Technical Assessment

Nepal Quality Health Systems Program-for-Results (P177389)

The World Bank

Contents

Country context

1. **Nepal, officially the Federal Democratic Republic of Nepal, is a landlocked country in the South Asia Region with an estimated population of 29 million** (2021). Geographically, Nepal shares border with the Tibetan Autonomous Region of the People's Republic of China to the North and the Republic of India in the remaining directions. Administratively, Nepal transitioned into a federal structure after enactment of the new Constitution in 2015 and with local and provincial government elections in 2017 and 2018. This devolved administrative structure has one federal government, seven provincial governments, and 753 local levels. Nepal's gross national income stands at US$1230 per capita (in 2021)[1], and it is classified as a lower-middle income country by the World Bank and by the United Nations as a least developed country.

2. **Over the past decade, Nepal's economy has demonstrated impressive growth and resilience when faced with a wide variety of economic shocks.** Movement restrictions and the almost complete shut-down of tourism during the COVID-19 pandemic resulted in Nepal's first economic contraction in almost 40 years in FY2020 (-2.4 percent). A decisive vaccine roll-out and reopening of the borders have supported the economy's recovery, with growth inching up to 4.2 percent in FY2021 and accelerating further to 5.8 percent in FY2022**,** with industries and services expanding by 10.2 and 5.9 percent, respectively.

3. **Nepal has made remarkable progress in reducing poverty** from 46 percent in 1996 as one of the fastest reductions in South Asia. Nepal has set an ambitious target of reducing the absolute poverty rate from 18.7 percent in FY2019 to 4.9 percent by 2030 and eliminate by 2043. Multidimensional poverty is targeted for below 6 percent by 2030 and below 3 percent by 2043 from 28.6 percent in 2018. These targets, however, are challenged in the present context as one-third of the population is at risk of falling back into extreme poverty mainly as the result of COVID-19 pandemic.

4. **Under the baseline scenario, growth is expected to decelerate over the medium term as pandemic-era stimulus continues to unwind**. The baseline scenario assumes that monetary policy continues to normalize, that COVID-19 related monetary and fiscal stimuli are unwound, and that global headwinds persist. These factors are expected to contribute to a gradual deceleration of growth to 5.1 percent in FY2023, and to 4.9 percent in FY2024. The growth outlook is bolstered by the assumption that international tourist arrivals will reach pre-pandemic levels by FY2024, supporting the services sector. A continued expansion of hydroelectricity production capacity is expected to drive industrial sector growth over the medium-term.

Sectoral and Institutional Context

Federalism and health systems restructuring

5. **Health sector is one of the most devolved sectors with federalism.** The 2015 Constitution defined the broader areas of responsibilities for federal, provincial and local levels which were further unbundled in functional analysis and assignments[2]. With the devolution of power, a new set of organizational structures for health have been established at federal, provincial and local levels. The primary function of the federal government is to define policy, legal framework and standards for the health sector and provide tertiary level services. Provinces also perform similar functions to the federal level but within their own territory

[1] World Bank. 2022. World Development Indicators 2022. Washington, DC: World Bank.

[2] GoN, 2018. A Report on Functional Analysis and Assignment.

and under the policy and legal provisions defined by the federal level. Health sector was combined with the education and several other social sectors under the purview of Ministry of Social Development at the province level. But lately separate ministry has been established in majority of the provinces to oversee the health sector at the province level. Local levels are mandated to provide basic health care services free of user fee as per the fundamental rights defined in the Constitution. However, in practice, higher levels of public health facilities are also engaged in providing basic health services.

6. **A brief profile of provinces is presented in the Table below**

Table 1: Comparative scenario of provinces for selective indicators

Province	Districts	Local levels	Population (in million)	No of public hospitals	No of other public health facilities	No of non-public health facilities	Gender inequality index (GII)
Province 1	**14**	**137**	**4.97**	**31**	**1,079**	**141**	**0.459**
Madhesh	8	136	6.13	16	1,024	172	0.503
Bagmati	13	119	6.08	63	1,213	1,406	0.457
Gandaki	**11**	**85**	**2.48**	**19**	**737**	**96**	**0.46**
Lumbini	12	109	5.12	30	990	168	0.474
Karnali	10	79	1.69	27	728	57	0.558
Sudurpashchim	9	88	2.71	15	708	42	0.522
Nepal	77	753	29.19	201	6,479	2,082	0.479

Source: CBS for population and unemployment; Nepal Human Development Report (2020) for GII; Department of Health Services (DoHS) annual report (2022) for number of health facilities.

7. **The federal restructuring has expanded the network of public health facilities to the ward level, but their functionality remains poor.** This policy has increased access but concerns about the quality and efficiency of the systems persist. For example, despite an increase in birthing centers, the number of deliveries in these centers has not risen. In FY 2019, about 50 percent of birthing centers conducted fewer than 30 deliveries a year, indicating underutilization of the facilities and a compromise in the quality of care[3]. To increase efficiency, resources could be redirected from many facilities to a smaller number of hospitals to improve quality, promote care integration, work with communities, and provide transportation[4]. The redesign of the service delivery mechanism should prioritize expanding cost-effective, less complex services at the community level, and pooling resources for quality-sensitive services that require multiple sets of expertise, with effective referral mechanisms in place.

Health indicators

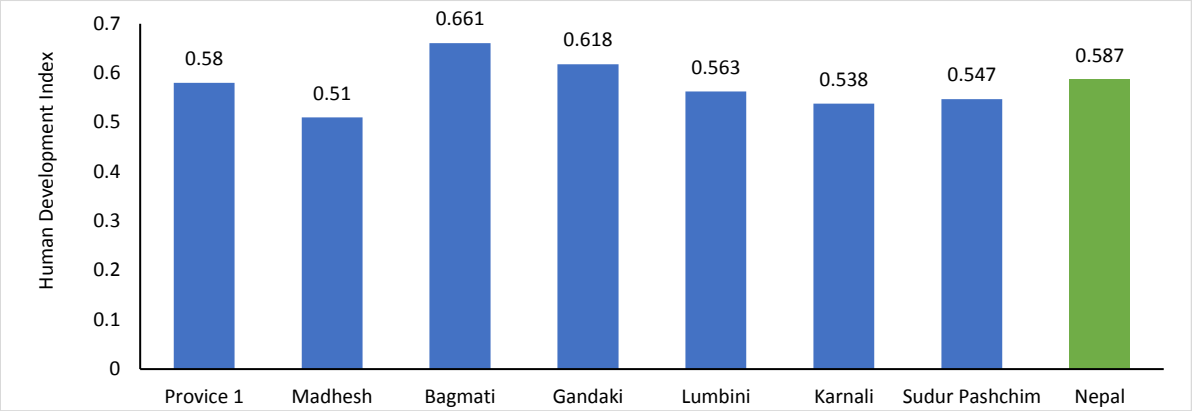
8. **Nepal has made steady and significant progress in health outcomes over the past several decades.** Life expectancy has been steadily increasing in the country to 71 years in 2021, up from about 38 years in 1960. And the maternal mortality ratio decreased from 553 to 186 per 100,000 live births between 2000 and 2017. Nepal fares relatively well across a range of population health indicators relative to comparator countries in its income group.

[3] *MoHP. Nepal Safe Motherhood and Newborn Health Road Map 2030.*

[4] *Margaret E Kruk, et al, 2018. High-quality health systems in the Sustainable Development Goals era: time for a revolution, The Lancet Global Health Commission on High Quality Health Systems. 2018*

9. **Nepal's health progress is reflected in its Human Capital Index (HCI) score** (0.505 in 2020, 2nd in South Asia after Sri Lanka)[5]. Its Human Development Index (HDI) has improved 55.6 percent (0.602 in 2019) but still lower than average of developing countries, medium HD countries and South Asia (ranked 143rd in 2021)[6]. Bagmati, Gandaki, and Province 1 lead in HDI while Madhesh ranks last (0.51 HDI in 2019)[7]. Nepal's Gender Development Index (GDI) is 0.886 in 2019, higher than average of South Asia and LDC (2018 data). However, HDI adjusted for inequality showed a 25 percent loss in 2019.[8]

Figure 1: Human Development Index at national and provincial level, FY 2019



Source: National Planning Commission, 2020. Nepal Human Development Report 2020, Beyond Graduation: Productive Transformation and Prosperity.

10. **Although significant progress is evident, challenges remain**. Access to reproductive, maternal, neonatal, child health, and nutrition services has either slightly improved or stagnated in recent decades. For example, although use of modern methods of contraception increased from 26 percent in 1996 to 44 percent in 2006, it is steady at 43 percent from 2011 to 2022. Neonatal mortality stands at 21 per 1000 live birth from 2016 to 2022. Exclusive breastfeeding of under six months has declined from 66 percent to 56 percent between 2016 to 2022. Prevalence of anemia in children 6-59 months is still high at 43 percent in 2022, only down from 48 percent in 2006. Moreover, there are variations in healthcare access and outcomes by provinces, wealth quintiles, rural-urban status and educational status of mothers.

11. **Health financing and financial protection.** Table shows health financing key indicators. In Nepal, per capita health expenditure slightly increased (from $47.9 in 2015 to $53.2 in 2019), but share of CHE in GDP decreased. Per capita spending is below $86 needed for universal coverage. External health expenditure's share is decreasing, a concern for financial protection. Out-of-Pocket (OOP) expenditure is high, and two-thirds of such expenses are for medicines and medical products. Share of external health expenditure in CHE is declining with fluctuations.

[5] *World Bank Database: Accessed on Nov 09, 2022.*
[6] *National Planning Commission (NPC), 2020. Nepal Human Development Report 2020, Beyond Graduation: Productive Transformation and Prosperity, NPC, Kathmandu.*
[7] *National Planning Commission, 2020. Nepal Human Development Report 2020, Beyond Graduation: Productive Transformation and Prosperity. NPC.*
[8] *UNDP, 2019. Human Development Report 2019, Beyond income, beyond averages, beyond today: Inequalities in human development in the 21st century, UNDP, New York.*

Table 2: Trend in selected health financing indicators of Nepal

Indicators	2015	2016	2017	2018	2019
Current Health Expenditure as percent Gross Domestic Product	5.5	5.4	4.7	4.5	4.4
Domestic Health Expenditure as percent of Current Health Expenditure	85.6	88.3	84.6	86.5	88.1
Domestic General Government Health Expenditure as percent Current Health Expenditure	16.6	18.6	22.6	23.6	24.8
Out-of-pocket spending as percent of Current Health Expenditure	59.4	55.4	57.4	57.7	57.9
External Health Expenditure as percent of Current Health Expenditure	14.4	11.7	15.4	13.5	11.9
Domestic General Government Health Expenditure as percent Gross Domestic Product	0.9	1.0	1.1	1.1	1.1
Domestic General Government Health Expenditure as percent General Government Expenditure	5.1	5.3	4.5	3.8	4.0
Current Health Expenditure per Capita in US$	47.9	48.3	50.3	51.1	53.2

Data source: World Bank database.

12. **High level of OOP expenditure (58 percent) is an indication of regressive financing structure for the health services.** This has caused relatively high level of financial catastrophe and impoverishment. While the reduction of poverty is high on the development agenda of the country, 1.7 percent or approximately 496,000 people are being pushed into poverty (at PPP $ 1.90 level) because of OOP[9]. Similarly, 10.7 percent of people spent more than 10 percent of their household's total expenditure on health care indicating the situation of financial catastrophe. Almost two-thirds (65.6 percent) of the OOP spending were for the pharmaceutical and medical supplies for FY 2018[10] while around 3 percent OOP spending is estimated to have been associated with treatment abroad. Medicines is among the top ten commodities that Nepal imports[11] making the health sector vulnerable during the times of cross border issues and any other issues concerning international trade.

13. **Universal Health Coverage (UHC) Index**. The UHC service coverage index[12] for Nepal is estimated to have been increased to 50 percent in 2021[13] which is much higher from 4 percent in 2005 but lower than 59 percent in 2020[14]. Such a drop within a single year can be linked to the COVID-19 pandemic which adversely affected service utilization particularly due to restrictive measures adopted by the government. Comparative scenario of the UHC service coverage index for the selected countries is presented in the figure below. Nepal needs to accelerate its to meet the sustainable development goals (SDG) for UHC. This contrasts to the situation that Nepal is relatively prioritizing primary health care than to the comparable countries in the region. In 2019, Nepal's spending on Primary Health Care

[9] WHO, 2021. Monitoring progress on universal health coverage and the health-related Sustainable Development Goals in the South- East Asia Region: 2021 Update, WHO South-East Asia Region.

