ASSESSING PARTNER ALIGNMENT IN SUPPORT OF THE HEALTH INFORMATION SYSTEM IN NEPAL

HEALTH DATA COLLABORATIVE

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Contents

Acronyms and abbreviations

ADB	Asian Development Bank
AeHIN	Asia eHealth Information Network
AIN	Association of INGOs in Nepal
AMP	Aid Management Platform
ARS	Ayurveda Reporting System
AWPB	Annual Work Plan and Budget
CBO	community-based organization
COVID-19	coronavirus disease 2019
CRVS	civil registration and vital statistics
CSO	civil society organization
DFID	Department for International Development
DHIS2	District Health Information Software
DHS	Demographic and Health Survey
DIN	Drug Information Network
DoCR	Department of Civil Registration
DoHS	Department of Health Services
DQA	data quality assessment
EDP	External Development Partner
EHR	electronic health record
EMR	electronic medical record
FCHV	female community health volunteer
FMIS	Financial Management Information System
GAP	Global Action Plan
GAVI	Gavi, the Vaccine Alliance
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH
Global Fund	The Global Fund for AIDS, Tuberculosis and Malaria
GoN	Government of Nepal
HDC	Health Data Collaborative
HIIS	Health Infrastructure Information System
HIS	health information system
HMIS	health management information system
HMN	Health Metrics Network
HuRIS	Human Resource Information System
ICD(-10/11)	International Classification of Diseases (10th/11th Revision)
ICT	information and communications technology
IHIMS	Integrated Health Information Management System
JFA	Joint Financing Arrangement
LMIS	Logistics Management Information System
M&E	monitoring and evaluation
MCCD	medical certification of cause of death
MFL	master facility list
MICS	Multiple Indicator Cluster Survey
NDHS	Nepal Demographic and Health Survey
NGO	non-governmental organization
NHRC	Nepal Health Research Council
NHSS	Nepal Health Sector Strategy
NHSSP	Nepal Health Sector Support Programme
NJAR	National Joint Annual Review
OPD	outpatient department
PLAMAHS	Planning and Management of Assets in Health Care System
PPMED	Policy, Planning, Monitoring and Evaluation Division
RHIS	routine health information system
SARD	South Asia Department [of the Asian Development Bank]
SDG	Sustainable Development Goal
SWAp	sector-wide approach
TIMS	Training Information Management System
TWG	Technical Working Group
UHC	universal health coverage
UK FCDO	United Kingdom Foreign, Commonwealth & Development Office
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

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Executive Summary

In support of the Health Data Collaborative (HDC), UNICEF commissioned a case study with the aim of understanding, at macro level, the status of the health information system (HIS) in Nepal, the investments that the Government of Nepal (GoN) is making to strengthen HIS, and the status of alignment of partner technical and financial investments to GoN priorities for strengthening the national HIS. Partners and stakeholders – including most of the major health sector development partners working in Nepal – were invited to participate in an interview or provide responses to a short email questionnaire. Stakeholder responses were analysed to generate a qualitative assessment of the status of alignment for that specific domain. Where stakeholder responses were scarce or not available, available documents were reviewed and analysed to provide relevant information.

A conceptual framework and interview/topic guides were developed to assess alignment across three domains: policy and regulatory alignment; systems alignment; and operational alignment.

Policy and regulatory alignment includes whether partners are aligned with a national plan or strategy on HIS, whether there are government-led coordination mechanisms, whether partners are represented and/or participate in these coordination mechanisms, and whether monitoring and evaluation (M&E) activities are aligned to a national-level M&E framework, including indicators and reporting. Policy and regulatory alignment in Nepal is strong.

Systems alignment refers to the harmonization of partners' technical and financial resources – that is, how partners' technical and financial resources are used in support of identified national priorities. Systems alignment also includes alignment of programme systems, such as ensuring that capacity-building approaches and remuneration of health personnel working on data systems are harmonized. Systems alignment in the HIS space in Nepal is assessed as moderate.

Operational alignment includes how partners communicate with each other, and also with health authorities at all levels. This also includes how information is shared and used between partners, and how partners coordinate their activities in time and space. Operational alignment between partners working on HIS in Nepal is also assessed as moderate.

Enabling factors for partner alignment in Nepal are:

- Existence of sectoral frameworks that channel technical and financial assistance in support of national priorities (e.g. sector-wide approach [SWAp], the Joint Financing Arrangement for health), as well as other aid management tools that promote alignment and harmonization.
- Strong government-led coordination mechanisms at federal level.
- Trust, clear common goals and ease of communication in a government-led coordination group.

Constraining factors for partner alignment are:

- A decentralized government with uneven coordination or alignment at provincial and local level.
- Lack of civil society representation in the federal-level technical working groups and other coordination mechanisms.
- Lack of framework to engage with non-governmental organizations (NGOs)/civil society organizations (CSOs).
- Partners' planning, M&E mechanisms are still separate.
- Reporting of indicators is not fully harmonized.
- Lack of oversight/visibility over private health providers and the arrangements made for engagement/cooperation with the private sector.

Going forward, stakeholder priorities for strengthening HIS and health data systems in Nepal include strengthening data quality and data use for evidence-based decision-making; strengthening the routine health information system (RHIS), including integrating vertical and parallel systems and ensuring interoperability; and ensuring that the infrastructure and supporting environment for HIS are fit-for-purpose.

1. Introduction

Background

The Health Data Collaborative (HDC) was established in 2016, with the aim of strengthening national and subnational systems for integrated monitoring of health programmes and performance. It aims to contribute to the goal of data-driven performance and accountability through supporting the collection, analysis and use of timely and accurate data. HDC's strategies for doing this are by enhancing country statistical capacity and stewardship, and for partners to align their technical and financial commitments around strong nationally owned

health information systems (HIS) and a common M&E plan. With stronger HIS, data generated will be more timely, accurate and comparable, and thus be more reliably used to design and monitor effective health interventions and policies.

Study objectives

The HDC's Theory of Change (see Figure 1) aims to align partner technical and financial investments with country-driven plans. The current HDC workplan specifies the two main objectives as follows:

- **Objective 1:** To improve efficiency and alignment of technical and financial investments in health data systems through collective actions.
- **Objective 2:** To strengthen country capacity to plan, implement, monitor and review progress and standardized processes for data collection, availability, analysis and use to achieve national health-related targets (and therefore eventual Sustainable Development Goal [SDG] health targets).

This assessment was commissioned by HDC with the overall aim of understanding, at the macro level, the status of the HIS in Nepal, the investments that the Government of Nepal (GoN) is making to strengthen its HIS, and the alignment status of partner technical and financial investments to GoN priorities for strengthening the HIS.

2. Concepts and definitions

Key concepts that are referred to throughout this report include the following:

Alignment: This study takes as a starting point that alignment refers to the extent to which available and allocated resources from partners – both technical and financial – support a government's national health objectives and strategies.

Technical investments: These investments include technical expertise and interventions by governments as well as national and international partners in support of national health objectives.

Financial investments: These investments included funding and finances allocated or spent in support of national health objectives.

Health information system (HIS): An HIS has "four key functions: data generation, compilation, analysis and synthesis, and communication and use."[1] The HIS generates and collects health-related data through the health sector or civil registration systems, as well as other relevant data (e.g., that pertains to social determinants of health); provides a means for analysis of the data; and then converts that data into information to be used for decision-making.

Country capacity: The ability to generate, collect, analyse and use health-related data to achieve national health objectives.

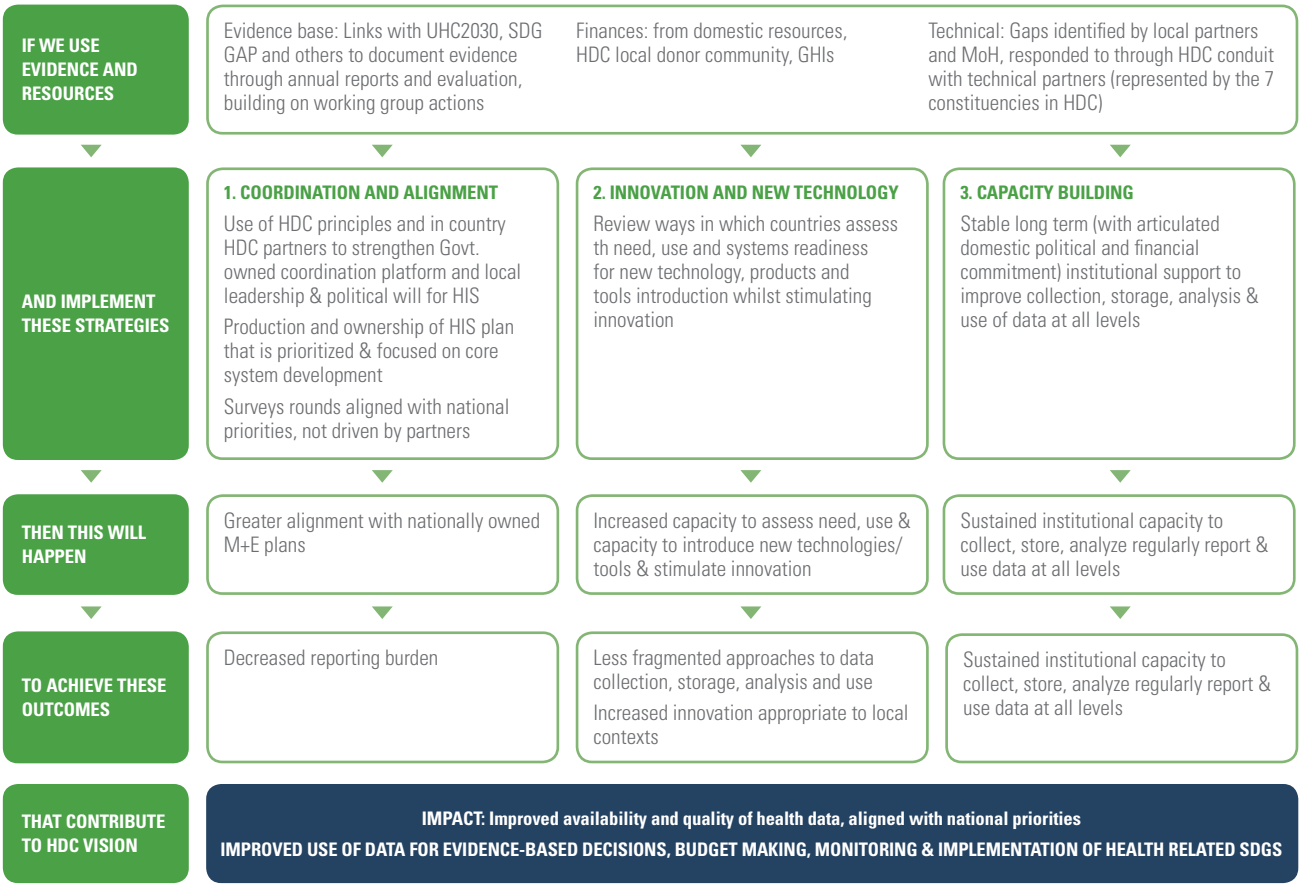
3. Methods

A conceptual framework (see Figure 3) and stakeholder interview guide (see Annex 2) were jointly developed between the case study authors, to frame and structure the various country case studies/assessments on alignment. For this assessment, partners and stakeholders – including most of the major health sector development partners working in Nepal – were invited to participate in an interview or provide responses to a short email questionnaire. Stakeholder responses were analysed to generate a qualitative assessment of the status of alignment for that specific domain. Where stakeholder responses were scarce or not available, available documents were reviewed and analysed to provide information relating to that component of alignment.

a. Desk review

An initial desk review was carried out on available information, including national strategies and publicly available planning documents, and provided either by the World Health Organization (WHO) and UNICEF country offices or national counterparts (the Ministry of Health and Population [MoHP] in Nepal). This helped to guide and focus the questions/topics to be covered during stakeholder consultations. An internet search was carried out to identify and collect country planning documents of major health sector partners for review. For the purposes of this assessment, the review was limited to the most recent country plan/strategy available by each of the major health sector partners, along with supplementary documents as available. In some instances, unpublished literature or documents were provided directly by partners or the MoHP. Finally, a limited review of recently published literature relating to the HIS in Nepal was carried out.

