improving HIS;
- Identifying mechanisms on how the national HIS can be integrated with other sub information systems.
- Communication with other ministries and stakeholder such as Population Council, Pakistan Medical and Dental Council, Statistics Division and provincial Bureaus of Statistics, and Civil Vital Registration entities to achieve reliable, timely and complete data, and to improve integration between all sectors dealing with health information data
- Develop multi-year survey plan for conducting surveys in collaboration with stakeholders.
- Develop policies and procedure for all data between all HIS to be compatible with standards of MoNHSR&C (access to data, minimum set of data), accreditation for data from HIS with collaboration with quality directorate
- Improve HIS operations and the technology for recording births and deaths.
- Recommend and oversee implementation of standards to maintain privacy and confidentiality of data.
- Any other tasks assigned by the steering committee.

Composition of HIS Technical Sub-Committee

	Job Title/Directorate	Role
	Technical subcommittee members	
1	Deputy Director Program (Health Systems), MoNHSR&C	Focal point
2	Director Programs/HPSIU, MoNHSR&C	Member
3	Director Provincial/Area Health Information Cell DoH	Member
4	Director of Information Technology MoNHSR&C	Member
5	Advisor Advance Data Analysis, HPSIU MoNHSR&C	Member
6	Senior Specialist MIS /IT, HPSIU MoNHSR&C	Member
7	Joint ED, PIMS Hospital Administration	Member
8	National Vertical Programs (EPI, Polio, AIDs, TB and Malaria)	Member

9	Ministry of Planning Development & Reforms	Member
10	Pakistan Bureau of Statistics	Member
11	NADRA	Member
12	WHO	Member
12	UNICEF	Member
13	Other co-opted	Member

Meeting of the committee

- Meetings of the steering committee will held be twice in a year or as and when required by chairperson
- Chairperson of the committee is responsible for determining minutes of meetings, place, time of meeting and agenda
- Meeting for the technical subcommittee will be decided by the focal point for the technical subcommittee and can be held quarterly

10. Next steps

The action planning exercise is one of the key first steps to build an integrated national HIS in Pakistan. Ensuring sustained stakeholder involvement in resource mobilization is critical to the successful implementation of the HIS action plan. Further, ensuring that the information generated from the Pakistan HIS is used for planning and policy formulation is the ultimate goal towards achieving the health-related Sustainable Development Goals.



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