National Planning Commission, 2020. The Fifteenth plan 2019/20- 2023/24.

[10] MoHP. 2022, Nepal National Health Accounts,

[11] Nepal Rastra Bank, Current macroeconomic and financial situation: https://www.nrb.org.np/

[12] This index is summary measure of essential health service coverage which is computed by taking the geometric mean of service coverage values across the sub-indicators. The UHC coverage index ranges from 0% to 100%, with 100% implying full coverage across a range of services.

[13] WHO, 2021. Monitoring progress on universal health coverage and the health-related Sustainable Development Goals in the South- East Asia Region: 2021 Update, WHO South-East Asia Region.

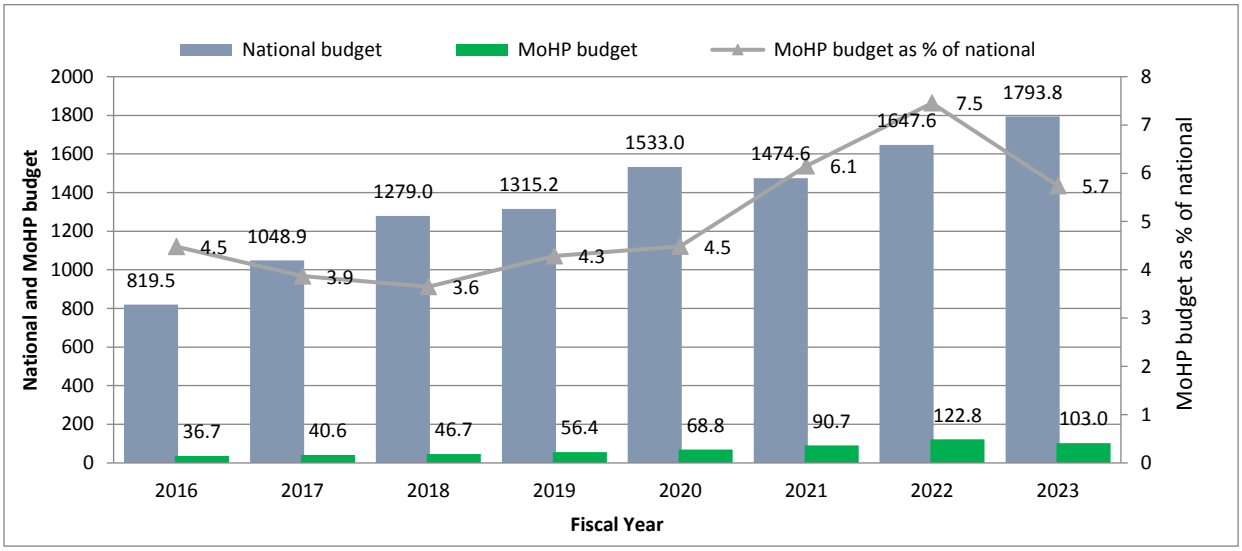
[14] WHO, 2019. Monitoring progress on universal health coverage and the health-related Sustainable Development Goals in the WHO South-East Asia Region: 2019 update

(PHC) was estimated to be 64 percent, which is higher than India (45 percent), Bhutan (45 percent) and Sri Lanka (38 percent)[15]. Going beyond the health sector, only 17 percent of the population were covered by basic social protection schemes in FY2019 in Nepal[16].

14. **COVID-19 and response management.** The initial phase of the COVID-19 pandemic disrupted health services delivery in Nepal and led to a 47 percent increase in estimated maternal deaths (compared to same period of the previous year)[17] due to service disruption and fear of visiting health facilities. The pandemic had a widespread impact on Nepalese health system, but many indicators returned to normal after response measures and service continuity were prioritized. For example, coverage of outreach clinics, immunization, and ANC visits were reduced in 2020 but regained pace in 2021.[18]

15. **Health sector in the national budget.** The Ministry of Health and Population (MoHP)'s budget (inc. health sector conditional grants to provinces and local levels) have steadily increased since FY2018. The MoHP budget's share of the national budget increased and received priority during COVID-19. New health facilities were prioritized in annual policies, but budget absorption declined (82 percent in FY2018 to 67 percent in FY2021). Only 50 percent of capital budget and 72 percent of recurrent budget was spent in FY2021[19].

Figure 2: Trend of National and MoHP budget



Source: MoF, various years (Red Book)
Note: Amount in NPR billion

Government program

[15] *WHO, 2019. Monitoring progress on universal health coverage and the health-related Sustainable Development Goals in the WHO South-East Asia Region: 2019 update*
[16] *NPC, Fifteenth Plan.*
17 *Integrated Health Information Management Section. Assess impact of COVID-19 pandemic in selected health services with estimation of 'excess maternal deaths', Integrated Health Information Management Section, Department of Health Services, Kathmandu: 2021.*
[18] *DoHS, 2022. Annual Report 2020/21.*
[19] *FMoHP and BEK/NHSSP (2022). Health Sector Budget Analysis: First Five Years of Federalism. Federal Ministry of Health and Population and British Embassy Kathmandu/Nepal Health Sector Support Programme.*

16. **The Government program "p" is the Nepal Health Sector Strategic Plan 2022-2030-- Sectoral plan of the GoN.** The Nepal Health Sector Strategic Plan (NHS-SP) has been drafted by the MoHP and health development partners (DPs) for the fourth phase of the sector-wide approach. This 8-year plan, aligned with SDG targets, serves as the first sector plan after federal restructuring and the operational plan of the 2019 national health policy. It aims to achieve a "healthy, productive, responsible, and happy citizen" and addresses major health system gaps and challenges (Annex 1) identified as part of its development process[20]. The five strategic objectives outlined in the NHS-SP, developed to address health systems gaps, are:

    Objective 1: Enhance efficiency and responsiveness of health system
    Objective 2: Address wider determinants of health
    Objective 3: Promote sustainable financing and social protection in health
    Objective 4: Promote equitable access to quality health services
    Objective 5: Manage population and migration

    Under these five objectives, there are 14 outcome and 29 output statements with 11 impact level, 33 outcome level and 65 output level indicators for monitoring the strategic plan.

Nepal Quality Health Systems Program (NQHSP)

17. The proposed NQHSP PforR Program ("P") is a well-defined subset of the government program ("p"), i.e., NHS-SP. The diagrammatic representation of the World Bank-supported Program is shown below to reflect the overlap with the Government NHS-SP.

Figure 3. NHS-SP and World bank-supported Program Relationship

18. **The NQSHP focuses on strategic objectives 1, 3, and 4 (enhance efficiency and responsiveness of health system, promote sustainable financing and social protection in health, promote equitable access to quality health services) and defines three results areas (RAs) of the Program** as shown in Table 3.
    - The RA 1 -- Improving readiness of healthcare delivery system and quality of care-- aims to improve readiness and efficiency of Nepal's healthcare delivery system focusing on three

[20] *MoHP, 2022. Nepal health sector strategic plan [draft], Government of Nepal, MoHP, Kathmandu Nepal.*

components namely Minimum Service Standards (MSS), data systems and bio-medical equipment. MSS covers governance, clinical services and support services at the facilities while data systems are cross cutting which bridges health facilities with the concerned authorities. Similarly, medical equipment component is also very much linked to service delivery and efficiency.

- The RA 2 -- Improving health insurance coverage and effectiveness-- intends to widen the scope of financial protection in health. This RA focuses on expanding health insurance scheme's coverage to promote pro-poor health protection; and strengthening health insurance board's institutional capacity, including timely management of the received claims.
- The RA 3-- Enhancing health emergency preparedness and response capacity at Province and Local Levels --- aims on enhancing health emergency preparedness and response capacity at sub-national levels. Given the context of post COVID-19 and threat of other diseases potential for epidemic, preparedness, planning and surveillance, and response capacity have been proposed.

Table 3. Mapping of objectives, outcomes, and outputs of NHS-SP against NQHSP Results Areas

Results Area (RA)	Output	Outcome	Strategic Objective
NA	*Competent human resources for health produced based on projections*	1.1 Skill-mixed human resources for health produced and mobilized	Enhance efficiency and responsiveness of health system
RA 1	Human resources for health mobilized effectively		
RA 1 & 2	Evidence generated, analyzed and used at all levels leveraging technology	1.2 Evidence- and equity-based planning	
RA 1	Promoted high-quality health research in priority areas		
NA	*Physical infrastructure of health institutions strengthened*	1.3 Safe and people friendly health infrastructures	
RA 1	Health facilities equipped with bio-medical and other equipment, and regularly repaired and maintained		
RA 1	Domestic production of medicines, diagnostic and health products promoted and regulated	1.4 Ensured uninterrupted availability of quality medicine and supplies	
RA 2	Procurement and supply chain management of medicines and supplies strengthened		
RA 1, 2 & 3	Governance and leadership performance improved at all levels	1.5 Improved governance, leadership and accountability	
RA 1 & 2	Citizen engagement platforms enhanced and institutionalized		
RA 1	Ethical health practice and rational use of services promoted		
RA 2	Improved public financial management		
RA 3	Strengthened preparedness for public health emergencies	1.6 Public health emergencies managed effectively	
RA 3	Public health emergencies responded effectively and timely		
NA	*Institutional and policy arrangements governing wider determinants developed and/or reformed*	*2.1 Reduced adverse effects of wider determinants on health*	*Address wider determinants of health*
NA	*Operationalized multi-sectoral collaboration by establishing institutional mechanism*		
NA	*Modified behavior of citizens for a healthier lifestyle*	*2.2 Citizens responsible for their own, family and community health*	
RA 1 & 2	Increased domestic financing and efficiency in health sector	3.1 Improved public investment in health sector	Promote sustainable financing and
RA 1	Improved management of development cooperation in health sector		

RA 2	Free basic health services ensured in urban and rural settings	3.2 Improved social protection in health	social protection in health
RA 2	Reformed health insurance system		
NA	*Streamlined social health protection schemes*		
RA 1	Quality assurance mechanism for health services strengthened	4.1 Improved quality of health services	Promote equitable access to quality health services
RA 1	Quality of care improved at the point of delivery		
RA 1 & 2	Improved access to quality health services	4.2 Reduced inequity in health services	
RA 2	Drivers of inequities in health services addressed		
NA	*Strengthened population information management system and research*	*Maximized demographic dividend and managed demographic transitions in development process*	*Manage population and migration*
NA	*Enabling environment created for demographic dividend and transition management*		
NA	*Safe migration and planned settlement promoted*	*Systematic migration and planned settlement practiced*	

Strategic Relevance and Technical Soundness of the Program

Results Area 1: Improving readiness of healthcare delivery system and quality of care

Strategic Relevance

19. **The Constitution of Nepal explicitly includes quality-related aspects of health services.** The state policy aims to provide equal access to high-quality healthcare for all and to prioritize research for quality healthcare. The Constitution defines setting standards and quality of healthcare as a federal jurisdiction[21] and the Functional Analysis and Assessment report outlines specific functions for federal, provincial, and local levels[22]. In 2007, a Quality Assurance in Health Care Services policy was developed to ensure quality and establish an institution for quality education. Recent legal documents such as the Public Health Service Act, Health Insurance Act, Health Institution Operation Standards, and National Medical Education Act set standards for quality healthcare delivery. The previous sector strategy (Nepal Health Sector Strategy 2016-2022) and the current NHS-SP prioritizes quality in healthcare and aims to provide minimum standard care with specific indicators for monitoring progress.

20. **Improved data systems are crucial for high-quality health systems to deliver timely and reliable interventions for improving population health**[23]. Data is essential for monitoring equity, quality, and efficiency in the health system, detecting potential health threats, and adapting programs to evolving needs. Key sources of data include routine data management systems, surveillance systems, and periodic surveys. Some data systems focus on inputs and others on outputs and population characteristics. In 2017, the MoHP developed the National e-Health Strategy to leverage e-Health for improved access to quality healthcare[24]. The 2019 Digital Framework Nepal aims to drive

[21] *The Constitution of Nepal, 2015.*
[22] *Government of Nepal, 2017. Functional Analysis and Assignments (in Nepali), Government of Nepal.*
[23] *SCORE for health data technical package: global report on health data systems and capacity, 2020. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.*
[24] *MoHP, 2017. E-health strategy, MoHP 2017.*

socioeconomic growth through 80 prioritized digital initiatives in eight sectors to address challenges and unlock growth potential.