Figure 1. HDC's Theory of Change



Source: Health Data Collaborative, 'Who We Are', <www.healthdatacollaborative.org/who-we-are/>.

The desk review identified and collated information relevant to the areas of interest, namely: identifying the national objectives and strategic priorities on HIS, identifying partner investments into HIS, assessing areas where they are aligned and/or misaligned, and what gaps exist that may benefit from further investment. In addition, the desk review aimed to understand how health information flows from health facilities to districts/ provinces, and how they are aggregated and reported at the national level.

b. Development of survey/interview topic guides

terview topic guides were developed, with one targeted towards country-level stakeholders (including multilaterals, bilateral development agencies, international NGOs and other development partners that interface with the HIS at different levels) and a separate topic guide developed for private sector and academic/research institutions (see Annexes 2 and 4).

Based on consultations with the HDC Secretariat, two to three research questions/indicators per area were identified and included in the final survey/interview guides, which also included question probes.

c. Stakeholder mapping and consultations

Based on the desk review, as well as consultations with WHO and UNICEF regional and country offices, a list was developed of global, regional and country stakeholders involved in strengthening the HIS. Stakeholders were contacted through email, primarily through the Health Sector External Development Partners M&E/HIS Technical Working Group (TWG), and invited to participate in a virtual tele-interview. When interviews could not be conducted, stakeholders were invited to provide responses to a short email questionnaire (included in Annex 3). Not all stakeholders who were contacted responded to the request for interview or submitted a questionnaire

response. A total of five stakeholder interviews and one email questionnaire were completed.

d. Data analysis and development of final report
Data gathered through the desk review phase, as well as stakeholder consultations and interviews, were synthesized and analysed according to the conceptual framework. Qualitative data (from interviews) were transcribed and organized, then analysed according to the study questions. The HDC Steering Group and country stakeholders were invited to provide comments and feedback on the draft report prior to finalization.

4. Findings

4.1 Nepal's health information system (HIS)

Structure

Nepal has a federalized government structure, in which the responsibilities and functions of the different levels of government are outlined in the Constitution of Nepal, 2015. The Federal Government governs at the central level, there are seven provincial governments for seven provinces, and 744 local governments. Following the adoption of the 2015 Constitution, and the devolution of power to local levels, the health system governance has followed suit. The Ministry of Health and Population (MoHP) has the responsibility of developing and implementing health policies at the federal level and to monitor subnational health authorities. Provincial Ministries of Health are responsible for overseeing health service delivery from secondary and tertiary health facilities, and Health Offices in each of the 744 local governments oversee the primary health facilities at the local level, including primary hospitals, health posts, urban health clinics, community health units and others.[2]

Public health services are organized along the same lines: academic and super-specialty hospitals report to the federal MoHP; tertiary and secondary hospitals report to the Provincial Ministries of Health; and primary health facilities – including primary hospitals, health posts, urban health clinics, community health units and others – report to the local governments' Health Offices.

Private health facilities account for a significant proportion of service delivery facilities in the country. In 2019/2020, out of 6,372 health facilities in the country, 2,277 (36 per cent) were non-public facilities.[3]

Female community health volunteers (FCHVs) play an important role in the provision of primary health care and health promotion at the community level, particularly for mother and child health and family planning. They are supported by health workers and local health facilities. There are currently 49,481 FCHVs working throughout the country, and in fiscal year 2019/2020, 90 per cent of FCHVs reported data to the HIS.[4]

Nepal's HIS is elaborated in the Nepal Health Sector Strategy (NHSS) 2015–2020 (extended through July 2022) and the National Integrated Health Information Management System (IHIMS) Roadmap, 2021–2030. In addition, Nepal's 15th Periodic Plan (2019/2020–2023/2024) specifies that one of its health sector strategies is "to increase the use of data in monitoring, assessment, review, policy formulation, and decision process by making health information systems more systematic, integrated, and technology-friendly".[5]

In general, all health facilities, both public and private, have to generate and report health data as specified and required by each level of government, and report to the designated governing authority in specified formats with disaggregation specified by the governments. Concretely, each health facility reports their data to the Health Office of their local government. The local government Health Offices manage the data from all health facilities under them. All health facilities are asked to report online every month. In cases where the facilities are unable to do so due to an absence of equipment, logistics or connectivity, the municipalities manage the data entry. Hospitals enter their data directly to the health management information system (HMIS) database using District Health Information Software (DHIS2).

In Nepal, information systems providing health sector data include the IHIMS, the Logistics Management Information System (LMIS), the Financial Management Information System (FMIS), the Health Infrastructure Information System (HIIS), the Planning and Management of Assets in Health Care System (PLAMAHS), the Human Resource Information System (HuRIS), the Training Information Management System (TIMS), the Ayurveda Reporting System (ARS) and the Drug Information Network (DIN). In addition, disease surveillance systems, civil registration databases, censuses, sentinel reporting, and other surveys provide non-routine health information.

Given the various information systems operable in the country, the NHSS sets out 'Improved availability and use

of evidence in decision-making' as one of its outcomes. Key proposed interventions to support the achievement of this outcome include the integration of routine health information systems (RHIS), so that they are functional and interoperable. The National IHIMS Roadmap was prepared by the MoHP for the integration of different RHIS. The Roadmap elaborates on a proposed e-Health architecture framework to operationalize an integrated and interoperable digital HIS. Nepal's e-Health Strategy 2017 and the Roadmap 2019 have also been developed as guiding documents.

Funding, planning and budget cycles

The Collaborative Framework for Strengthening Local Health Governance in Nepal is included in the NHSS in order to strengthen decentralization planning and budgeting. The MoHP's Department of Health Services (DoHS) reports that the NHSS aims to "strengthen institutional capacity of MoHP to better regulate public and private health systems" and to support "mutually beneficial partnerships between the public and private sectors".[6]

Following decentralization, a greater share of the health sector budget has been allocated at the provincial level. From fiscal year 2014/2015 to fiscal year 2018/2019, per-capita health allocations at the provincial level increased on average by 34 per cent.[7] The level of per-capita spending on public health still remains low at US$22.30 in fiscal year 2019/2020,[8,9] although it has increased over the years.[10]

In fiscal year 2020/2021, over 63 per cent of the MoHP's budget was funded by external development partners (EDPs) – this includes both direct funding and pooled funding.[11] Of this, direct funding from EDPs accounted for 47 per cent of the MoHP's budget, with sector-wide approach (SWAp) pooled fund contributions accounting for 16 per cent of the budget. Both pooled and direct funding as a share of the MoHP's budget has increased over the years, particularly direct funding from EDPs, although this may be partly explained by improved expenditure reporting by EDPs.[12]

Health sector indicators and monitoring

The NHSS 2015–2020 and its accompanying Implementation Plan 2016–2021 has set targets for monitoring progress. The MoHP has also endorsed the health-related Sustainable Development Goals (SDGs) for the period 2015–2030, with periodic monitoring and reporting every three years, starting from 2019. The MoHP reports against all targets of SDG 3 (Good Health and Well-being) and SDG 2.2 (By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons). In order for this information to be reported at a national level, provincial and local-level authorities have to report the required data for NHSS indicators, as well as SDG indicators.

The NHSS results framework has 95 indicators over 10 goals and 9 different outcomes. In addition, there are 49 indicators relating to the health SDGs. Specific indicators relating to monitoring the strength of the HIS are shown in Table 1.

Status of the HIS

A WHO SCORE framework assessment was conducted for Nepal in 2020, using data from 2013–2018. Overall, Nepal rated as lower-medium to medium-high capacity across the five SCORE assessment domains: survey population and health risks; count births, deaths and causes of death; optimize health service data; review progress and performance; and enable data use for policy and action. The weakest point on the SCORE framework pertained to COUNT – that is, civil registration and vital statistics (CRVS) – and also use of the International Statistical Classification of Diseases and Related Health Problems (ICD) 10th Revision (ICD-10) for reporting deaths. Gaps were also identified in the domain 'Enable data use for policy and action'.

A MEASURE Evaluation assessment on the status of the HIS was completed in 2019.[13] That assessment has been updated below with current (2020–2021) data (see Table 2). Overall, data were found for 28 out of 30 indicators.