21. **Effective maintenance and management of medical equipment is crucial for providing cost-effective and high-quality health services.** The Health Care Technology Policy in 2006 and the National Health Policy in 2019 address various issues in the use of medical equipment in Nepal, such as unscientific procurement, improper storage and maintenance, and poor safety standards. The MSS, implemented in more public hospitals, sets criteria for the availability and functionality of equipment. However, maintaining medical equipment remains a challenge, with 81 out of 304 sampled devices in a 2008 rural hospital assessment needing repair due to a lack of expertise, spare parts, and appropriate referral systems[25] [26].

22. **Improved quality of care leads to more efficient health systems**. Studies have shown a positive relationship between health system efficiency and the quality of care. Poor quality care causes not only disease and early death, but also economic losses and inefficiency in the system. The regulation of health care services in Nepal is ineffective due to a patchy regulatory framework and limited enforcement[27]. Health facilities in LMICs are often under-equipped, overcrowded, and understaffed, affecting their performance, and overuse of unnecessary care is also common, making the system inefficient. Improving the quality of care in LMICs has the potential to save over 8 million lives each year, making it a critical issue, especially in resource-poor settings. Worldwide, poor-quality care is now seen as a bigger barrier to reducing mortality than lack of access[28].

23. **Despite priority being given to improving the quality of care in policy and strategic documents, implementation challenges remain.** Routine information systems do not provide adequate or reliable data for monitoring quality at the facility level and reports are often incomplete and delayed. Quality data is also questionable due to under and overreporting of service statistics. Surveys such as the Nepal Health Facility Survey (NHFS) provide comprehensive data for monitoring quality indicators. Results from two rounds of the survey show positive changes in most areas, but some indicators have declined. Hospital staff report that performance and quality of care are affected by unbalanced resource supply, such as underutilized expertise and insufficient equipment and infrastructure. The latest health facility survey in Nepal found poor adherence to tracer standards, with less than 1 percent of facilities having each of the nine tracer items[29].

Table 4: Comparative scenario of selected facilities and services in 2015 and 2021

Description/indicator	NHFS- 2015	NHFS- 2021	Percentage change
Basic facilities			
Improved water source (percent of facility)	81	94	16.0

[25] *Gammie A, Upadhayaya M, Shrestha S, Zimmermann M. BMEAT Nepal - Assistant technician training for resource-poor settings. In: 7th International Conference on Appropriate Healthcare Technologies for Developing Countries. Institution of Engineering and Technology; 2012. p. 1–3. https://doi.org/10.1049/cp.2012.1478.*

[26] *Thapa, R., Yih, A., Chauhan, A. et al. Effect of deploying biomedical equipment technician on the functionality of medical equipment in the government hospitals of rural Nepal. Hum Resour Health 20, 21 (2022). https://doi.org/10.1186/s12960-022-00719-y.*

[27] *Ministry of Health. 2017. Quality Improvement Structures in Nepal – Options for Reform. Kathmandu, Nepal: Ministry of Health.*

[28] *Margaret E Kruk, et al, 2018. High-quality health systems in the Sustainable Development Goals era: time for a revolution, The Lancet Global Health Commission on High Quality Health Systems. 2018*

[29] *Those nice items were related to soap and water, waste disposal, trained staff, QA guidelines, clinical protocols, basic amenities, waiting room and tracer medicines.*

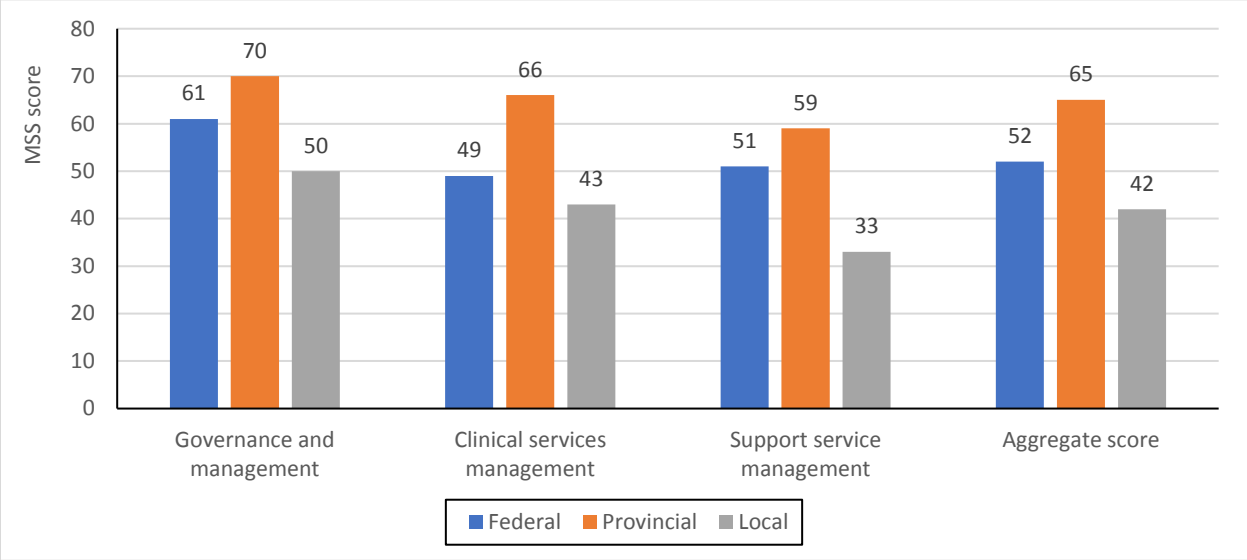
Regular electricity (percent of facility)	49	78	59.2
Child weighing scale	39	67	71.8
Set of basic equipment (percent of facility)	13	41	215.4
Basic tests			
Urine pregnancy test	30	43	43.3
Urine protein	14	27	92.9
Hemoglobin	16	26	62.5
HIV diagnostic test	6	5	-16.7
Compliance on service delivery standards			
BP and weight measured (ANC)	28	26	-7.1
Counseled on at least 3 danger signs (ANC)	2	2	0.0
Advised on sign and symptoms (Integrated management of neonatal and childhood illness- IMNCI)	9	12	33.3
Provider wrote on client health card (IMNCI)	44	26	-40.9

Source: NHFS Reports of 2015 and 2021.

24. **MoHP introduced the MSS in 2015 to improve the quality of care in health facilities.** The MSS covers three categories of facilities and includes criteria for governance, management, clinical services and support services, with overall assessment scores determining the readiness and quality of services. The overall assessment score of the MSS is calculated with 20 percent weightage on governance and management, 60 percent weightage on clinical services and remaining 20 percent weightage on support services. Although MSS has been implemented across facilities, there is a challenge in having up-to-date data, particularly for lower-level facilities (Health Posts which are now been categorized as Basic Health Service Centre), and the digital database is not linked to other data systems, only capturing data for hospitals.

25. **The assessment of gaps in readiness for the implementation of MSS has not yet produced the desired results**. Despite the assessment of health facilities and identification of gaps, the gaps have not been effectively addressed. This is due to structural barriers like land and infrastructure, as well as lack of resources and commitment from leadership. In FY2022, the MSS assessment score was available for 118 federal, provincial and local hospitals, with the provincial level hospitals being in a better situation. However, the score is still lower than desired. The MSS assessment is seen as a potential way to improve the readiness of health facilities, but it may not be enough to improve the quality of services.

Figure 4: MSS score of federal, provincial and local level hospitals, FY 2022



Source: Curative Service Division, MoHP presentation on Joint Consultative Meeting, 2022.

26. **COVID-19 adversely affected routine provision of services and quality of care:** The COVID-19 pandemic demanded attention of the policy makers and implementors affecting their engagement in routine program implementation. During the early phase of the pandemic, various programs were suspended and even health facilities suspended wide range of services focusing only on selective areas and restrictions on movement deterred access to services. Stock out of the drugs is also a standing problem in the systems. Learnings documentation[30] during the COVID-19 finds that nearly 50 percent of the PHCC/HP respondents reported stock outs of essential MNH drugs such as Misoprostol and Nifedipine, as well as medical abortion drugs[31]. Within the context of COVID-19, evidence also shows reductions in service availability, service utilization and quality of care[32]. Such situation demands renewed focus on strengthening health systems towards improving quality of care.

27. **The MoHP has faced challenges with timely and complete reporting of health data**, particularly service utilization statistics through HMIS. The quality of reported data is also a concern due to paper-based recording and reporting. The Management Division has prioritized online reporting directly from health facilities and a gradual move towards online recording of data at service delivery points. This is reflected in the recently developed Integrated Health Information Management System Roadmap 2022-30 which aims to support health facilities in reporting online and transitioning to digital recording of health data. Interoperability of data between different information systems and electronic medical recording at health facilities are also planned to improve data management and evidence-based planning.

[30] *NHSSP, 2021. Report on lessons learnt from the orientation of health workers and managers on "Interim Guidance for RMNCH services in COVID-19 Pandemic"*

[31] *The study finds stock-outs of Nifedipine (67 percent), Misoprostol (38 percent), medical abortion drugs (38 percent) and a few others at the palika stores.*

[32] *NHSSP, 2021. Report on lessons learnt from the orientation of health workers and managers on "Interim Guidance for RMNCH services in COVID-19 Pandemic"*

28. **Poor inventory management systems at public hospitals:** Considering the various challenges in relation to the management of the medical equipment, a third-party verification of medical equipment in academics and hospitals were carried out in two of the federal level hospitals in 2021 with the following objectives:
    - Conduct verification of all existing medical equipment review the inventory management status
    - Identify the required and available equipment to provide health services
    - Suggest the strategies to be taken forward to utilize medical equipment properly

    The assessment found that the procurement of medical equipment in Nepal is decentralized, with both centralized procurement and hospital-based procurement systems in place. An audit of two federal hospitals (Bharatpur and Bir hospitals) revealed that 53.5 percent and 76 percent of the equipment were procured by the hospitals themselves[33]. The audit also showed that a higher percentage (16 percent) of government-supplied equipment was found to be out of order compared to the hospitals' own purchases (8 percent) in Bharatpur. Furthermore, 50 percent of the donated equipment was not even unpacked. A previous survey also showed that 61 percent of the medical devices in rural government hospitals were non-functional due to a lack of proper maintenance systems. The MoHP has also initiated assessments of the inventory management system and audits of the medical equipment.

Technical Soundness

29. **The Program's Results Area 1 focuses on implementing and strengthening tools to enhance health systems readiness and quality of care envisioned by the GoN.**

    - Scaling up the roll out MSS at primary and secondary health facilities and facilitating improvement of MSS scores of such facilities. MSS developed for various levels of health facilities include indicative set of medical equipment that are crucial for service provisions. Under the support services of the MSS, repair and maintenance related functions are included. Failing to ensure minimum set of equipment and associated repair and maintenance functions will reduce the facility's score in the MSS assessment. Similarly, NHS-SP has acknowledged the importance of routine and periodic repair and maintenance of health buildings, and medical equipment in relation to strengthening health systems and enhancing efficiency[34].

    - The Program will support establishment of biomedical equipment maintenance and repair workshop: Currently, biomedical maintenance hub remains at the federal level which has not been able to address the issues all across the country. Policy discussion is ongoing at the MoHP level to establish biomedical maintenance site at the provincial/strategic sites which is also envisioned in the NHS-SP. Recently, MoHP has started inventory audit system of the public hospitals which could reveal the availability and functionality status of the medical equipment.

[33] *Bharatpur and Bir hospital studies.*
[34] *MoHP, 2022. NHS-SP 2022-2030, working draft.*

- The Program will also help formulating electronic medical records framework and initiating electronic medical records practices in select public health facilities as envisaged by the integrated health information management system roadmap.