Table 1. HIS-specific indicators in the M&E Framework, mapped to the NHSS results framework and SDG-related goals

SN	Indicators	NHSS RF	SDG	Source	Frequency	Responsible Agency
	Improved availability and use of evidence in decision-making processes at all levels	**OC9**				
116	% of health facilities electronically reporting to national health reporting systems: HMIS and LMIS	OC9.1		HMIS	Annual	DoHS
117	% of children below 1 year whose births are registered	OC9.2		NDHS	5 years	MoHP
118	Overall score of health information system performance index (%)	OC9.3		PPMED record	Annual	MoHP
119	Number of HIS that have functional linkages with national database	OP9.1.1		PPMED record	Annual	MoHP
120	% of national-level surveys and research producing policy briefs	OP9.2.1		NHRC record	Annual	NHRC
121	Number of grants provided to public health institutions for innovation	OP9.2.2		AWPB	Annual	MoHP
122	% of RF indicators reported on specified frequency	OP9.3.1		MoHP website	Annual	MoHP
123	% of programme budget allocated for M&E	OP9.3.2		AWPB	Annual	MoHP
124	% of prioritized action points agreed during national review reflected in AWPB	OP9.3.3		AWPB and national review	Annual	MoHP

AWPB, Annual Work Plan and Budget; DoHS, Department of Health Services; HIS, health information system; HMIS, health management information system; LMIS, Logistics Management Information System; M&E, monitoring and evaluation; MoHP, Ministry of Health and Population; NDHS, Nepal Demographic and Health Survey; NHRC, Nepal Health Research Council; NHSS, Nepal Health Sector Strategy; PPMED, Policy, Planning, Monitoring and Evaluation Division; RF, results framework; SDG, Sustainable Development Goal; SN, serial number

Source: Health Sector Monitoring and Evaluation in Federal Context (in draft).[14]

Table 2. MEASURE Evaluation indicators of status of the HIS in Nepal*

Indicators	Description	HIS strengthening model component	Nepal
1. Country has a national health strategy (year)	A national health strategy outlines a country's vision, priorities, budgeting and planned action to improve and maintain people's health. Ideally, any activities for strengthening HIS are documented in the national health strategy.	HIS governance and leadership	Yes – Nepal Health Sector Strategy (NHSS) 2015–2020 and NHSS Implementation Plan 2016–2021
2. Country has a health sector monitoring and evaluation (M&E) plan	Once a country has a national health strategy, it should have an accompanying M&E plan. An M&E plan provides feedback on the effectiveness of the country's strategic plan for all major disease programmes and health systems. The motivation to improve HIS is often driven by national M&E needs.	HIS governance and leadership	Yes – Health Sector Monitoring and Evaluation in Federal Context (in draft)
3. Country has HIS policy (year)	Policies that govern national HIS are one indicator of its strength. HIS policies outline a deliberate system of principles to guide decisions and achieve better HIS outcomes.	HIS governance and leadership	Yes – Nepal Health Sector Information System Strategy 2007
4. Country has an HIS strategic plan (year)	Strategic plans for HIS are based on HIS assessments, such as those that were developed based on the Health Metrics Network (HMN) Framework (see #8 below). Strategic plans outline approaches to strengthen an HIS and describe costed interventions to achieve results.	HIS governance and leadership	Yes – Nepal National Integrated Health Information Management System Roadmap (2021–2030)
5. Country has set of core health indicators (year updated)	A list of core health indicators helps track progress. Availability of indicators and information on definitions, data sources and data collection methods are indicative of HIS performance and organization. Data should be comprehensive and cover all categories of health indicators: determinants, inputs, outputs, outcomes and health status. A core list of indicators can be part of the health sector M&E plan.	HIS governance and leadership	Yes – refer to NHSS Results Framework

Indicators	Description	HIS strengthening model component	Nepal
6. National HIS coordinating body/ committee	An interagency body or steering committee should oversee implementation of the national HIS strategy. This body should include representatives from the ministry of health, national statistics office, academia, telecommunications, local government and the private health-care sector. This committee can provide a technical advisory role for health and social welfare data managers in collaboration with other partners.	HIS management	Yes – the MoHP HIS/M&E TWG
7. Country has master facility list (year updated)	A master facility list (MFL) is a list of health facilities in a country (both public and private) and includes information that identifies each facility (unique ID). An MFL is important in monitoring health infrastructure and the services provided; it assists in calculating the percentage of facilities included in routine health data collection. This list should be updated regularly.	HIS governance and leadership	Yes – see Nepal Health Facility Registry at <https://nhfr.mohp.gov.np/>.
8. Conducted HMN assessment (year)	This is a self-assessment tool to: identify strengths and weaknesses of the national HIS, identify priorities for improvement, establish a baseline to monitor progress, and provide a basis for strategic planning.	HIS management	This was conducted in 2020.
9. Population census (within the last 10 years)	A population census collects data on the size, distribution and composition of the population, plus social and economic information. It provides sampling frames for surveys (household and other types). These population projections are used to calculate health indicators.	Data sources	The last census was completed in 2011. The 2021 census is currently being carried out.
10. Availability of national health surveys	National surveys include data collection on health-related behaviours and bioclinical measurements – e.g., Demographic Health Survey (DHS), Multiple Indicator Cluster Surveys (MICS) and living standards measurement survey.	Data sources	Yes – last one was completed in 2016. The sixth Nepal MICS was completed in 2019. The sixth Nepal DHS is currently ongoing, with final results expected by the first quarter of 2023.,
11. Completeness of vital registration (births and deaths)	Vital registration systems record the occurrence and characteristics of vital population events (e.g., births and deaths) and are a main source of population statistics. Countries with complete vital statistics registries (at least 90 per cent coverage) may have more accurate and timely demographic indicators.	Data sources	Partial – see Status of Civil Registration and Vital Statistics in South Asia Countries (2019) from the UNICEF Regional Office for South Asia. Also see Get Every One in the Picture midterm assessment for Nepal (2020).
12. Country has electronic system for aggregating routine facility and/or community service data	Many countries are transitioning from paper-based systems of aggregating routine health data from facilities and community services to electronic systems. Electronic systems assist data collection, data transmission, data quality, and aggregation. This can be DHIS2 or another system.	Data management	Yes – DHIS2.
13. Country has national statistics office	This government agency should be a designated and functioning mechanism charged with analysis of health statistics, synthesis of data from different sources, and validation of data from population-based and facility-based sources.	Data management	Yes – the Central Bureau of Statistics.
14. National health statistics report (annual)	This report summarizes the status of health indicators. It is produced annually and should provide information on health statistics nationally and by region, and can include service delivery statistics and specific health outcomes. It can be called by various names, such as an annual HMIS report, annual performance report, health and health-related indicators report, etc.	Information products and dissemination	Yes.
15. Country's ministry of health has an updated website	A health ministry website should have the most recent health data and make available various reports covering different health and health programme areas. It may link to other national and subnational departments and websites.	Information products and dissemination	Yes – see <www.mohp.gov.np>.
16. Data quality assessment (DQA) conducted on prioritized indicators aligned with most recent health sector strategy (year of most recent)	DQAs are important for gauging the overall quality of routine health data. DQAs are conducted at the facility level where essential data are gathered for monitoring interventions to address specific health areas such as HIV, tuberculosis and malaria. DQAs should be conducted within the current health sector strategy cycle.	Data management	Partial. As of June 2020, 300 health facilities have implemented the routine DQA using online and offline platforms (reported in the National Joint Annual Report 2020).

Indicators	Description	HIS strengthening model component	Nepal
17. PRISM assessment conducted in any regions/ districts	This is an assessment of the performance of a RHIS or HMIS. The framework consists of tools to assess RHIS performance; identify technical, behavioural and organizational factors that affect RHIS; aid in designing priority interventions to improve performance; and improve quality and use of routine health data.	HIS management	Yes – an RHIS assessment was conducted in 2020. WHO SCORE assessment was also updated in 2021.
18. Percentage of facilities represented in HMIS information	Countries should define core data that all facilities report at prescribed times throughout the year (monthly, quarterly, biannually, or annually). The percentage of facilities that report should be recorded in HMIS reports (the number of facilities reporting [numerator] divided by the total number of health facilities [denominator]).	Data quality	Public facilities: Consistently over 90 per cent for 2019–2020 Non-public facilities at national level: 52.5 per cent; varies by province (from ≤40 to 100 per cent).
19. Proportion (facility, district, national) offices using data for setting targets and monitoring	Use of routine and non-routine data helps in setting annual targets and monitoring key indicators. It is critical for evidence-informed decision-making. This information may be available from country reports, meeting minutes, or through special studies.	Data use	The specific proportion is unknown, although in-country contacts suggest that this is done at all levels and community-level health facilities.
20. Measles vaccination coverage reported to the World Health Organization (WHO)/UNICEF	The ability to report the proportion/percentage of children aged 1 who received one dose of measles vaccine is a measure of HIS performance. The WHO site that is the data source for this indicator presents information from both the United Nations/ WHO estimates and official government figures, which allows comparison of the two.	HIS performance	Yes.
21. Number of institutional deliveries (births) available by district and published within 12 months of preceding year	Births that occur in institutions (e.g., hospitals and health clinics) and that are attended by skilled and trained staff can provide necessary supervision, care, and advice to women during pregnancy, labour, and the postpartum period. The number of institutional deliveries is the numerator in determining coverage and is an indicator of HIS performance.	HIS performance	Yes – see Annual Health Report.
22. Existence of policies, laws and regulations mandating public and private health facilities/ providers to report indicators determined by the national HIS	Countries should have a regulatory framework for the generation and use of health information, which helps to ensure data availability from public and private providers. This may include specific laws; however, in some cases, it may be contained in other policies or regulations.	HIS governance and leadership	Yes – see the M&E plan.
23. Availability of standards/guidelines for RHIS data collection, reporting and analysis	To ensure uniformity and standardization in the collection of RHIS data, countries need standards or guidelines describing how data should be collected, reported and analysed. This information is used for training and should be available as reference documents.	HIS management	HMIS guidelines have been developed, as well as a HMIS Tool Book. Standard operating procedures are still in development.
24. Presence of procedures to verify the quality of data (accuracy, completeness, timeliness) reported	As part of an effort to assure data generated by the HIS is of high quality, countries need procedures to assess data quality. These can include data accuracy checklists prior to report acceptance, internal data quality audits and written feedback forms.	Data management	Yes – Routine DQA is being rolled out; 26 health facilities completed the RDQA in 2019–2020.
25. RHIS data collection forms allow for disaggregation by gender	To ensure gender equity in health, countries need to collect and analyse data by gender. Data collection forms should allow for gender disaggregation in RHIS, for indicators where this information would be appropriate/relevant.	HIS governance and leadership	Yes.
26. At least one national health account completed in last five years	This is a process through which countries monitor the flow of money in their health sector. The information is needed to determine the level of financing provided to the HIS.	Data sources	Yes – last one was conducted in 2016–2017. Publication is planned for every two years.
27. National database with health workers by district and main cadres updated within the last two years	This database gathers data from multiple sources, including census, labour force surveys, professional registers, training institutions and facility assessments. The information is needed to estimate the current workforce and plan for future staffing needs.	Data sources	This is in progress. There is a Health Workforce Registry, which is run by five professional councils (Medical, Nursing, Health Professionals, Pharmacy, and Traditional Medicine). Work is ongoing to integrate all of the different registries into a single database.