Results Area 2: Improving health insurance coverage and effectiveness

Strategic Relevance

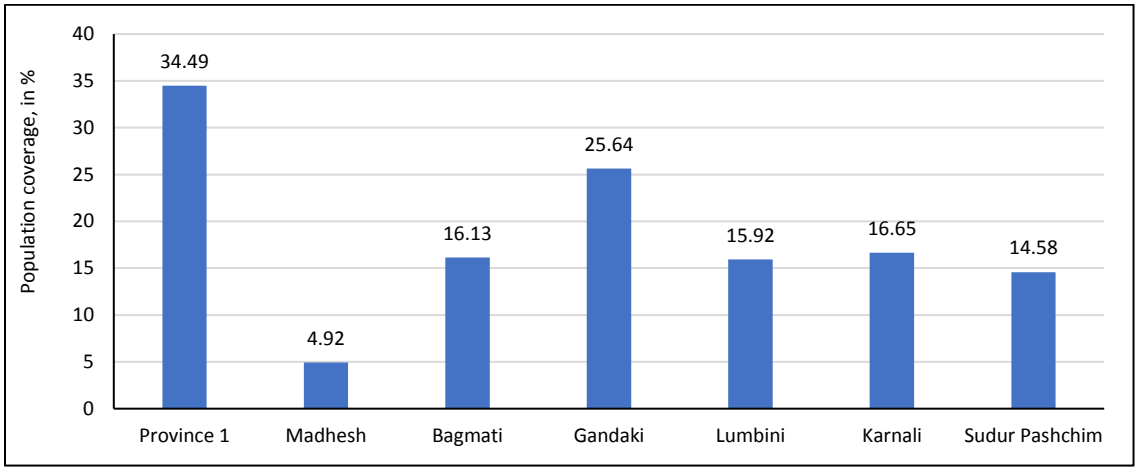
30. **Expansion of health service coverage was focused by Nepal's first national health policy of 1990**. The second long term health plan 1997 aimed to allocate resources effectively by prioritizing cost-effective essential health services. The 2015 Constitution established basic health care as a fundamental right, providing a supportive policy environment to expand health service coverage through various schemes to minimize financial burden. Policy dialogues have been started to harmonize the health financing systems in the country and a health financing strategy was envisioned under the second Nepal Health Sector Program (2010-2015) to finance the cost of services beyond the essential health services[35]. The provision of essential health services has evolved into the basic health services package to meet the constitutional requirement of free basic health services. The health insurance policy 2014 has was developed to increase financial protection for the public by promoting pre-payment and risk pooling.

31. **Implementation foundation for the health insurance was laid after the formation of the Health Security Development Committee in 2015** and enrollment of the families in the insurance scheme was started from three districts in 2016. For widening the autonomy to the implementing agency, Health Insurance Act and Health Insurance Regulations were promulgated respectively in 2017 and 2018. Since then, geographical coverage of insurance has steadily expanded all across the country with exception of few local levels of the Kathmandu Valley as of mid-April 2022.

32. **Enrollment in Health insurance.** Enrollment is mandatory under the Health Insurance Act 2017; in practice, however, enrollment into the health insurance has been mostly voluntary, partly because the relevant by laws have yet to be approved by the Cabinet. Nonetheless, amongst those enrolled, the contribution amount is set at NPR 3,500 per year for a family of up to five members and NPR 700 for every additional family member. "Ultra-poor" families, families of individuals with select conditions (Multi Drug Resistant-Tuberculosis, HIV, Leprosy, severe disability); and the elderly (>70 years old) population are identified as vulnerable populations and are eligible for full subsidy. Moreover, female community health volunteers are provided partial subsidies (50 percent) to Health Insurance scheme by the health insurance board (HIB). Formal sector is yet to be enrolled. As of end of FY 2022, 22.45 percent of the total population were covered by health insurance[36]. However, population coverage varies substantially across the provinces- the highest being in Province 1 (34.49 percent) and the lowest being in Madhesh province (4.92 percent) which is presented in figure below. The poor and vulnerable population continue to be out of health insurance coverage. Only 9 percent of estimated poor population are enrolled in the insurance.

[35] *MoHP, 2010. Nepal Health Sector Programme- II, Ministry of Health and Population, Government of Nepal 2010.*
[36] *As per the HIB updates.*

Figure 5: Population coverage under national health insurance scheme by provinces



Source: Health Insurance Board official website.

33. **Visible impact of the health insurance on financial protection in Nepal is yet to be assessed as no comprehensive studies have been conducted lately.** However, due to narrowly defined coverage services particularly in terms of benefit cap (up to NPR 100,000 per household of five per year) and exceptions, those with serious health problems find themselves pushed out of the insurance boundary to pay out of their own pocket. Insurance has certainly supported in accessing care particularly to those who are within the proximity of sophisticated hospitals but its contribution towards overall financial protection remains very much limited.

34. **Being a purchasing agency of health services, HIB has the potential to enforce quality related aspects.** In 2021, HIB has defined following criteria, among others, for the enlisting of the hospitals in health insurance scheme[37] which are important from the quality of care.
    - Minimum of 60 percent MSS score
    - Availability of own pharmacy
    - Electronic medical record system practiced
    - Minimum of three specialists along with 25-bed capacity for non-public facilities.

35. **Focus on geographical expansion with less attention on population coverage:** Although existing legal framework envisions universal coverage in health insurance both for formal and informal sector, the enrollment has been voluntary in practice. Through the budgetary speech, government announced to bring government employees under the insurance coverage, but it has not yet come into operation. There is no policy clarity on how to align the package of services that are covered insurance scheme and that of Social Security Fund[38]. Also, the drop out is high[39] which implies low level of satisfaction among the enrolled population. Government sponsorship for the enrollment of the poor has been provisioned in the health insurance Act and regulations but identification of the poor has been quite

[37] *HIB, 2021. Standard Operating Procedure for the enlisting of Health Service Providing Institutions, 2078.*

[38] *Social Security Fund is a semi-autonomous government entity which manages contribution based social security schemes for the employees. This implements medical & maternity benefits as well as accident & disability schemes among others.*

[39] *According to annual report of HIB, renewal rate ranged between 85 percent in Lumbini province to 50 percent in Karnali in FY 2021.*

slow. Some of the local levels have initiated to provide subsidy for the enrollment in the health insurance.

36. **Weak organizational capacity has an adverse impact on its performance**: HIB's organizational structure is yet to be established properly. The HIB is relying on its temporary organizational structure to manage all its business which is explicitly linked with more than 5 million people's health and approximately 450 health institution which are enlisted for service provision. Public health facilities are identified as the first contact point for accessing health services under health insurance while secondary and tertiary facilities including private sector provers are enlisted as referral institution. The Board has not been able to endorse its permanent structure for which consultation with key actors is ongoing for couple of years. Similarly, there has been prolonged delay in the reimbursement to hospital which has even led to drop out of few public and private hospital (e.g., Nepal Korea Friendship Municipality Hospital, B&C Medical College and Teaching Hospital) from the service providers' list of the insurance. Such delays in reimbursement are mainly due to two factors: limited human resources within the HIB to review the claims for the reimbursements.; and issues in the claim submission particularly concerning completeness and timeliness of the claims. Although the claim submission is done through the digital platform, most of the facilities rely on paper-based recording system which are scanned and submitted for reimbursement. Such delays in the reimbursement have not only directly affected the access to services but also raised a prominent question on overall sustainability of the health insurance scheme. Budgetary provision of managing the insurance scheme through a company and delisting of the private sector providers for service provisions have also raised concerns on overall governance and service assurance for the public.

Technical Soundness

37. By focusing on the issues faced by the national health insurance program, the Results Area 2 will emphasize the importance of covering the poor and vulnerable population by health insurance and enhancing the effectiveness of the health insurance program by timely management of the claims. These two focus areas were also highlighted during consultations with stakeholders. The Program with help with:
    - Enhancing institutional capacity and efficient operation of health insurance scheme
    - Adopting digital solutions for claim processing and reimbursement
    - Accelerating the process for poor identification and their enrollment in the insurance scheme possibly through local levels

Results Area 3: Enhancing health emergency preparedness and response capacity at Province and Local Levels

Strategic Relevance

38. **The Infectious Disease Act of 1964, amended in 2019, requires federal and provincial governments to take action in potential public health threats.** Section 2(1) of the Act gives the government power to take necessary measures and issue orders to prevent the spread of infectious diseases. This Act

served as the legal basis for the government to impose restrictions and enforce public health measures. The Act also assigns infectious disease control responsibilities to Chief District Officers, who are federal government employees at the district level. Additionally, the Public Health Services Act authorizes federal, provincial, and local governments to declare a state of public health emergency and outlines response measures to be taken. This Act requires each level of government to develop and implement a health emergency plan and provides for a Rapid Response Team and Emergency Medical Team to ensure timely responses in health emergencies.

39. The authority of defining the infectious diseases is with the GoN while the responsibilities regarding reporting and treatment of the infectious disease are also defined in Public Health Services Act and the corresponding regulations. Public Health Service Regulations[40] has authorized a strong clause [27 (5) and 96)] regarding the mobilization of private, cooperative, non-governmental and other health institutions along with their staff by GoN, provincial government, or local level during the state of health emergency. The PHSR also defines specific actions such as investigations of an individual suspected with infectious disease and provision of quarantine and isolation for which informed consent is not necessary. Although there are guidelines concerns the mobilization of RRTs and EMDUs, MoHP is in the process of revisiting them in the post COVID-19 context. Similarly, EWARs has its own guidelines to facilitate timely reporting of the priority data and for situation monitoring. However, no specific guidelines for disease surveillance system current were noticed.

40. Nepal, as a member state of the WHO, is a signatory of the International Health Regulations (IHR) 2005 which aims to help the international community to prevent, detect, and respond to acute public health risks that have the potential to cross borders and threaten people worldwide (WHO 2016). Moreover, global commitments to SDG, Sendai Framework for Disaster Risk Reduction 2015–2030, Global Health Security Agenda demand increased level of priority on health systems strengthening including emergency preparedness. Nepal has planned for review and update of existing NPPRP aiming to facilitate easy collaboration among Epidemiology and Disease Control Division (EDCD), National Public Health Laboratory (NPHL), relevant stakeholders incorporating the concept of one health.

41. During the initial time of the COVID-19, considering the need for a central level coordinating body for response management, COVID-19 Crisis Management Coordination Center was established through a formation order as per the Infectious Disease Control Act. Besides that, government developed series of operational plan, guidelines and standards to facilitate the response measures. During the organizational restructuring after the federalism, establishment of Centre for Disease Control as a national authority for disease control was discussed and its establishment was also announced in the policy and program of the government during the period of COVID-19. A bill was also drafted by the MoHP for the establishment of Centre for Disease Control (CDC) which however could not progress as envisioned in the absence of strong commitment of the government. The relevance of the CDC with

[40] *Public Health Service Regulations 2020*

expertise on disease and mortality surveillance and epidemiological investigation and modeling was also pronounced as a reflection from the COVID-19 response management[41].

42. **Natural hazards and preparedness.** Nepal's diverse geo-climatic system, which combines heavy monsoons, steep terrain, and remoteness, renders the country vulnerable to natural disasters[42]. The figure below shows the number of people affected by natural hazards and during the last two decades, more than 10 thousand people (more than a million for two years) have been affected for most of the years. From the health sector perspective, epidemic crises are almost common in each year demanding permanent institutional arrangements for epidemic response[43].

43. **Climate change and health.** Nepal has developed a national policy climate change (2019) which adopts the strategy of developing mechanisms for preparedness, forecasting and prevention to avoid the epidemic of vector-borne and communicable diseases induced by climate change, among others[44]. Climate change can affect the human health through diverse channels. Climate variability and climate change influence diseases such as diarrhoea, malaria, dengue and malnutrition[45].

44. **Overall capacity for emergency response.** In contrast to relatively high-risk profile of Nepal, nation's overall health emergency preparedness capacities are relatively low when compared globally as well as regionally. Nepal's all capacities average in the State Parties Self-Assessment Report (e-SPAR) improved from 23 percent in 2018 and 34 percent in 2019 to 39 percent in 2020. This compares low with the regional (63 percent) and the global average (65 percent) in 2020. In 2021, Nepal stood at 107th place out of 195 countries (and sixth out of 9 countries in the region) in Global Health Security (GHS) Index with a score of 34 out of 100 (a reduction of 1.6 from 2019Nepal's status in terms of index and rank in reference to the global average is given in the table below.

Table 5: Nepal's health security index in reference global average

Category	Nepal's status		Global average index
	Index	Rank	
Prevention of the emergence for release of pathogens	30.6	79	28.4
Early detection & reporting epidemics of potential international concern	28.1	109	32.3
Rapid response to and mitigation of the spread of an epidemic	26.9	158	37.6
Sufficient & robust health system to treat the sick & protect health workers	37.9	73	31.5
Commitments to improving national capacity, financing plans to address gaps, and adherence to global norms	31.1	177	47.8
Overall risk environment and country vulnerability to biological threats	49.2	130	55.8
Overall health security index	34.2	107	38.9

[41] *MoHP 2022. Health Sector Response to COVID-19 Pandemic in Nepal.*

[42] *https://climateknowledgeportal.worldbank.org/country/nepal/vulnerability#:~:text=Nepal's%20diverse%20geo%2Dclimatic%20system,hampered%20by%20poverty%20and%20disempowerment. Accessed on Aug 02, 2022.*

[43] *MoHP, 2021. Progress of the Health and Population Sector: National Joint Annual Review Report 2021.*

[44] *GoN, 2019. National Climate Change Policy, 2019,*

[45] *WHO, 2015. Climate and health profile- Nepal. accessed on Nov 05, 2022 at: https://www.who.int/publications/i/item/WHO-FWC-PHE-EPE-15.27*

Source: Jessica A. Bell and Jennifer B. Nuzzo, Global Health Security Index: Advancing Collective Action and Accountability Amid Global Crisis, 2021. Available: www.GHSIndex.org.

45. **Planning and disease surveillance system.** Various legal and policy documents govern the planning for health emergency in Nepal but there is not a single comprehensive guiding documents for emergency planning and response and so is the institutional structure for emergency management. Health Emergency Operation Centers have been established at federal[46] and provincial levels and have been responding during the emergency. Nepal has been adopting twin approaches for disease surveillance which is an important component for the emergency preparedness and response management:
    - Indicator-based surveillance which mainly relies on Early Warning and Reporting System (EWARS)[47]
    - Event-based surveillance which relies on internet based, facility based and community-based reporting

46. EWARS complements routine health management information data by early reporting for detection of notifiable diseases with outbreak potential. Priority diseases that are currently monitored through EWARS are acute gastroenteritis, cholera, severe acute respiratory illness, dengue, kala azar, and malaria. However, reporting status of the hospitals is poor adversely affecting detection and response measures. For example, out of 18 sentinel sites in Province 1, only 50 percent reported on at least 80 percent of the epidemiological weeks and the percentage was even lower for Gandaki province (21.4 percent of hospitals) [48]. EDCD oversees the EWARS systems, monitors the reported data, analyzes the diseases/syndrome pattern, and disseminates a EWARS bulletin on weekly basis. Regarding the case-based surveillance, public media, social media and other relevant websites are used as the means for Epidemic Intelligence from Open Sources (EIOS). Similarly, reporting from the health facilities and laboratories is another means for surveillance. NPHL also plays important role as the apex laboratory in the public sector particularly for laboratory-based surveillance and as the reference laboratory. Disease specific programs such as TB, Malaria and HIV AIDS have their own monitoring and surveillance systems including community activities for case finding. Another important body in terms of epidemic management is EDCD which has various functions including the outbreak investigation and contract tracing. EDCD also leads the EWARS and community-based surveillance through its Call Center [1115].

47. **Various arrangements for the disease surveillance are not systematically connected to feed into the planning process in a synchronized manner.** During the field consultation in province 1, one officer acknowledged that routine surveillance system, particularly at the community level, has deteriorated in the recent years due to multi-layer management structure, COVID-19 pandemic, vacant posts and

[46] The HEOC was set up in 2014 to support health sector preparedness and response management during the humanitarian events. Provincial HEOCs were established after the federal restructuring. These Centres are operating under the management of the health ministry at the respective level. There is not such equivalent organizational structure at the local level.

[47] Established in 1997, EWARS is a hospital-based sentinel surveillance system for early detection of six priority vector-borne, water and food borne diseases/syndromes with outbreak potential. Currently, 118 hospitals from all provinces and districts in the country have been selected as sentinel sites to report cases on a weekly basis or immediately when there is an outbreak.

[48] EWARS Annual Report 2021- EDCD.

weakened accountability. As the practices of active case finding has weakened at the community level, district system mostly relies on facility-based reporting which suffers from incomplete and delayed reporting. There has been policy discussion to establish an autonomous central body for disease control which however has not materialized.

48. **Emergency response management capacity.** The strengthening of communication and coordination for effective public health response is a compliance requirement of the International Health Regulations (2005), and the establishment of the HEOCs around Nepal is a key milestone in fulfilling this requirement. Recently in 2021, national Health Emergency Operation Center (HEOC) and four Provincial Health Emergency Operation Centers (PHEOCs) of Province 1, 2, Bagmati, and Lumbini were handed over to the MoHP[49]. As the HEOCs are understaffed, World Health Organization (WHO) along with other supporting partners, have been supporting the federal and provincial ministries carrying out their functions. Despite increased level of investment made during the COVID-19, organizational capacity for emergency response management is still weak along with poor intergovernmental coordination[50].

49. **The formation and deployment RRTs[51] have been in practice in Nepal as a major pillar of epidemic preparedness and response system for over two decades**. In the past RRTs were formed at national, regional and district level. The EDCD developed an integrated training package on emergency preparedness and response for RRTs in 2017. After the federal restructuring, Interim RRT guideline 2075 was introduced in accordance with the new structure in federal system[52]. During the COVID-19, provincial and local governments, under the guidance of federal government, shared various responsibilities for emergency management. Case identification and contact tracing team were formed and made responsible for contact tracing in close coordination with local level RRTs[53]. During the COVID-19 pandemic, preparedness and rapid response guidelines were also formed by some provinces (e.g., Sudurpashcim) and even by some local levels. RRT's members and capacities vary widely and there is dearth of routine capacity building measures to support them. Besides that, an RRT is often formed and mobilized on ad hoc basis in response to a potential event.

50. **Vulnerability of Nepal's health sector was exposed during the COVID-19 when systems capacity was overstretched.** The weak health system of the country was badly affected due to the disruption in global supply chain of medical products, including closure of the borders and restrictions on internal movements, during the COVID-19 pandemic[54] [55]. Hospitals were overstretched and people queued to arrange oxygen cylinder on their own at the time when hospitals were not able to cater the elevated level of demand. Although existing institutional structure such as HEOC and Health Desks at point of entry were made functional and Rapid Response Teams were formed, their capacity remained

[49] *https://www.who.int/nepal/news/detail/25-03-2021-who-nepal-hands-over-five-health-emergency-operation-centers-from-around-nepal-to-mohp.*

[50] *MoHP, 2022. Health Sector Response to COVID-19 Pandemic in Nepal.*

[51] *Their role has been important in preparedness and early identification of potential outbreaks, and investigation and prompt response during the outbreaks (MOHP/DOHS Annual Report 2019-20).*

[52] *DoHS, 2021. Annual report 2019/20.*

[53] *MoHP, 2022. Health Sector Response to COVID-19 Pandemic in Nepal.*

[54] *MoHP 2022. Health Sector Response to COVID-19 Pandemic in Nepal.*

[55] *https://www.theguardian.com/world/2021/may/10/hopeless-situation-oxygen-shortage-fuels-nepal-covid-crisis*

relatively weak along with limited resources. In FY 2020, MoHP provisioned 1.17 percent of its budget US$ 4.27 million (496.7 million NPR) for preparedness related programs which however was increased in three subsequent years[56]. Local governments were forced to allocate additional budgets for the COVID-19 response measures like quarantining, isolation, testing, and contact tracing, and accordingly making changes to municipal priorities in comparison to previous years[57]. Similarly, federal government also provisioned earmarked fund for specific activities such as for the establishment of temporary hospitals, procurement of equipment and medical supplies and case-based reimbursement for the treatment.

51. **Poorly prepared health facilities.** Preparedness planning at hospitals has been prioritized over the past decades; is still slow in terms of health emergency response management capacity. Before 2004, only two hospitals had their preparedness plan and since then Hospital Preparedness for Emergencies (HOPE) courses have been conducted on regular basis[58]. Besides HOPE, simulation exercise was also conducted along with HOPE training in September 2018 in Nepalgunj. An overall health sector simulation exercise has been planned for September 2022 which will help in identifying systems gaps for the development of the preparedness plan. In a national level survey of the health facilities, 12 percent of the facilities reported having a rapid response team while only 6 percent of facilities reported having an outbreak management plan[59]. Although hospitals are equipped with necessary components for addressing disease outbreaks or other emergencies compared to the lower-level facilities, the situation is far below the satisfactory level. For example, 39 percent of federal/provincial hospitals reported that they had a plan for outbreak management and 77 percent had a mass casualty plan. Such as gap in required components even during the COVID-19 pandemic period clearly reflects the very low level of preparedness by the health facilities. While the nonstructural measures such as increasing the basic knowledge of disaster planning is often more effective than costly structural measures, such measures were found to have been often overlooked at the facility level[60]. Status of the preparedness planning by type of health facilities is shown in the figure below[61].

[56] *NHSSP, 2021. Analysis on the allocation and utilization of health sector budget for COVID-19 response and management.*

[57] *Democracy Resource Centre, 2021. Budget Prioritization and Implementation by Local Governments during the COVID-19 Pandemic.*

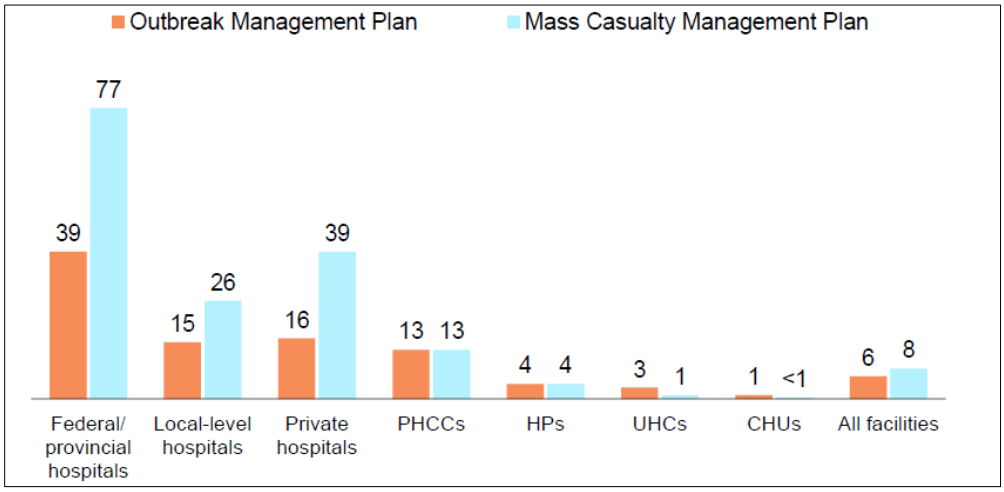
[58] *Asian Disaster Preparedness Center, 2014. HOPE, a pivotal program to Nepal's future in emergency medicine: A case study. Accessed at: https://www.adpc.net/igo/category/ID860/doc/2015-hm15Gs-ADPC-Nepal_emergency_medicine.pdf*

[59] *Nepal Health Facility Survey 2021.*

[60] *Asian Disaster Preparedness Center, 2014. HOPE, a pivotal program to Nepal's future in emergency medicine: A case study. Accessed at: https://www.adpc.net/igo/category/ID860/doc/2015-hm15Gs-ADPC-Nepal_emergency_medicine.pdf*

[61] *Nepal Health Facility Survey 2021.*

Figure 6: Preparedness planning by type of facilities, percent of facilities



Source: NHFS, 2021.

Technical Soundness

52. Preparedness for the emergency and disaster requires wide range of the actions under different aspects. WHO has set benchmarks for the IHR under 18 technical areas and suggested actions to address gaps for increasing the performance of countries in emergency preparedness through the development and implementation of a National Action Plan for Health Security[62]. In the benchmark tool, five levels of capacity are defined under each technical component along with list of standard actions required to achieve corresponding level of capacity. Within the context of Nepal, in light of the learnings from the COVID-19, broad aspects identified to enhance the preparedness and decision-making process were documented as[63]
    - improvements to routine surveillance systems to improve data capture;
    - strengthen epidemic modelling capacity within the country; and
    - strengthening the mortality surveillance system.