Indicators	Description	HIS strengthening model component	Nepal
28. Annual data on availability of tracer medicines and commodities in public and private health facilities	This indicator assesses the availability of data to measure the use of medicines and health commodities, both to measure service provision and to monitor availability of medicines and commodities to ensure there are no stockouts and that necessary commodities are available in facilities.	Data sources	Yes – reported in the LMIS. Last reported in the National Joint Annual Review Report 2020.
29. e-Health strategy	With the introduction of information and communications technologies into health care, countries should set a strategy for how e-Health will be organized and used. This strategy should be current with the national health planning cycle.	HIS governance and leadership	Yes – Nepal e-Health Strategy 2017. This may be updated soon, in line with the WHO Digital Health Strategy 2020.
30. Completeness of disease surveillance reporting	Percentage of disease surveillance reports received from districts to the national level compared to the number of reports expected. This percentage will indicate whether such data are available and note the most recent compilations (by year or month).	Data quality	Surveillance of vaccine-preventable diseases is robust and supported by WHO. Early Warning, Alert, and Response System reporting is partial. It has been rolled out to 118 hospitals, of which only around 70 per cent are reporting.

* This matrix with indicators and definitions is from MEASURE Evaluation. It has been updated with current indicators and data for Nepal, by the report author.

Based on gaps identified using the SCORE framework and the MEASURE Evaluation framework to assess Nepal's HIS, the main gaps or areas of weak capacity in the HIS appear to pertain to CRVS, classification of deaths, data use, and human resource capacity.

With regard to CRVS, specific weaknesses of Nepal's CRVS system include, amongst others:

- Civil registration of births is not universal – the current reporting baseline is 77.2 per cent for 2019 (target: 85 per cent by 2024).[15]
- Recording of deaths with cause of death as defined by the ICD-10 is low. The ICD-10 is currently being implemented in hospitals for morbidity and mortality data management, and there is a plan to start implementation of the 11th revision (ICD-11) in 2022, for which training has already commenced.[16]
- Poor coordination amongst the multiple government agencies involved has slowed progress of digitalization of vital statistics.
- Lack of trained personnel to perform civil registration duties, further constrained by old and slow infrastructure, equipment and technologies.

The World Bank has been funding a project, 'Strengthening Systems for Social Protection and Civil Registration' to support the Civil Registration and Social Security Strengthening Programme of the Department of Civil Registration (DoCR).

Data use also emerges in the stakeholder interviews and desk review as a component of the HIS that requires further work and investment. Stakeholders report that data generated through the RHIS is used for setting targets, managing commodities and stock levels, planning for human resources, observing service utilization, and so on. However, there is no formal data sharing and data use strategy, and it is unclear what proportion of local and provincial health facilities have the capacity to utilize data being generated.

Digitalization of Nepal's HIS

Nepal's digital health journey is framed by the National e-Health Strategy (2017), which was the product of efforts by WHO, UNICEF, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) and other MoHP partners. The National e-Health Strategy calls for "cost-effective, standardized, efficient, interoperable and user-friendly e-health solutions and applications."[17]

Prior to that, DHIS2 was introduced in Nepal in 2013 and in 2021, it was rolled out to all health facilities. In fiscal year 2020/2021, 1,400 public health facilities (out of a total of 4,095 public hospitals, primary health-care centres and health posts) submitted HMIS monthly reports electronically.[18] Challenges relating to the digitalization of health sector reporting primarily relate to weak capacity of health workers in reporting, and also electricity and connectivity challenges, particularly in rural regions of the country.

Electronic health records (EHR) and electronic medical records (EMR) systems have also been piloted, two at hospital level, and two focusing specifically on immunization of children at district-level health facilities.[19]

The United States Agency for International Development (USAID) is currently supporting the LMIS data management and training. The software is made available at all local levels, districts and provinces.

4.2 Partners and stakeholders in Nepal

Figure 2 shows the various health sector stakeholders working in Nepal, as well as the main coordination mechanisms by which they interface with each other and with the MoHP. It does not contain an exhaustive listing of all NGOs/CSOs working in the health sector in Nepal. Annex 2 contains a stakeholder information table.

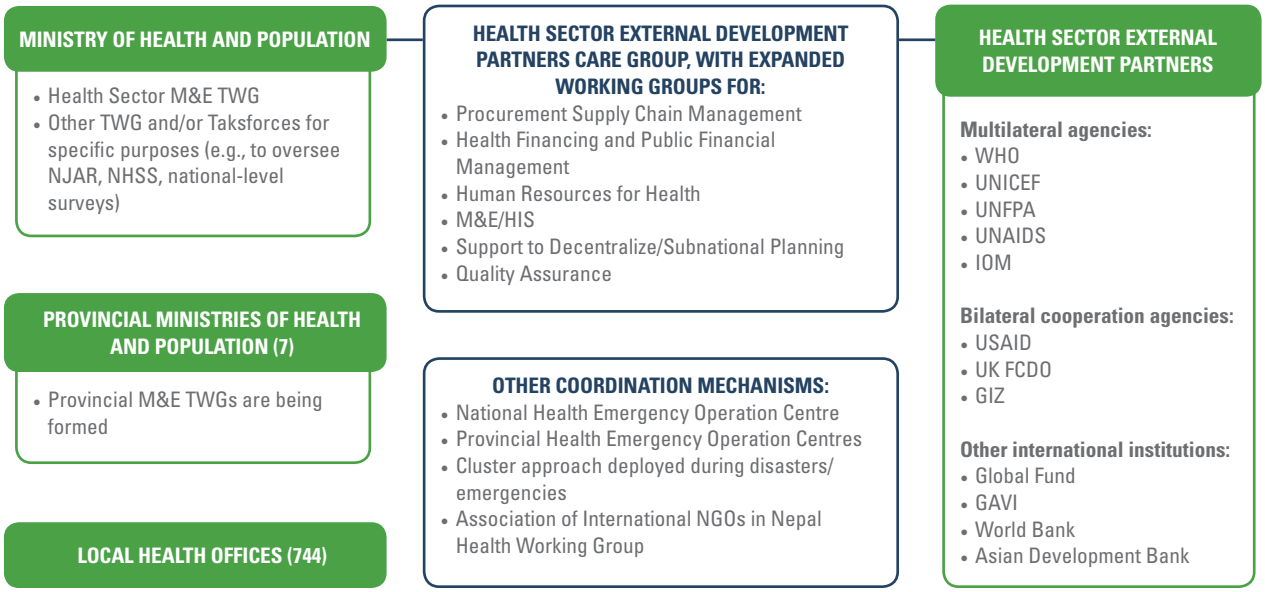
4.3 The HDC in Nepal: history, progress and priorities

The MoHP in Nepal has been engaging with the HDC since September 2020, and concurrently, with the SDG 3 Global Action Plan (GAP) efforts spearheaded by WHO. Since then, it has been agreed that SDG 3 GAP and HDC efforts around data and digital health will be merged, so as not to duplicate efforts. In 2021, the MoHP presented its priorities on 'Data and Digital Priorities for Measurement and Addressing Equity' with HDC and SDG 3 GAP. The MoHP's stated priorities reflect the gaps already identified by application of the SCORE framework and MEASURE Evaluation framework:

- Priority 1: RHIS strengthening for SDG and universal health coverage (UHC) data reporting with enhanced and focused interventions for Hospital Information System improvements in digital environment; standardization (using ICD), medical certification of cause of death (MCCD), outpatient department (OPD) service recording in prioritized 22 hospitals at federal level).
- Priority 2: Establishment of learning centres and capacity strengthening on RHIS (ICD, MCCD, DHIS, EHR, EMR, etc.) in collaboration with academia, targeting capacity-building of both public and private sectors.
- Priority 3: Strengthening HIS and M&E coordination mechanisms at provincial levels.

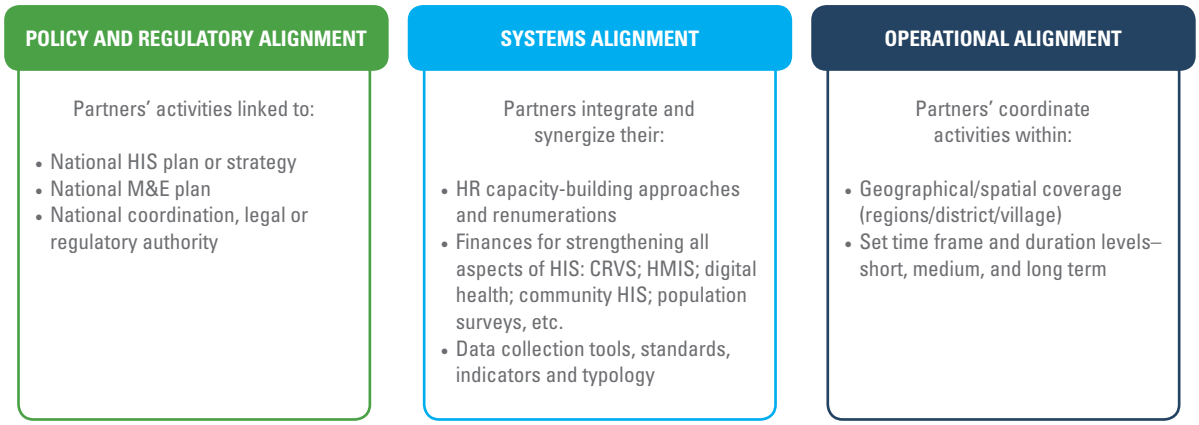
Progress and actions taken towards these priorities appear to be in the planning/inception stage. For Priority 1, EHR and EMR systems are currently being piloted in two hospitals, Bayalpata Hospital and Charikot Hospital, by a local NGO, Nyaya Health Nepal.

Figure 2. Health sector partners and stakeholders working on HIS in Bangladesh



GAVI, Gavi, the Vaccine Alliance; GIZ, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH; Global Fund, The Global Fund to Fight AIDS, Tuberculosis and Malaria; HIS, health information system; IOM, Institute of Medicine; M&E, monitoring and evaluation; NGO, non-governmental organization; NJAR, National Joint Annual Review; NHSS, Nepal Health Sector Strategy; TWG, Technical Working Group; UK FCDO, United Kingdom Foreign, Commonwealth & Development Office; UNAIDS, Joint United Nations Programme on HIV/AIDS; UNFPA, United Nations Population Fund; UNICEF, United Nations Children's Fund; USAID, United States Agency for International Development; WHO, World Health Organization

Figure 3: Conceptual framework of alignment



Regarding Priority 2, which aims to establish learning centres and build capacity on RHIS, the MoHP has approached seven academic institutions/federal hospitals to gauge their interest in collaborating with the GoN on these endeavours. A concept note has been drafted to facilitate engagement with interested institutions.

Finally, actions are also ongoing on Priority 3 – strengthening coordination mechanisms at provincial level. According to WHO, provincial-level M&E TWGs are being formed. To date, six provincial MoHPs have committed, and the next orientation was planned to take place by November 2021.