53. Although an integrated disease surveillance system was proposed in the National Health Sector Strategy, not much has progressed on this except the implementation of EWARS. However, in the aftermath of the COVID-19, there is internalization to have an integrated systems for disease surveillance. Development of a comprehensive National Health Emergency Response Operations Plan (NHEROP) and its implementation is recommended by the WHO as an overarching approach for preparedness and response management.[64] WHO's global guidance include stakeholder mapping and situation assessment, developing the operation plan, dissemination of the plan and finally conducting training and simulation exercise as per the plan as the standard steps in preparing for national response to health emergencies and disasters. Development of a comprehensive preparedness a

[62] *WHO, 2019. WHO Benchmarks for International Health Regulations (IHR) Capacities. Geneva: World Health Organization; 2019. Licence: CC BY-NC-SA 3.0 IGO.*

[63] *MoHP, 2022. Health Sector Response to COVID-19 Pandemic in Nepal.*

[64] *WHO, 2021. WHO guidance on preparing for national response to health emergencies and disasters. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO*

response plan was suggested as an important tool during the consultation meeting with stakeholders. Couple of the hospitals visited during the field consultation, acknowledged that they lacked a comprehensive and up to date plan to facilitate the preparedness and response measures during emergency. However, recently MoHP, along with WHO, is supporting the hub hospitals to develop their preparedness plan. As of end of October 2022, preparedness plan has been developed by 12 hub hospitals.

54. Based on the learning from the COVID-19, and field consultation following interventions are found be the in priority in the context of Nepal.
    - Developing guidelines for establishing integrated surveillance and early warning system including detail data analysis and reporting
    - Development of the hospital preparedness and response plan and accordingly enhance organizational and individual capacity for timely and effective response management
    - Strengthening pre-positioning of emergency equipment, medical commodities and supplies for the for the mobilization during emergency which will also demand expansion of eLMIS up to the facility level and routine assessment on stock level
    - Enhancing the capacity of sentinel sites for complete reporting and adding the features like artificial intelligence for early detection of potential epidemic such as through by all the sentinel
    - Strengthening of district level capacity for integrated surveillance such as through the mobilization of Surveillance Medical Officers
    - Formation of and capacity development for RRTs as per the new guidelines at provincial and local levels
    - Conducting periodic simulation exercise, develop action plan to address the identified gaps and strengthen capacity for timely response

Implementation Arrangements

55. MoHP is responsible for overseeing and managing the health sector programs. It has three departments, each with specific responsibilities and functions. The Department of Health Services (DoHS) manages the health programs and performs supervisory role in program management and service provisions. The MoHP and its departments work with professional councils, health insurance board, academic institutions, and federal level hospitals to develop plans, strategies, and operational documents. Provinces play an important role in the provision of services and monitoring of health programs at the district and local levels.

56. The Management Division (MD) of the DoHS is responsible for the procurement, storage, and supply chain of health commodities and equipment, as well as the repair and maintenance of biomedical equipment. The MD also manages important information systems and oversees the development of health infrastructure and equipment. The Quality, Standards and Regulations Division (QSRD) of the MoHP sets health care standards, while the Curative Service Division (CSD) of the DoHS implements them and is responsible for providing the implementation framework for local levels. Epidemiology and Disease Control Division (EDCD) of the DoHS oversees the interventions related to preparedness

and response planning for the health emergency. Health Insurance Board (HIB) is responsible for the implementation of health insurance scheme. Health Coordination Division of the MoHP is responsible for coordination with inter-ministerial, subnational, and international agencies. Similarly, Policy, Planning and Monitoring Division (PPMD) of the MoHP will be the crucial division for the 'Program' design and implementation because of its role for setting policy framework, planning and budgeting and facilitation for program implementation.

57. Due to the recently established organizational units at the provincial and local levels, they are yet to gain their potential in implementation. Moreover, unfulfilled HR positions are an issue both at management units and at service outlets which was also evidenced during the field consultation. Weak implementation capacity of the health sector is also reflected in low absorption of the health sector budget (e.g., absorption of health budget reduced from 82 percent in FY 2018 to 67 percent in FY 2021) despite an enabling policy environment and elevated level of budget allocation during the time of COVID-19. For example, due to the shortfall of staff, few of the ministerial staff of the province were made responsible to lead the district level office in parallel. In overall, provinces were having 38 percent shortfall of the civil service staff after the adjustment.

Table 6: Staff fulfillment and vacant position after adjustment, by provinces

Province	Provisioned	Adjusted	Vacant	Fulfilled (%)	Vacant (%)
Province 1	3373	2415	958	71.6	28.4
Madhesh	3158	1812	1346	57.4	42.6
Bagmati	3906	2525	1381	64.6	35.4
Gandaki	2699	1748	951	64.8	35.2
Lumbini	4037	2532	1505	62.7	37.3
Karnali	2332	1334	998	57.2	42.8
Sudurpaschim	2792	1455	1337	52.1	47.9
Total	22297	13821	8476	62.0	38.0

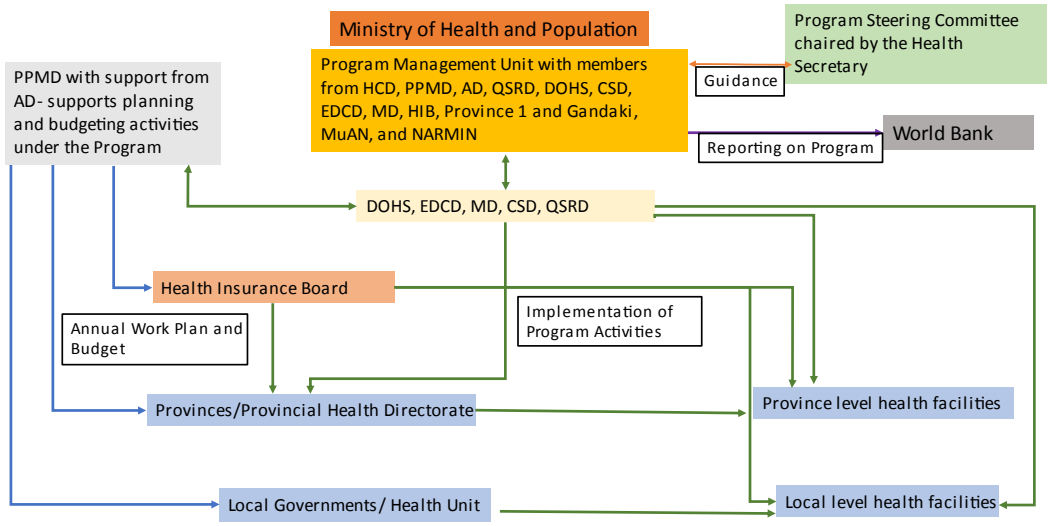
Source: Devkota, Khim Lal, Amrit Shrestha and Abhas Ghimire (2021). Planning and Budgeting in the Provinces of Federal Nepal – A Comparative Analysis. *Madhu Raman Acharya, ed. Kathmandu: The Asia Foundation.*

58. Realizing the weak organizational capacity, MoHP has been advocating for the comprehensive review of existing organizational structure of the health sector which is also proposed in the draft NHS-SP. Low absorption rate of the health sector is also a reflection of the weak implementation capacity. Still the huge chunk of the budget remains with the federal government some of which are channeled to the provinces and local levels during implementation. However, this Program has a potential to support the MoHP's plan to enhance the capacity of health sector related organizations through the strategically selected results areas and their components.

59. MoHP will serve as the implementing agency which remains responsible for providing policy guidance, ensuring an enabling environment, allocating adequate resources, overseeing implementation, and accountability to the Bank with regards to the Program. A Program Management Unit (PMU) under the leadership of a director level senior official will be formed. The PMU will include directors/representatives of relevant MoHP's divisions and centers, including directors of CSD; MD; PPMD; and EDCD, Administration Division and QSRD. HIB representative and representative from Province 1 and Gandaki; Municipal Association of Nepal and National Association of Rural

Municipalities in Nepal be in the PMU. The PMU will ensure day-to-day oversight, implementation and monitoring of results in the Program. A Program Steering Committee, chaired by the Secretary of Health and constituted of high-level officials will supervise and guide the PMU for Program implementation and accountability.

Figure 7. NQHSP Implementation Arrangements



Program Expenditure Framework

60. **The expenditure framework of the Program is based on the existing spending pattern of the MoHP and the cost scenario of the NHS-SP.** Economic classification of the health sector budget (MoHP, inclusive of health sector conditional grants for province and local levels) is presented in the table below. Relatively large share of the health budget allocated for human resources and grants and social security[65]. These funds mainly support free/subsidized health services and health insurance programs. The large allocation for human resources is due to the wide network of public health facilities, from basic health centers to specialized federal hospitals. The Program's focus on human resources and grants/social security aligns with government priorities as reflected in policy and planning. The Program also addresses the growing concern for public health preparedness, given the COVID-19 pandemic and other infectious diseases (e.g. monkeypox, cholera[66] and dengue[67]), which is reflected in the Program's Result Area 3.

[65] The year FY 2022 was the exceptional year with one-third of the budget allocated for medicines and supplies mainly because of the COVID-19 vaccination campaign. In this particular year, around 36 percent of the health budget was allocated for COVID-19 response management.

[66] The outbreak of cholera was reported in Kapilvastu in 2021 and in Kathmandu in 2022.

[67] Dengue emerged in Nepal since 2005 and the number of reported cases had decreased significantly since 2010, there are increasing cases in recent years. In FY 2021, a total of 489 dengue cases were reported from 51 districts (DoHS Annual Report 2020/2021) while heavy spike of cases in current FY. During the period of two and half months (mid-July to end of October 2022), more than 45,000 dengue cases and 54 deaths have been reported from 77 districts (Situation Update Report of the HEOC, October 31, 2022).

Table 7: Trend and composition of the federal health budget by line items

Description	2019	2020	2021	2022	2019	2020	2021	2022
	Million US$				Percent (%)			
Wages and salaries	122	130	157	153	24.5	22.0	20.4	13.8
Support services	14	8	20	5	2.8	1.4	2.6	0.4
Capacity building	8	4	6	5	1.5	0.7	0.8	0.5
Program activities	42	57	87	126	8.4	9.7	11.4	11.3
Medicines and supplies	47	54	48	374	9.4	9.2	6.3	33.7
Grants and social security	187	261	317	329	37.4	44.2	41.4	29.7
Capital construction	68	68	124	112	13.7	11.5	16.2	10.1
Capital goods	12	8	8	6	2.4	1.3	1.0	0.5
Total	500	591	767	1,109	100.0	100.0	100.0	100.0

Source: NHSSP/MoHP, Budget Analysis Report, 2022.

61. The federal MoHP has projected the implementation cost of the NHS-SP for the first five years of implementation. The summary figures are available by objectives, outcomes and health system building blocks.

Table 8: Projection of the NHS-SP implementation cost "p"

Outcome Area	2024	2025	2026	2027	2028	Total	
						Total	Percent
Outcome 1.1	382	432	513	576	679	2,582	34.8
Outcome 1.2	14	21	25	29	33	122	1.6
Outcome 1.3	151	184	218	251	284	1,088	14.7
Outcome 1.4	99	108	118	130	145	600	8.1
Outcome 1.5	5	5	5	5	5	24	0.3
Outcome 1. 6	2	3	4	4	4	17	0.2
Outcome 2.1	10	9	10	11	12	53	0.7
Outcome 2.2	14	15	18	20	22	89	1.2
Outcome 3.1	45	54	64	73	80	315	4.2
Outcome 3.2	255	343	331	357	392	1,677	22.6
Outcome 4.1	67	67	67	67	67	333	4.5
Outcome 4.2	34	38	42	45	48	207	2.8
Outcome 5.1	7	7	7	7	7	37	0.5
Outcome 5.2	54	55	56	57	58	279	3.8
Total	1,139	1,341	1,477	1,631	1,836	7,424	100.0

Source: NHS-SP costing projection, MoHP.
Source: In million US$

62. **A total of 7.42 billion US$[68] has been estimated for the implementation of the NHS-SP "p" and the Program "P" cost is estimated to be $1.513 billion.** The Program's total cost was determined by including only relevant outcomes and outputs, and assigning weightage based on the nature of the components. For instance, 28.6 percent [2/7 provinces] of the estimated human resource cost is included, reflecting the focus on two focal provinces. Similarly, 20 percent of the program cost is accounted for in the Program expenditure framework for enrolling poor and target groups through the government budget for health insurance. The estimated Program cost is shown in the table below,

[68] *The exchange rate of 16th July 2022 (start data of the FY 2023) has been applied for the conversion of NPR into US$.*

based on the NHS-SP outcome areas. The five-year total cost of the Program, within its defined framework, is $1.513 billion, which is 20.4 percent of the estimated total cost of the NHS-SP implementation.