4.4 Alignment of partner technical and financial investments in Nepal

Back in 2005 and 2008, development stakeholders committed to improve the quality and effectiveness of aid and its impact on countries' development. This was reflected in the Paris Declaration (2005), a road map towards better aid effectiveness, formulated around five principles: Ownership, Alignment, Harmonization, Results, and Mutual Accountability. The Paris Declaration was further strengthened with the Accra Agenda for Action (2008), which took stock of progress made since the Paris Declaration was made, and proposed to focus on the following main areas for improvement: Ownership, Inclusive partnerships, Delivering results, and Capacity development.

Reflecting the principles of ownership, alignment and inclusive partnerships in the Paris Declaration and the Accra Agenda for Action, a conceptual framework of alignment (Figure 3) was developed that situated alignment by partners within a context of nationally owned HIS plans, strategies and priorities. Partner financial and technical investments in Nepal's HIS were analysed according to this framework, using the GoN's priorities for HIS as a starting point, as detailed in section 4.3.

4.4.1 Policy and regulatory alignment

Alignment in the policy and regulatory environment includes whether there is a national plan or strategy on HIS that details a common vision and plans for progress, and how aligned partners are to this plan. Further, it includes assessing whether there are formalized government-led coordination mechanisms, and whether partners are represented or participate in these coordination mechanisms. It also includes assessing whether partners' M&E efforts are aligned to a national-level HIS M&E framework, and if indicators and reporting are harmonized across partners, donors and national reporting agencies.

4.4.2 Systems alignment

Systems alignment refers to the harmonization of partners' technical and financial resources – that is, how partners' technical and financial resources are used in support of identified national priorities. Harmonization of technical resources might include, for example, providing technical expertise or guidance in development of policies and guidelines, and capacity-building for government personnel and field staff. Harmonization of financial resources speaks to how partners' financial resources

Table 3A.

I. Policy and regulatory alignment	
Existence of a national strategic plan and alignment of partners around this	There is an overarching national strategic plan, the current one being the Nepal Health Sector Strategy (NHSS) 2015–2020, which has been extended through July 2022 due to the coronavirus disease 2019 (COVID-19) pandemic. Other relevant national strategies include the National IHIMS Roadmap (2020–2030), the National e-Health Strategy (2017), and the National HIV Strategic Plan 2016–2021. At the federal level, partners are highly aligned to the national strategic plan, as the plan is usually developed jointly between the MoHP and EDPs, with HIS priorities identified through the M&E/HIS TWG based on joint consultation and analysis – for example, through the Joint Annual Review process. *"Any new concepts/initiatives are shared with the government counterparts and the development partners in the MoHP led M&E TWG. There is a M&E/HIS team [TWG] among the health sector donors, the team share the information to wider health donors' forum to ensure coordination. Donors are also in the MoHP led TWG."* – United Kingdom Foreign, Commonwealth & Development Office The existence of a SWAp approach and a pooled funding mechanism also means that there is a framework within which certain major donors are able to explicitly support government priorities and national ownership by funding the implementation of the NHSS through the MoHP.
Existence of government-led coordination mechanisms and the level of participation/representation by partners	At the federal level, government-led coordination mechanisms include: • Health Sector M&E Technical Working Group, led by the MoHP • Health EDP M&E/HIS TWG • TWGs and/or Taskforces formed by the MoHP for specific purposes, such as the preparation of the NJAR and NHSS, or to oversee national-level surveys such as the Nepal Health Facility Survey, Nepal Demographic and Health Survey [DHS], etc.) Since the start of the COVID-19 pandemic, EDP meetings have not been regularly convened in-person. They continue to be held virtually. The membership of the Health EDP TWG includes the main multilaterals working in Nepal (i.e., the United Nations agencies), bilateral coordination agencies and other major donors. International or local NGOs are not part of this group; NGOs coordinate through the Association of International NGOs in Nepal (AIN). Provincial-level coordination mechanisms are not as clearly defined. Stakeholders report that there is a loose group of partners who are trying to coordinate at the provincial level. The cluster system deployed during emergencies provides a de facto mechanism for coordination at this level.
Alignment of partners to the national HIS M&E framework	There is a national HIS M&E framework, 'Health Sector Monitoring and Evaluation in Federal Context' (in draft, 2018). Partners who support the GoN health sector programme through SWAp are naturally aligned to the national HIS M&E framework. All of the stakeholders interviewed indicated that their M&E work is aligned to the national HIS M&E framework.

Overall author assessment of progress on policy and regulatory alignment: Strong.

Table 3B.

II. Systems alignment	
Harmonization of technical resources	Most of the main EDPs provide technical assistance on areas in which they have specific expertise. For example, WHO provides technical advice and guidance on policies, data quality and capacity-building. GIZ provides technical assistance on DHIS2, support with troubleshooting, and is currently working to promote and develop a platform for interoperability. UK FCDO, in line with its commitment to improving efficiency and accountability, provides technical assistance to enable effective use of financial aid, to enhance the government's HIS capacity, and to promote data use for decision-making. UNFPA, with its mandate and strengths on population data, provides technical assistance in the form of capacity development and support to the analysis and dissemination of census data. The overarching framework that guides technical investments by EDPs remains the NHSS. To support the decentralization process, the MoHP is increasingly channeling support to provincial and local levels, with the support of EDPs. It is implementing a local-level approach in seven local government areas.
Harmonization of financial resources	Nepal adopted a SWAp approach for health financing in 2004. The Health Systems Funding Platform was initiated in 2004 to channel funds from major donors into nationally owned priorities. In 2010, a Joint Financing Arrangement (JFA) for health was introduced, enabling major donors to channel their funding in support of the NHSS through a common pool and through one common aid management system. This allowed their financial support to be aligned with national budget and planning cycles. Further, the World Bank, UK FCDO (then the Department for International Development [DFID]) and GAVI agreed to pool their funds in support of the national health plan. For the current NHSS, the World Bank has allocated all its financing through a Program-for-Results tool, which disburses funding against Disbursement Linked Results. An Aid Management Platform (AMP) was established in the Ministry of Finance in 2010 to map support provided by development partners and monitor foreign aid flow in Nepal. The AMP is a web-based tool that provides a centralized hub of information about foreign aid in Nepal, facilitating easier planning, monitoring, coordination and reporting amongst donors and national line ministries.

Overall author assessment of system alignment: Moderate, at federal level. There is a lack of evidence for systems alignment at local and provincial levels.

Table 3C.

III. Operational alignment	
Communications and information flow	Aside from the national-level coordination mechanisms, WHO (and perhaps other partners) are able to provide regular programme updates and reporting to government counterparts through regular meetings with the MoHP. Some partners report using both routine and non-routine HMIS data for programme planning, monitoring and reporting purposes – for example, RHIS data are used to plan resource allocation for immunization programmes, to monitor status of key health facilities and to monitor service targets. However, it is unclear how information generated from the RHIS is used by partners to coordinate services and activities with each other.
Coordination of activities between partners	Partners are also able to coordinate with each other through the national-level coordination mechanisms. It was also reported that coordination of operations and activities occurs at provincial and local levels through the cluster system, which is typically activated in emergencies, but seems to have emerged as a de facto coordination mechanism where there would otherwise be none.

Overall author assessment of operational alignment: Moderate. Communication flows at federal level are strong, but there is an absence of defined and regular coordination mechanisms at local and provincial levels. In addition, evidence is weak on how data are being used for decision-making at all levels.

are aligned or harmonized towards the achievement of common goals – in this case, Nepal's priorities on strengthening HIS.

Systems alignment also includes alignment of programme systems, such as ensuring that capacity-building approaches and remuneration of health personnel working on data systems are harmonized.

4.4.3 Operational alignment

Operational alignment includes how partners communicate with each other, and also with local, provincial and central health authorities. This may include formal and informal coordination mechanisms, as well as how information and data are shared and used between partners. Partners also align operationally by coordinating their activities – for example, NGOs working in the same community may coordinate to ensure that the services provided are harmonized, cases are referred between providers according to need, and that there is no overlap in time and space.

4.4.4 Enabling factors for partner alignment

Some of the enabling factors for partner alignment include:

(i) Existence of sectoral frameworks that channel technical and financial assistance in support of national priorities (e.g., SWAp, the JFA for health), as well as other aid management tools that promote alignment and harmonization

Nepal adopted a SWAp for health financing in 2004. The Health Systems Funding Platform was initiated in 2004 to channel funds from major donors into nationally owned priorities. Later, in 2010, a JFA for health was introduced, enabling donors such as GAVI, DFID (now replaced by the UK FCDO), the World Bank, USAID, UNFPA and UNICEF to channel their funding in support of the NHSS through a common pool and through one common aid management system.[20] This allowed their financial support to be aligned with national budget and planning cycles. Further, the World Bank, DFID and GAVI agreed to pool their funds in support of the national health plan. The JFA sets out "harmonized procedures for performance reviews, financial management, and coordinating planning, monitoring and review exercises".[21] Partners that are not part of the JFA provide their support as 'off-budget support'.

The SWAp approach encourages alignment amongst those partners engaged in it – for example, there is a Joint Consultative Meeting that takes place twice a year between the MoHP and development partners under SWAp.

To map support from development partners and monitor flow of foreign aid into the country, the AMP was established in 2010 in the Ministry of Finance. This web-based tool helps to facilitate planning, monitoring, coordination and reporting amongst national line ministries and donors by serving as a centralized hub for information about foreign aid. The AMP has been highlighted as a significant resource and tool to improve aid management, alignment and harmonization of foreign aid between development partners and the GoN.[22] While the AMP is not publicly accessible, a report is disseminated annually during the Government Budget speech.

(ii) Strong government-led coordination mechanisms at the federal level

There are a number of strong and well-functioning coordination mechanisms at the federal level, chief of which are:

- Health Sector M&E TWG, led by the MoHP
- Health EDP M&E TWG
- IHIMS TWG

TWGs and/or Taskforces formed by the MoHP for specific purposes such as the preparation of the NJAR and NHSS, or to oversee national-level surveys such as the Nepal Health Facility Survey, Nepal DHS, etc.

The MoHP, EDPs and other development partners come together to discuss and review national health strategies and priorities on a regular basis, such as during the NJAR. Feedback and participation in the policy development process is solicited through bilateral consultations with development partners as well as group discussions at these forums.