Table 9. Summary of Program Expenditure Framework

	Year 1	Year 2	Year 3	Year 4	Year 5	Total (Amount in million, US$)
NHS-SP "p"	1139	1341	1477	1631	1836	7,424
NQHSP "P"	229	271	301	333	379	1,513
"P" as a percent of "p"						20.4 percent
Bank Financing						103.84 million US$
Bank Financing as a percent of "P"						6.9 percent

- Results Area 1 includes components related to MSS, data management systems (electronic medical record), and medical equipment repair workshop. These functions are spread across federal, province, and local levels, and concern public health facilities. The key cost items in this category are governance, data management and reporting, procurement of equipment, and setting up medical hubs. The expenditure framework covers the recurrent costs of public hospitals and health facilities, information management systems, equipment, and review and reporting. The cost estimate does not include revenue generated from service users' fees, or physical infrastructure costs such as building construction.
- Results Area 2 includes health insurance, and the HIB is responsible for implementing the program. The Fifteenth Plan aims to enroll 60 percent of the families in the health insurance scheme by FY 2024 and the NHS-SP has further set to increase the enrollment rate to 85 percent by 2027. These targets, along with current budget provisions, were used to define the Program expenditure framework for health insurance, which is crucial for reducing financial hardship. In FY 2023, the government allocated 7.5 billion NPR for health insurance, covering 21 percent of the population. The HIB generates revenue through contributions, and its internal revenue is over 6 billion NPR. The MoF provides an annual budget for HIB's management costs and service reimbursement. Only 20 percent of the estimated costs for social protection in health were included in the expenditure framework, focusing on the poor and targeted population.
- Results area 3 focuses on preparedness, planning, surveillance, and strengthening rapid response capacity. The cost of preparedness and response, influenced by the COVID-19 pandemic, is cross-cutting and requires multi-sector collaboration. Nepal's poor preparedness status is reflected in its global health security ranking and is addressed by outcome 1.6 of the NHS-SP, focused on effective management of public health emergencies. The cost projected by the MoHP, lower than global recommendations and WB estimates, was used as a reference for the expenditure framework.

Table 10: Composition of the total cost by Outcome Areas within the scope Program boundary "P"

						Total	
Outcome Area	**2024**	**2025**	**2026**	**2027**	**2028**	**Amount**	**Percent**
Outcome 1.1	109	123	147	164	194	738	48.8
Outcome 1.2	7	10	12	15	17	61	4.0
Outcome 1.3	8	9	11	13	14	54	3.6

Outcome 1.4	20	22	24	26	29	120	7.9
Outcome 1.5	1	1	1	1	1	5	0.3
Outcome 1. 6	2	3	3	3	3	13	0.9
Outcome 2.1	-	-	-	-	-	-	0.0
Outcome 2.2	-	-	-	-	-	-	0.0
Outcome 3.1	11	13	16	18	20	79	5.2
Outcome 3.2	51	69	66	71	78	335	22.2
Outcome 4.1	13	13	13	13	13	67	4.4
Outcome 4.2	7	8	8	9	10	41	2.7
Outcome 5.1	-	-	-	-	-	-	0.0
Outcome 5.2	-	-	-	-	-	-	0.0
Total	229	271	301	333	379	1,513	100.0

Source: estimated based on NHS-SP cost scenario.

Note: Amount in million US$

Table 11: Composition of NHS-SP "p" expenditure by economic classification

						Total	
Outcome Area	**2024**	**2025**	**2026**	**2027**	**2028**	**Amount**	**Percent**
Wages and salaries	314	355	422	473	557	2121	28.6
Capacity building	19	22	26	29	34	129	1.7
Medicines and supplies	99	108	118	130	145	600	8.1
Physical Infrastructure	129	157	186	215	243	930	12.5
Capital goods and maintenance	22	27	32	36	41	158	2.1
Grants and social security	266	356	345	373	411	1751	23.6
Program activities	290	316	349	375	404	1734	23.4
Total	1139	1341	1477	1631	1835	7,424	100

Source: estimated based on NHS-SP cost scenario.

Note: Amount in million US$

Table 12: Composition of Program expenditure "P" by economic classification

						Total	
Outcome Area	**2024**	**2025**	**2026**	**2027**	**2028**	**Amount**	**Percent**
Wages and salaries	82	93	110	123	146	554	36.6
Capacity building	5	6	7	8	10	36	2.4
Medicines and supplies	20	22	24	26	29	121	8.0
Capital goods and maintenance	8	9	11	13	14	55	3.6
Grants and social security	62	81	81	88	98	410	27.1
Program activities	52	60	68	76	83	337	22.3
Total	229	271	301	333	379	1,513	100.0

Note: Amount in million US$

Note: Conditional Grant (26332, 26336) of the two provinces and their local governments is accounted for in all the outcome areas.

Table 13. Budget codes identified under Program Expenditure Framework

Budget code	Name
Wages and Salaries	
21111	Employee Salary
21112	Official Salary
21121	Uniform
21122	Meal
21131	Local allowance
21132	Dearness allowance
21123	Medicine/Treatment Fees
Capacity Building	
22511	Staff Training
22512	Skill Development and Awareness
Medicines and Supplies	
27213	Medicine purchase
Capital Goods and Maintenance	
22213	Vehicles Repair and Maintenance
31123	Furniture and fixtures
31161	Renovation of buildings
31134	Development and purchase of software
Program Activities	
22522	Program Expenses
22529	Other Program Expenses
22611	Monitoring and Evaluation
22612	Travelling Expenses
22311	General Office Expenses
22313	Books and Materials
22314	Fuel for Other Purpose
22315	Newspaper and Information Publication Expenses
22411	Consultant and Service Fees
22412	Information System and Software Operation Expenses
22413	Contractual Service Fees
22111	Water and Electricity
22112	Communications
22211	Fuel- Official
22212	Fuel - Office Purpose
22711	Miscellaneous Expenses
Conditional Grants	
26332	Conditional Grant- Recurrent
26336	Conditional Grant- Capital

63. **Program Audit:** For the Program, the World Bank will rely on the existing mechanisms of the country and will monitor the audit reports (providing adequately detailed expenditure identified under the Program boundary, including all budget codes indicated in Table 13), audited by the Office of Auditor's General over the Program implementation period. Details of the audit arrangements are documented in the FSA.

Economic Justification

Introduction

64. The three RAs of the Program align with the Nepal Government's strategic priorities, as reflected in the objectives and outcomes of the NHS-SP. The proposed results, actions, and indicators aim to increase efficiency and address inequity, contributing to cost-effectiveness. From 1990 to 2019, Nepal's life expectancy increased 12.7 years to 71.1 years in 2019. However, healthy life expectancy was only 61.5 years, nearly 10 years lower. Noncommunicable diseases contributed 61.2 percent of Nepal's total disability adjusted life years (DALY)[69].

65. Given the global context of quality of care being one of the pertinent barriers to minimize the preventable death and government priority on the quality improvement, RA 1 has the potential to strengthen the hospitals services as well as basic health services and contribute to efficiency through the support in effective roll out of MSS. Moreover, strengthening of the data systems as captured in the RA1, can contribute to improve allocative efficiency in the systems through reprioritization of the resources. RA 2 envisions reducing the burden of OOP expenditure which is considered one of the most regressive approaches for financing health services. Widening the scope of health insurance scheme in terms of its population and service coverage along with enhancement of institutional capacity can yield multiple benefits in the health sector. On the one hand, it can directly reduce the burden of NCDs by removing financial barriers in access and prevent impoverishment by minimizing the financial hardship due to ill health. Reduction in premature death and contribution in poverty reduction can bring positive changes in terms of healthy life expectancy and overall productivity level in the economy. Moreover, improved functionality of the biomedical equipment can also contribute in the enhancing the efficiency of the hospitals and patient outcomes.

66. RA 1 has the potential to improve hospital and basic health services and increase efficiency through support and strengthen in MSS roll-out and stronger data systems. This can improve resource allocation and contribute to cost-effectiveness. Enhanced functionality of biomedical equipment can also contribute to improved hospital efficiency and patient outcomes. RA 2 aims to reduce the burden of OOP, a regressive way of financing health services, by expanding health insurance coverage and improving institutional capacity. This can increase access to healthcare, prevent financial hardship, reduce premature death and poverty, and improve healthy life expectancy and productivity. RA 3 aims to make the health system resilient to health emergencies and enhance its shock absorption capacity. Health emergencies can have a significant impact on low-income countries and their populations, as they have low shock absorption capacity. For example, one-third of the population was at risk of extreme poverty due to the COVID-19 pandemic. Improving health sector preparedness is crucial in the context of current diseases like COVID-19, cholera, and dengue. The impact of health emergencies goes beyond specific services-- Quality of care and patient safety are often compromised during emergencies because of neglect of routine primary care services in favor of emergency case management[70]. During the COVID-19 pandemic, neglect of routine primary care services led to an estimated 40 percent increase in maternal deaths in Nepal, which has a significant cost to the economy.

[69] *Nepal Health Research Council (NHRC), Ministry of Health and Population, Institute for Health Metrics and Evaluation (IHME), Monitoring Evaluation and Operational Research (MEOR). Nepal Burden of Disease 2019: A Country Report based on the 2019 Global Burden of Disease Study. Kathmandu, Nepal: , NHRC, MoHP, IHME, and MEOR; 2021.*

[70] *WHO, 2018. Primary health care and health emergencies. Technical brief on primary health care*

Efficiency

67. The Program prioritizes quality aspects in health systems to increase efficiency. High-quality health systems have the potential to save 8 million people annually in low- and middle- income countries[71], with preventable deaths leading to economic losses of $6 trillion in 2015. Preventable maternal and newborn deaths can be addressed through cost-effective, well-known interventions. Addressing preventable risk factors, such as behavioral risks, can reduce the burden of diseases and injuries. Nepal prioritizes avoiding preventable deaths and has recently created a road map for safe motherhood and newborn health to end preventable maternal and newborn deaths[72].

68. Poor-quality care is a larger barrier to reducing mortality than lack of access. It's estimated that 60 percent of deaths from treatable conditions are due to poor-quality care and the rest from not using the health system. A 2008 study estimated the annual DALY economic value for Nepal to be 0.93 percent of GDP[73], equivalent to half of the Federal MoHP's annual budget. The Program includes MSS as a component of RA1 to strengthen health systems. MSS assesses health facilities' readiness in three areas: governance, clinical and support functions, to ensure crucial inputs and adherence to processes. Over time, the MSS assessment checklist can be revised based on learnings, including from the COVID-19 pandemic.

69. The RA 1 program places importance on data systems for the health sector for efficiency, particularly allocative efficiency. Data systems are crucial for performance monitoring and improving efficiency[74]. Good quality, disaggregated data is necessary for designing and implementing interventions to eliminate inequity and inefficiency in the system. However, weak data systems have impacted the annual plan and budgeting in the health sector. The data systems need improvement in terms of timeliness, quality and public dissemination to enhance public access and accountability of the health institutions. The management of biomedical equipment is increasingly linked to the performance of the health system, and improvements in inventory management, periodic audits, and maintenance contracts can contribute to efficiency through improved functionality and increased lifespan of the equipment and reducing environmental impact.

Equity

70. Addressing inequity in health is an important aspect of NHS-SP that aims to improve access and outcomes for the poorer population. The cost of inequity in the health sector can be high, and a study estimated that welfare losses related to health inequality were 9.4 percent of GDP[75]. The Nepal Government has taken a bold policy decision of establishing public health facilities in each ward and a basic hospital in each local level[76], which aims to address existing inequity in access to basic health services and benefit the poorer population. An analysis showed that investment in front-level health facilities are pro-poor and that the public subsidy channeled through sub-health posts and health

[71] *Lancet High Quality health systems*
[72] *MoHP, 2020. Nepal's Safe Motherhood and Newborn Health (SMNH) Road Map 2030, Department of Health Services, Ministry of Health and Population, Kathmandu, Nepal.*
[73] *Brown DW. Economic value of disability-adjusted life years lost to violence: estimates for WHO Member States. Rev Panam Salud Publica. 2008;24(3):203–9*
[74] *WHO, 2016. Health system efficiency How to make measurement matter for policy and management. edited by Jonathan Cylus, Irene Papanicolas and Peter C. Smith. European Observatory on Health Systems and Policies, WHO.*
[75] *Mackenbach JP, Meerding WJ, Kunst AE, 2011. Economic costs of health inequalities in the European Union. J Epidemiol Community Health.*
[76] *There are a total of 6743 wards and 753 local levels in Nepal.*

posts is significantly progressive (public subsidy channeled through sub-health posts and health posts were found to be significantly progressive with gini-coefficients of -0.16 and -0.14 respectively[77] indicating that investment in front level of health facilities are pro-poor). The RA 2 focuses on health insurance scheme which further aims to enhance financial protection in health by covering the services beyond the basic health service package. The provision of subsidy for the poor citizen is a strong pro-poor feature of the health insurance scheme.