> *"To ensure we work with national priorities, we… involve stakeholders to develop funding proposals, identify priorities, list down activities from everyone's side, including key populations, so as to identify targets, activities, programmes, interventions."*
> – Partner interview

The Health Sector EDPs are supposed to meet every two weeks, and the chair and co-chair positions are rotated annually. However, the COVID-19 pandemic has interrupted the frequency of these meetings. It was reported that the last formal in-person meeting was held in February 2020. The meetings have shifted virtually, although it is unknown whether the frequency of meetings remains the same. According to a partner:

> *"The TWG meetings have not been called for a long time now. We couldn't convene because of COVID."*

Partners also reflected on the usefulness of the Health Sector EDPs TWG as a forum for discussing and reviewing national priorities and as a key mechanism for supporting better alignment. Some comments were:

> *"[The TWG needs to undertake] more strategic discussions, e.g., on NCDs (non-communicable diseases)."*

> *"The TWG needs to get into detail around the actions."*

(iii) Trust, clear common goals and ease of communication in a government-led coordination group

Stakeholders expressed that partners generally work together with the Government and are able to communicate with each other and with the GoN. There is a sense of agreement around what works, and what requires more work, specifically relating to HIS. The GoN is able to take ownership and exercise leadership in moving towards health sector goals, with support from partners.

4.4.5 Constraining factors for partner alignment

Some of the constraining factors for partner alignment include:

(i) Decentralized government with uneven coordination or alignment at provincial and local levels

As already noted, there are a number of strong and government-led coordination mechanisms at the federal level. However, the organizations and constituencies participating in these coordination mechanisms are usually the large multilateral development organizations, or bilateral partners. With the decentralization processes happening in Nepal, there is a lack of evidence on how provincial- and local-level health actors align and harmonize their actions. Stakeholders report that some coordination happens at the provincial level, through the Provincial National Health Emergency Operation Centres. These mechanisms were activated during the earthquake in Nepal in 2015 as an emergency coordination mechanism for the health sector, and still serves as a forum for information exchange and coordination.

The MoHP has stated that one of their priorities for SDG 3 GAP and HDC efforts in the country is to strengthen HIS and M&E coordination mechanisms at the provincial level. WHO is supporting these efforts, led by the MoHP. Partners working at the provincial level include USAID, DFID/UK FCDO, GIZ, UNFPA and UNICEF, as well as other international NGOs, and it is likely that these partners will also be part of any provincial-level coordination mechanisms.

(ii) Lack of civil society representation in the federal level TWGs and other coordination mechanisms; lack of a framework to engage with NGOs/CSOs

The level of civil society representation in federal and provincial-level coordination mechanisms appears to be

weak. AIN liaises with the MoHP through the Health Coordination Division and has a sub-group of health agencies that meet regularly. They present during the federal health sector review meeting, only once a year. Notably, the Health Sector EDPs TWG does not include as part of its membership any of the major international or local NGOs. Given that there are many NGOs operating in Nepal (there are over 50 current members of the AIN Health Working Group, representing over 30 different organizations), this seems to be a major omission.

While NGO-run health facilities are supposed to provide data to the closest health post within the municipality wards, it is unclear what proportion of NGOs or CSOs that provide health services generate and report data and information to the HIS, particularly at community and local levels. The level of data quality is also unclear. These organizations are frequently key to accessing particular segments of the population, such as migrants and other vulnerable groups, and the inclusion of data from these groups would provide critical information on health trends for rural and vulnerable populations.

It is also unclear how many of these NGOs are funded by EDPs, as EDP-funded NGOs would likely have their reporting captured by EDP reporting to the HIS.

(iii) Partners' planning and M&E mechanisms are still separate; reporting of indicators is not fully harmonized

EDPs – aside from those providing pooled funding to the MoHP – are not always aligned with national planning cycles. This is partly due to how the international aid architecture is structured and governance structures specific to some partners; for example, international health institutions such as GAVI and The Global Fund are answerable to their own boards and therefore cannot necessarily align with national planning cycles. Bilateral development partners, such as USAID, are accountable to their own governments and their own national budget cycles for disbursement of development aid. This aid is aligned with recipient government priorities only to the extent that the funding supports recipient country priorities.

In a similar vein, the health EDPs have different approaches to M&E, despite their alignment and harmonization around NHSS interventions. Different partners have different levels of presence in the country (e.g., The Global Fund does not have a presence in the country as it disburses funding through its implementing partners), and each partner has a different M&E structure. It is not clear how M&E and data collection activities are harmonized – for example, through joint M&E missions, or by avoiding duplication of reporting. While reporting on health sector indicators seems to be generally aligned with the HIS and NHSS results framework indicators, it was reported that some donors request programme-specific indicators that may not be routinely reported through the HIS, and thus increase the reporting burden on programme staff. This is particularly true of donors funding disease-specific programmes.

Finally, it was also reported that the level of capacity of implementing partners in collecting and reporting data is not uniformly strong. Some local NGOs, for instance, may require additional support and training in using MoHP registers or DHIS2 systems.

(iv) Lack of oversight/visibility over private health providers and the arrangements made for engagement/cooperation with the private sector

As previously noted, private health facilities account for a not insignificant proportion of service delivery facilities in the country. It is unclear what formal arrangements exist for cooperation/engagement with these private sector providers to support and encourage reporting to the national HIS. The 2020 NJAR report states that "there is yet to be clarity on the effective engagement of EDPs and other stakeholders, such as the private sector, NGOs/community-based organizations (CBOs) and cooperatives, for provincial and local levels."[23]

4.5 Stakeholder priorities for strengthening HIS and health data systems in Nepal

In addition to questions on alignment, stakeholders/partners participating in interviews for this assessment were asked to identify their main priorities for HIS and health data work in Nepal, as well as for their views on the main issues/challenges for HIS in Nepal. These priorities are presented here and may represent potential issues for future HDC engagement and advocacy in Nepal.
The priorities identified largely fell under two main themes, with an additional theme underlying many of the responses:

(i) Data quality and use of data

Almost all of the partners included in this assessment pointed to the need to continue supporting better use of

data for decision-making so that decisions around service delivery and programme interventions can be based on evidence. Partners that are involved in data collection and reporting at various levels questioned whether data collection was being reported and used appropriately. This points to the need for more evidence around information flows, reporting and decision-making in the health sector in Nepal. Some comments from partners include:

> *"Does the data collected really serve [for making] major decisions? Is the data being used? SDG targets – are they being met?"*
> – Partner interview

> *"Our current and future priority is to support the Government of Nepal, Ministry of Health and Population to use data for decision-making. It includes preparation and implementation of a comprehensive road map for strengthening of integrated health information management system which primarily include digitization of recording and reporting; activation and strengthening of the current routine health information systems; and standardization of the new MISs [management information systems]; and building interoperability among the systems leveraging the modern ICT [information and communications technology]. We hope it will help improve access to quality data leading to the practice of evidence-based decision-making at all spheres of government."*
> – UK FCDO, response to email questionnaire

(ii) Strengthening RHIS, including integrating vertical systems into the RHIS and ensuring interoperability

Partners also pointed out that the RHIS remains the cornerstone of the HIS and continued investments are necessary to ensure that it remains strong and robust. WHO and the Nepal Health Sector Support Programme (NHSSP) are currently supporting an update of the integrated HMIS road map to strengthen the RHIS.[24]

According to partners interviewed, some donors – particularly donors funding disease-specific programmes – do still require reporting on specific indicators that are not generated as part of the RHIS, and this presents an additional reporting burden for field personnel. A solution to this could be to develop an interface for these programmes/information systems to feed into the HMIS.[25] Some comments from partners include:

> *"Routine health information systems are still important. COVID has demonstrated that digitalization is important, but a number of new software solutions have also [since] been created to address the pandemic. How to integrate [those] into existing systems and how to maintain them? How to make sure that existing surveillance systems are not weakened?"*

> *"[The] Global Fund should be investing in maintaining DHIS2, instead of maintaining all the vertical programmes."*

> *"Stop developing multiple parallel reporting and recording systems by donors for the same programme. Ultimately [we] should be reporting on global indicators. Develop one integrated reporting and recording system for all, so that [human resources] just have to work on one system."*

In order to leverage local resources and build local capacity to ensure sustainability, it was suggested that the MoHP explore partnerships/cooperation with local and regional academic institutions. For example, the Asia eHealth Information Network (AeHIN) could serve as a regional resource and forum for work on interoperability and ongoing technical support on e-health. There are also other academic institutions in Nepal that might be a source of technical expertise to support development of guidelines, troubleshooting for EHR systems, and training of field health personnel.

(iii) Ensuring that the infrastructure and supporting environment are fit-for-purpose

Finally, more than one partner pointed out that in the Nepali context, the infrastructure and supporting environment are still important considerations for the strength of HIS and data systems in general. In rural areas, internet connections are slow and unstable, thus making the use of EHR systems frustrating for field health personnel. Training and retention of qualified field health personnel and training of health workers in EHR and reporting remain an ongoing challenge. Both the GoN as well as donors should continue investments in this area. As one partner put it:

> *"Digitalization is not the issue, it is the manpower issue. Need manpower to do it, need incentives to do it."*

5. Recommendations

Recommendations for better stakeholder alignment to strengthen the HIS in Nepal include the following:

Stakeholders should develop policies or frameworks to support better use of data for decision-making, and promote better information flows between partners at all levels – for example, a data sharing policy and data use strategy.

Partners should work together with government counterparts to strengthen coordination mechanisms at local and provincial levels, and provide a framework for engagement of partners through these mechanisms.

Government line agencies, in coordination with partners, should address gaps in representation and engagement by civil society groups in coordination mechanisms at national, provincial and local levels (including international NGOs, local NGOs and CSOs providing health services or engaged in health promotion activities).

To improve private sector reporting into the RHIS, federal and subnational governments should prioritize private sector engagements through existing HIS governance frameworks, and include private sector representatives in HIS coordination meetings.

Development partners should invest in harmonizing M&E activities – for example, align financial resources to support M&E and organize joint M&E missions.

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Annexes

Annex 1. Health sector partners and stakeholders in Nepal

Stakeholders	Role	Coordination mechanisms	Priorities for health information system (HIS)	Technical and financial investments for HIS
Ministry of Health and Population	Responsible for overall policy formulation, planning, organization and coordination of the health sector at national, provincial, district and community levels.	Health Sector Development Partners Group (federal level) and all associated working groups. Also hosts the Ministry of Health and Population (MoHP) Technical Working Group (TWG).	1. Routine health information system (RHIS) strengthening for Sustainable Development Goal (SDG) and universal health coverage (UHC) data reporting with enhanced and focused interventions for Hospital Information System improvements in digital environment; standardization (using the International Classification of Diseases [ICD]), medical certification of cause of death (MCCD), outpatient department (OPD) service recording in prioritized 22 hospitals at federal level). 2. Establishment of learning centres and capacity strengthening on RHIS (ICD, MCCD, District Health Information Software [DHIS2], electronic health records [EHR], electronic medical records [EMR], etc.) in collaboration with academia, targeting capacity-building of both public and private sectors. 3. Strengthening HIS and M&E coordination mechanisms at provincial levels	
Central Bureau of Statistics	Responsible for the collection, consolidation, processing, analysis, publication and dissemination of statistics in Nepal, including the censuses of Nepal.		Information not available.	
National Planning Commission of Nepal	The advisory body for formulating development plans and policies of the country under the directives of the National Development Council.		Information not available.	
Ministry of Finance			Information not available.	
UNICEF	Multilateral development partner.	Health Sector Development Partners Group, with representation on all of the expanded working groups (Procurement Supply Chain Management; Health Financing and Public Financial Management; Human Resources for Health; HIS/M&E; Support to Decentralized/Subnational Planning; Quality Assurance and Improvement in Health).	Excerpt from the Country Programme Action Plan (CPAP) 2018–2022: 3.7.5. The operationalization of the federal structure for health will be supported by strengthening local capacity for planning, budgeting and tracking health system performance and expenditure to ensure the delivery of quality maternal, newborn and child health services. The Health Management Information System (HMIS) and the implementation of the National e-Health Strategy (2017) will be supported through new information technologies (e.g. SMS-based RapidPro applications).	UNICEF has supported the roll-out of the Dashboard System, which was designed to visually present the real-time health spending data and service delivery data to enable the local governments to monitor and track the fiscal transfer against the budget and expenditure and its implication on utilization of quality Basic Healthcare Service (BHS) delivery. Also provides technical support for HIS through capacity-building.

Stakeholders	Role	Coordination mechanisms	Priorities for health information system (HIS)	Technical and financial investments for HIS
World Health Organization (WHO)	Multilateral development partner.	Health Sector Development Partners Group, with representation on all of the expanded working groups.	Excerpt from the WHO Country Cooperation Strategy (CCS) 2018–2022: Strategy Priority 1, focus area 1.2: National oversight and policy development. (9) Provide technical support to strengthen Health Management Information Systems in the federated context for reporting, in particular on UHC and the health-related SDGs. (10) Expand quality and coverage of birth and mortality statistics and use of ICD-10 in hospitals in line with the mortality statistics improvement plan. (11) Provide technical support to develop national eHealth architecture, interoperability framework and standards. Leverage use of information and communications technology (ICT) to advance implementation of eHealth strategy. (15) Provide basic technical support to newly established provincial Ministries of Health. (16) Ensure effective coordination of partner support to avoid fragmentation and identify gaps as federalisation is evolving.	WHO has invested around US$5.56 million for HIS strengthening in Nepal in the last three years between 2016 and 2018. Nearly 65 per cent of that amount was spent for immunization-preventable disease surveillance, including establishing electronic immunization records. Around 55 per cent of the cost goes towards supporting staff salaries required to maintain the surveillance system. WHO is also currently supporting ICD-10 training. WHO provides technical assistance on issues ranging from disease surveillance, HMIS, to population surveys. Specific technical assistance includes technical advice and guidance on policies, data quality and capacity-building.
United Nations Population Fund (UNFPA)	Multilateral development partner.	Health Sector Development Partners Group, with representation on some of the expanded working groups.	Primarily civil registration and vital statistics (CRVS). Excerpt from the UNFPA Country Programme Document for Nepal, 2018–2022: Outcome 4. Population dynamics ($5.4m): Output 1: High-quality disaggregated data available for planning and monitoring of development interventions. A cornerstone of the programme will be support to the 2021 census, including capacity development for the Central Bureau of Statistics using appropriate electronic technologies, and support for the analysis and dissemination of census data. Further support to national academic/research institutions to generate up-to-date and adequately disaggregated data for the national and subnational level through in- depth census analysis sociodemographic surveys and civil registration and vital statistics data, taking into account gender, age, geography, caste/ethnicity and vulnerability, will facilitate analysis and use of vital statistics for evidence-based local planning and decision-making. UNFPA will further support national actors to track the achievement of the Sustainable Development Goals and monitor development interventions by supporting research and the capacity of relevant institutions to undertake population projections and demographic analysis, small area estimations and quantitative and qualitative research on culturally sensitive sexual and reproductive health and reproductive rights issues and harmful practices including child marriage, gender-based violence and gender-biased sex selection; and by building subnational capacity to integrate these issues in development programming. Finally, the programme will enhance transparency and accountability by developing electronic/web-based platforms for public access to sociodemographic and humanitarian data.	UNFPA provides technical assistance in the form of capacity development and support to the analysis and dissemination of census data.
Joint United Nations on HIV/AIDS (UNAIDS)	Multilateral development partner.	Health Sector Development Partners Group, with representation on some of the expanded working groups.	Unknown.	Unknown.

Stakeholders	Role	Coordination mechanisms	Priorities for health information system (HIS)	Technical and financial investments for HIS
International Organization for Migration	Multilateral development partner.	Health Sector Development Partners Group, with representation on some of the expanded working groups.	Migrant health – including disease surveillance, population mobility and public health risk mapping across several municipalities – conducted as part of the national COVID-19 Response and Preparedness Plan.	Unknown.
United States Agency for International Development (USAID)	Bilateral cooperation.	Health Sector Development Partners Working Group, with representation on all of the expanded working groups.	Extract from the Country Development Cooperation Strategy (CDCS) 2020–2025): IR 3.1: "Quality of health and education services improved" will address persisting quality gaps in health and education. … Additionally, effective systems need to measure and use data to learn and improve interventions. As subnational governments are newly responsible for delivering health and education services, USAID will work with the GoN [Government of Nepal] to strengthen health and education systems' governance to address gaps in leadership, policy planning and implementation, public financial management, monitoring and supervision, and the availability and distribution of required materials/resources/supplies to where they are needed. Similarly, USAID will ensure that appropriate human resources are in the right places and with the right skills, which are critical to delivering quality services. Lastly, USAID will promote increased use of evidence-based interventions that reflect best practices, international standards, or innovative methods across the entirety of coverage areas to ensure that health and education outcomes are improved.	USAID is currently supporting the scale-up of an electronic Logistics Management Information System (LMIS).
British Embassy (United Nations Foreign, Commonwealth & Developoment Office [FCDO])	Bilateral cooperation.	Health Sector Development Partners Working Group, with representation on all of the expanded working groups.	Nepal Health Sector Support Programme (NHSSP) <https://nhssp.org.np/about.html> is funded by aid from the Government of the United Kingdom of Great Britain and Northern Ireland, and is being implemented from April 2017 to December 2022. Based on the website, it is designed to support the goals of the Nepal Health Sector Support (NHSS) and is focused on enhancing the capacity of the MoHP to build a resilient health system to provide quality health services leaving no one behind. …The programme has extended its support to subnational government to strengthen the health system at local level. The programme is managed by three core partners Options Consultancy Services, HERD International, and Oxford Policy Management. …The programme has five thematic areas that will deliver the projected results and deliverables, working closely with all spheres of government, aligned with the mandates of each sphere and with an increasing level of subnational TA [technical assistance]: The programme consists of five work streams: Leadership and Governance (L&G) Coverage and Quality (C&Q) Data for Decision Making (D4D) – …[For] Nepal the challenge goes beyond improving the quality and timeliness of data. There are now the added dimensions of ensuring that different data sets are inter-linked and used as an integrated system rather than as disparate sources of information; and that new duty-bearers with little or no experience of annual work planning and budgeting are supported to understand and use the data to make informed, appropriate and transparent decisions for which they can be held accountable. NHSSP3 [Nepal Health Sector Support Programme 3] seeks to ensure that decision-makers across all spheres have access to high-quality data to make evidence-based decisions.	According to an email response from the FCDO, the UK-funded NHSSP3 "provides both financial aid to GoN/MoHP and technical assistance to federal MoHP, three provinces and 39 local governments to enhance the government's HIS capacity and improve accountability by using data for decision-making. The financial aid to the GoN/MoHP3 helps to implement the national plan on HIS." Technical assistance is provided at national and subnational levels to enable effective use of the financial aid received, to enhance the GoN's HIS capacity, and to "improve accountability by using data for decision-making". The UK FCDO has also funded the NHSSP to establish a Technical Assistance Response Fund. This facilitates the provision of technical assistance to the MoHP on a needs basis, complementing the longer-term and planned technical assistance and financial support provided through the mainstream NHSSP, by other development partners.

Stakeholders	Role	Coordination mechanisms	Priorities for health information system (HIS)	Technical and financial investments for HIS
Ministry of Health and Population	Responsible for overall policy formulation, planning, organization and coordination of the health sector at national, provincial, district and community levels.	Health Sector Development Partners Group (federal level) and all associated working groups. Also hosts the Ministry of Health and Population (MoHP) Technical Working Group (TWG).	1. Routine health information system (RHIS) strengthening for Sustainable Development Goal (SDG) and universal health coverage (UHC) data reporting with enhanced and focused interventions for Hospital Information System improvements in digital environment; standardization (using the International Classification of Diseases [ICD]), medical certification of cause of death (MCCD), outpatient department (OPD) service recording in prioritized 22 hospitals at federal level). 2. Establishment of learning centres and capacity strengthening on RHIS (ICD, MCCD, District Health Information Software [DHIS2], electronic health records [EHR], electronic medical records [EMR], etc.) in collaboration with academia, targeting capacity-building of both public and private sectors. 3. Strengthening HIS and M&E coordination mechanisms at provincial levels	
Central Bureau of Statistics	Responsible for the collection, consolidation, processing, analysis, publication and dissemination of statistics in Nepal, including the censuses of Nepal.		Information not available.	
National Planning Commission of Nepal	The advisory body for formulating development plans and policies of the country under the directives of the National Development Council.		Information not available.	
Ministry of Finance			Information not available.	

Stakeholders	Role	Coordination mechanisms	Priorities for health information system (HIS)	Technical and financial investments for HIS
World Bank (WB)	International financial institution	Health Sector Development Partners Group, with representation on some of the expanded working groups.	Extract from Country Partnership Framework (CPF), 2019–2023: Focuses on three areas of engagement: (i) strengthening public institutions for economic management, service delivery and public investment; (ii) promoting private sector-led jobs and growth; and (iii) enhancing inclusion for the poor, vulnerable, and marginalized groups, with greater resilience against climate change, natural disasters, and other exogenous shocks. Objective 1.2. Strengthened institutions for public sector management and service delivery The WB [World Bank] will support strengthening systems and capacities of public institutions for continued service delivery in education, health, social protection, and local infrastructure in rural and urban areas. Focus Area 3: Inclusion and Resilience 39. The WBG [World Bank Group] will seek to address spatial and horizontal inequities in human development outcomes, and people's vulnerabilities to climate change, natural disasters, and health shocks.	Supports the NHSS. Level of financial investment in the HIS is unknown.
The Global Fund to Fight AIDS, Tuberculosis and Malaria (Global Fund)	International financing and partnership organization.	Health Sector Development Partners Group	Unknown.	Funding is disbursed through implementing partners in-country. Specific level of investments relating to HIS are unknown, although GIZ reports that they received some funds from the Global Fund to align/integrate vertical management information systems for the three diseases so that datasets can be integrated into the HIS.
Save the Children	International NGO			Save the Children provides technical assistance in the form of capacity-building, training of health workers on data collection, and developing guidelines, manuals and user protocols.
Nyaya Health Nepal	Local NGO		Nepal EHR; home-based primary care through community health workers in certain municipalities; support for hospital-based secondary and tertiary care.	Currently piloting EHR and EMR systems in two hospitals – Bayalpata Hospital and Charikot Hospital.
Nepal Public Health Research and Development Center	Local NGO		Unknown.	Unknown.
Nepal Health Society	Local NGO		Unknown.	Unknown.
Asia eHealth Information Network (AeHIN)	AeHIN functions as a "shadow informal digital health network". It supports government-to-government relations, and relationships with multilaterals such as the Asian Development Bank and WHO.	AeHIN does not participate in formal coordination mechanisms. Contact or support is via ad-hoc emails. Annual meetings are organized with ministries of health and development partners.	AeHIN structures its priorities according to its Mind the GAPS model – Governance, Architecture, Programme Management, Standards.	AeHIN is not currently operating in Nepal.

Stakeholders	Role	Coordination mechanisms	Priorities for health information system (HIS)	Technical and financial investments for HIS
Institute of Medicine (IOM)	Academic and training institution	N/A	Based on its website, the Institute of Medicine (IOM) is the main organization responsible for training health professionals in Nepal. Its seven campuses and 16 affiliated campuses provide more than 25 courses ranging from proficiency certificate level to postgraduate degrees in medicine, public health, paramedics, nursing and traditional medicine. The IoM also plays an important role in medical research."	Unknown.

Annex 2. Stakeholder interview framework for development partners

HEALTH DATA COLLABORATIVE

Assessing alignment of partner technical and financial investments towards strengthening health information systems

Country stakeholder interviews, October – December 2021

Health Data Collaborative is aiming to understand the status of partner technical and financial investments in Nepal, particularly in terms of their alignment to national priorities and strengthening country Health Information Systems (HIS). To that end, a series of questions have been developed, to guide stakeholder conversations and information gathering.

Setting the stage:

- What activities are you/your organization currently supporting/implementing to strengthen HIS in Nepal?
- How were these activities developed?

Conceptual areas of alignment	Components of alignment	Area of assessment	Research question	Probe
Policy and regulatory environment	**National strategic plan and government-led coordination mechanisms**	1. Extent of alignment by partners to the national HIS strategic plan	1.1 Does your organization have a strategy or a plan guiding your work on HIS and health data?	1.1.1 Please elaborate on those strategies or provide documentation, if preferred.
			1.2 Are you aware of national objectives/ strategic plan on HIS? Are your priorities and/or activities on HIS linked to these national and/or subnational strategic plans?	1.2.1 If yes: Could you please explain or elaborate how your priorities are linked? (open-ended question) If no: Why not?
			1.3 Did your organization participate in the design and/or validation of the national strategic plans on HIS?	1.3.1 If yes: Please provide further details (open-ended question).

Conceptual areas of alignment	Components of alignment	Area of assessment	Research question	Probe
Policy and regulatory environment	**National strategic plan and government-led coordination mechanisms**	2. Extent of participation by partners in national HIS coordination mechanisms	2.1 Is your organization represented in national HIS coordination mechanisms (e.g. working groups, stakeholder forums…)?	2.1.1 If yes, probes might include: • Which coordination mechanisms do you participate in? • How many meetings or exchanges have you participated in the past year? • Do you think that these coordination mechanisms are useful? How can they be strengthened further? *(open-ended questions)* If no, probes might include: • Are you aware of any coordination mechanisms or structures? • Have you been invited to participate? • What would motivate you/your organization to participate in such coordination mechanisms? *(open-ended questions)*
	Monitoring and evaluation mechanisms	3. Extent of alignment by partners with the national HIS M&E framework	*Introductory question: Are your activities on HIS strengthening being monitored?*	
			3.1 Does your organisation have an M&E plan or system covering HIS indicators?	3.1.1 Please provide details, or documentation if preferred.
			3.2 Are your M&E activities on HIS guided by the national HIS M&E framework?	3.2.1 If not, please could you explain how your M&E activities are planned? Is there another framework that guides your M&E activities?
			3.3 How is your M&E plan related or aligned to the national M&E framework (if there is one)?	3.3.1 Please provide us with a copy of your M&E plan, if possible. (Desk review of M&E plan to assess how the indicators are aligned to or based on national HIS indicators; also whether there are indicators that are not contained within the national M&E framework or national HIS indicators)
			3.4 What is your M&E reporting cycle (i.e. what frequency do you report your indicators on)? Is this aligned to the national M&E and HIS reporting cycle?	
		4. Use of health sector indicators and data	4.1 Does your organization use information obtained from the national/subnational HIS for decision-making purposes?	4.1.1 If yes: • Please provide examples of specific types of indicators/data/information that is used for decision-making purposes. • Is this data used routinely or occasionally? If no: • What data do you use to make decisions about activities and programmes?
Systems alignment	**Harmonization of technical resources**	5. Extent to which partners provide technical support for the national HIS	5.1 Does your organization provide any technical support for HIS, either at national or subnational level? *(This may also include capacity-building activities.)*	5.1.1 If yes: • Please provide details of that support. • Are these activities being coordinated with other partners, and/or through the national coordinating mechanisms?
	Harmonization of financial resources	6. Extent to which partners provide financial support for the national HIS	6.1 Does your organization provide funding or any kind of financial support for HIS, either at national or subnational level?	6.1.1 If yes, are these commitments informed by the specific priorities of the national HIS strategy/plan?
			6.2 What percentage of your annual budget is being spent on HIS or health data? *(This question may also be covered through desk review if preferred and if so does not need to be asked in interview.)*	
			6.2 *(future-looking)* Does your organization plan to provide funding or any kind of financial support for HIS at national or subnational level?	6.2.1 If yes, what HIS priorities/areas do you plan to commit this funding or financial support to?

Conceptual areas of alignment	Components of alignment	Area of assessment	Research question	Probe
Operational alignment	**Communi-cations and information flow**	7. Extent of timely and accurate communications between partners and the national HIS coordinating authority	7.1 Are there coordination mechanisms for partners or stakeholders working on HIS in Nepal to share information?	7.1.1 If yes: • Are HIS and health data part of these discussions? • How frequently do these discussions take place?
	Coordination of activities	8. Extent of coordination between health partners implementing activities	8.1 Does your organization coordinate its work with other partners at national or subnational level?	8.1.1 If yes: • Which partners do you coordinate with? • Please give examples of how you coordinate your work (e.g. targeting different communities to avoid overlap, etc., harmonizing data indicators). If not: • Why not? What are the main bottlenecks hampering coordination? What would encourage your organization to coordinate your work with other partners?
Other (open-ended)		9. Identification of strategic priorities	In your opinion, what are the three main issues that need to be addressed to ensure a stronger, more robust, and reliable HIS in Nepal?	
		10. Enabling & constraining factors of alignment	In your opinion, what are the main factors enabling or constraining alignment of partners' activities in HIS strengthening?	

Annex 3. Email questionnaire for health sector stakeholders

HEALTH DATA COLLABORATIVE

Assessing alignment of partner technical and financial investments towards strengthening health information systems

ealth Data Collaborative is aiming to understand the status of partner technical and financial investments in Nepal, particularly in terms of their alignment to national priorities and strengthening country Health Information Systems (HIS). The questions below have been simplified/extracted from a longer interview framework, and reflect the main research questions.

- What are your priorities or plans for your current and future work on HIS and health data?
- Do you engage with national partners on the development and validation of national strategic priorities on HIS?
- How do you coordinate your work on health and HIS with other partners and with national/subnational authorities? Please provide examples of any coordination mechanisms that your organization participates in.
- Are your organization's monitoring plan/activities on HIS aligned with the national HIS M&E framework (e.g. in terms of indicators, frequency of monitoring, etc.)? How does information flow from your organization's M&E activities to the subnational/national HIS?
- Do you use health indicators or data obtained from the HIS to make decisions about your activities/programmes? Please provide an example, if so.
- What type of support do you provide to the national HIS? (e.g. financial support, capacity-building support, technical support, etc.)
- In your opinion, what are the three main issues that need to be addressed to ensure a stronger, more robust, and reliable HIS in Nepal?

Annex 4. Topic guide for private sector and academic/research institutions

PRIVATE SECTOR STAKEHOLDERS

Unlike other actors in the development/health ecosystem, private sector institutions will not necessarily be 'aligned' with government objectives; that is not their role in a market economy. Private sector aims are different from development aims – their focus is usually on financial returns, although some may include the social and environmental impact of their business activities into their corporate reporting. They may not employ the same lens to project management and monitoring as development actors.

The focus of assessment should therefore be on private sector engagement – that is, to what extent the private sector is engaged in activities that support development aims and outcomes, or that create shared value for both the private sector and governments.

Some open-ended questions that can be included in the assessment are:

- What is your business/products? Who are your clients (can make this general if the firm does not wish to divulge details)?
- What financial or in-kind investments have you/your firm made in health information systems (HIS)/health data systems? What are your investment priorities on HIS/health data systems?
- Are you aware of the national HIS policy/strategy framework or plan?
- To what extent, and how, do you share relevant information with local and national health authorities? (this may be particularly relevant for private health-care providers)
- Do you collaborate with local and national health authorities to support community engagement (particularly in marginalized/rural communities)?
- Are there any ways you provide technical support to national HIS and health data systems, e.g., supporting local trainings?
- Do you have any relevant documentation for your projects in [country X] related to HIS and health data, that we could review?

ACADEMIC and RESEARCH INSTITUTIONS

Similar to private sector stakeholders, academic and research institutions are not necessarily 'aligned' to the government's development aims and objectives. Academic research and grants are incentivized by research and training objectives and funding priorities. In the context of this study, assessment should focus on the extent to which the work of academic and research institutions – either nationally or regionally – may inform development priorities (e.g. research work serves as part of the evidence base for government policy) or support government-led activities (e.g. partnering to deliver trainings).

Some questions that may be included in this assessment include:

- What are your institution's current research priorities? Is HIS or health data part of those priorities?
- What is the source(s) of funding for your research and training activities? (Sometimes governments fund research activities, in which case one could argue those are probably going to be aligned with government priorities.)
- Do you work with national health partners (inclusive of national/subnational health authorities, local implementing NGOs, etc.) on training or research activities related to HIS? If so, please provide details.
- Is there a mechanism to exchange information with your health partners? Please elaborate, if so.


HEALTH DATA
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