Cost benefit analysis

71. Benefits of the investment in pandemic preparedness is also estimated to be multiple folds higher than the investment. In the most conservative scenario, it is estimated that $3.25 of benefit is generated for every US$1 spent, and this increases as high as US$5.31 of benefit for every $1 spent in the least conservative[78]. Substantial capacity gaps, particularly in low- and middle-income counties, have been reported in various studies demanding substantial and sustained increases in investments for improving health emergency preparedness worldwide[79].

72. Similarly, expanding the scope and coverage of health insurance or similar schemes with prepaid mechanisms can yield savings to the systems in terms of reduced rates for package than usual market price, compliance to quality protocols linking to the reimbursement and gains from scale of economy in program management. Health insurance Board has defined reimbursement rates for curatives service packages including for laboratory and radio imaging services which are lower than the general market price. Moreover, specific rates are defined for 1133 types of medicines which are part of health insurance service package. Besides that, 43 surgical items have been listed along with their fees for reimbursement purpose.

73. Considering each of the components of the Program, costs and benefits were analyzed in monetary terms to understand the benefits of the Programs against the estimated costs. In doing so, benefits are estimated under direct cost saving and indirect benefits to the health systems by applying a specific discount rate. Although discounting is important in economic evaluation, there is wide discrepancy in terms of specific rates being practiced[80] and discount rates of 0 to 5 percent were found to have been commonly applied in the health sector[81]. For this evaluation, we used uniform rate of discounting throughout the years on the annualized benefits of the investment. Cost benefit analysis was conducted for five years period mainly basing on the Program Expenditure Framework and relating that to the total expenditure estimated for the government program [i.e., NHS-SP].

74. Since the cost scenario was defined in constant value so was done for the benefits mainly by linking the benefit to the cost amount based on assumptions tailored to the country context. Therefore, no

[77] Silva-Leander, Sebastian, 2012. Benefit incidence analysis in health, Nepal Health Sector Support Programme,

[78] Kellet, J. & Peters, K. 2014. Dare to prepare: taking risk seriously. Financing emergency preparedness: from fighting crisis to managing risk. ODI. Accessed on 29th September at: http://cdn-odi-production.s3-website-eu-west-1.amazonaws.com/media/documents/8748.pdf.

[79] WHO, 2022. The costs of improving health emergency preparedness: A systematic review and analysis of multi-country studies. eClinicalMedicine, 2022: https://doi.org/10.1016/j.eclinm.2021.101269

[80] Hultkrantz, L. Discounting in economic evaluation of healthcare interventions: what about the risk term?. Eur J Health Econ 22, 357–363 (2021). https://doi.org/10.1007/s10198-020-01257-x.

[81] Attema, A.E., Brouwer, W.B.F., Claxton, K.: Discounting in economic evaluations. PharmacoEconomics (2018).

adjustments were made for the inflation, instead estimated annual benefits were contracted by 10 percent as the contingency margin. Moreover, net present value of net annual benefit was calculated using 12 percent. Analysis of the cost and benefit was disaggregated by Results Area of the Program as well as strategic objectives of the program [NHS-SP] which are presented in the following tables. Net benefit becomes positive from the second year of the implementation and successively increases over the years. During the entire phase of Program implementation, a net benefit of US$ 923 million is expected. Given the Program's nature of focusing on strengthening of the government systems and their institutionalization, substantial benefits can be expected beyond the Program phase which however have not been accounted in this analysis.

Table 14: Cost benefit analysis of the Program by Results Areas

Results Area	Costs and benefits	2023	2024	2025	2026	2027	Total
RA 1: Improving readiness and efficiency of healthcare delivery system	Costs	117	133	156	173	199	779
	Benefits	115	217	339	482	666	1,818
	Net benefits	(3)	84	183	308	467	1,039
RA 2: Improving effectiveness and equity of healthcare financing	Costs	77	98	99	108	119	500
	Benefits	84	130	157	189	226	786
	Net benefits	7	32	59	81	107	287
RA 3: Enhancing health emergency preparedness and response capacity at sub-national levels	Costs	35	40	47	52	61	235
	Benefits	31	70	116	164	229	610
	Net benefits	(4)	31	69	112	167	376
Total	Costs	229	271	301	333	379	1,513
	Gross benefits	230	418	612	834	1,121	3,215
	Contingency (10 percent)	23	42	61	83	112	321
	Net benefits	(22)	105	250	417	629	1,380
Net present value (at 12 percent discount rate)							923

Note: Amount in million US$

Table 15: Cost benefit analysis of the Program by NHS-SP Objectives

NHS-SP objectives	Costs and benefits	2023	2024	2025	2026	2027	Total
Objective 1	Costs	146	168	197	221	258	991
	Gross benefits	104	248	395	562	781	2,089
	Net benefits	(42)	80	197	341	523	1,098
Objective 3	Costs	62	82	82	90	98	414
	Benefits	90	98	117	139	165	609
	Net benefits	28	16	35	49	67	195
Objective 4	Costs	20	21	22	22	23	108
	Benefits	36	72	101	133	175	516
	Net benefits	16	51	79	111	152	408
Total	Costs	229	271	301	333	379	1,513
	Gross benefits	230	418	612	834	1,121	3,215
	Contingency (10 percent)	23	42	61	83	112	321
	Net benefits	(22)	105	250	417	629	1,380
Net present value (at 12 percent discount rate)							923

Note: Amount in million US$

Annexes

Annex 1: Health system gaps and challenges

Building blocks	Major gaps	Major challenges
Service delivery	a. **Inadequate availability of quality health services** for basic, emergency, referral and specialist services b. Inequity in health service utilization especially by most deprived and vulnerable segment of the population **c. Poor clinical audit mechanism to improve care culture and provider practice** d. Limited functionalities of existing outreach mechanisms including Primary Health Care-Outreach Clinics	**a. Improving the quality of health services and reaching the unreached communities and groups** **b. Providing free and quality basic health services to every citizen** c. Addressing wider determinants of health to resolve health problems relating to climate change and people's lifestyle d. Addressing barriers to improve access to health facilities, pharmacies and diagnostic labs in remote and difficult areas
Health workforce	a. Poor harmonization between the production of human resources for health (HRH) and their deployment and distribution b. Vacant sanctioned posts of health cadres c. Mismatch of the health staff at the local level due to over-posting in the urban setting and under-posting in the rural setting **d. Acute shortage of human resources related to quality assurance/ control of health products** e. High out-migration of skilled health workers	a. Balanced management of skilled and competent human resources that carry a social responsibility of providing health services **b. Due to the limited sanctioned posts, there are challenges to fulfilling HRH in some specialties such as hospital managers, pharmacist and biomedical engineers** c. Ensuring the academic institutions meet minimum service standards d. Updating the HRH registry and strengthening the information system
Health information system	**a. Limited availability and use of quality data for evidence-based planning and budgeting** b. Inadequate link of research findings in health planning and budgeting **c. Low and inconsistent reporting particularly from private and tertiary level health facilities in Health Management Information System (HMIS)** d. The inadequate functional linkage between provincial health offices and municipalities for data management and analysis **e. Interoperability issues between different information management systems** f. Limited digital health awareness among HRH g. Inadequate health facility level patient information to track the longitudinal visits for monitoring disease control outcome	**a. Increasing the use of data in monitoring, assessment, review, policy formulation, and decision process** **b. Making health information systems more systematic, integrated, and technology-friendly to address the demand for health information at all levels** c. Developing a system to record the causes of deaths and continually conducting research on them **d. Institutionalising the practice of analysing routine data to measure the quality of care** e. Strengthening the health product regulatory information management system and supply chain information management system and establishing their linkages with HMIS at all levels.

Medicine, Medical products, technologies	a. Inadequacy of required modern equipment at the public health institutions b. Resource-constrained and weak market authorization, quality control and assurance institutions **c. Inadequate access and regulation of quality assured health products; medicines and technology services** **d. Weak monitoring of quality, safety and availability of health products; medicines, technologies and supplies** **e. Weak linkage of health product information management system with other health-related information management systems** f. Inadequate regulatory mechanism for measuring, monitoring and managing quality and price of medicine and medical products g. Prevalence and use of substandard and falsified health products and technologies	a. Achieving greater reliance on domestic production for drugs and medical supplies b. Effective management and regulation of drugs and medical supplies c. Operation and maintenance of equipment on regular basis with skilled HRH and adequate funding d. Standardizing domestic medical products to ensure the quality standards e. Institutionalising National Health Accounts (NHA) to routinely monitor health expenditure including spending by private sectors f. Strengthening the pharmacovigilance and establishing the post-licensing surveillance system **g. Ensuring a well-planned system for bio-medical waste treatment centres**
Financing	a. Low budget allocation for the health sector **b. High level of out-of-pocket expenditure for health care** **c. Low national population coverage under the health insurance program and low renewal rate** d. Fragmentation of existing social protection programs in health resulting in confusion and overlaps e. Greater reliance on conditional grants for financing health programs at province and local levels	a. Increasing the domestic financing for health as Nepal has proceeded to graduate from Least Developed Country category b. Reducing the high level of out-of-pocket expenditure for health care c. Enhancing budget absorption capacity and efficiency at all levels **d. Identifying poor and vulnerable population groups to facilitate their access to health services** **e. Addressing existing operational challenges of health insurance and other social protection schemes** f. Regulating users' fee in public and private sector

Source: NHS-SP draft.

Annex 2. Brief description of Results Areas and their Components

Result Areas/ Components	Policy and guiding framework	Key system components	Prime organizational units	Key supporting partners
RA 1: Improving readiness of healthcare delivery system and quality of care				
Minimum service standards	• Public Health Service Act (2018) and regulations (2020) • Checklists for Minimum Service Standards (MSS) • MSS Implementation Guidelines • Quality assurance framework	• Health facility registry • MSS Assessment Management Information System	• Curative Service Division (CSD), DoHS • Quality, Standards and Regulation Division (QSRD), MoHP • Provincial Health Directorate • Health section of local level	• Nick Simon Institute (NSI) • British Embassy in Kathmandu (BEK) • German International

Result Areas/ Components	Policy and guiding framework	Key system components	Prime organizational units	Key supporting partners
			• Hospitals	Cooperation (GIZ)
Data systems	• National e-health strategy, 2017 • 2019 Digital Nepal Framework • Integrated Health Information Management System Roadmap, 2022 • Monitoring and evaluation framework for the health sector	• Health Management Information System • Logistic Management Information System • Insurance Management Information System • Health Infrastructure Information System • Routine Data Quality Assessment	• Integrated Health Information Management Section (IHIMS) /Management Division (MD), DoHS • Policy, Planning and Monitoring Division (PPMD), MoHP • Provincial Health Directorate • Health section of local level • Hospitals	• BEK • GIZ • World Health Organization (WHO) • United Nations Children's Fund (UNICEF)
Medical equipment management	• Checklists for MSS	• Technical Specification Bank • Physical Asset Management System • Logistic Management Information System	• MD, DoHS • CSD, DoHS • PPMD, MoHP • Provincial Health Logistics Management Center • Hospitals	• NSI • Japan International Cooperation Agency (JICA) • KfW
RA 2: Improving national health insurance coverage and effectiveness				
National health insurance	• Health Insurance Policy, 2014 • Health Insurance Act (2017), regulations (2019) • Health financing strategy, 2022 [draft]	• Insurance Management Information System (IMIS) • National Health Accounts (NHA) • Medicine Regulatory Information System	• Health Insurance Board • Nursing and Social Security Division, DoHS • Department of Drug Administration • Social Security Fund	• KfW • GIZ • WHO • Asian Development Bank (ADB)
RA 3: Enhancing health emergency preparedness and response capacity at Province and Local Levels				
3.1 Preparedness, planning and surveillance	• Public health service Act, 2018 and Regulations, 2020 • Infectious Disease Act, 2064 • National Pandemic Preparedness and Response Plan (NPPRP) • Early Warning and Reporting System (EWARS) Guidelines, 2016	• Disease surveillance system • Early Warning and Reporting Systems (EWARS)	• Epidemiology and Disease Control Division (EDCD) • Health Emergency Operation Centre (HEOC) • Provincial HEOC (PHEOC)	• WHO • BEK

Annex 3: Quality related aspects in the functions of the federal, provincial and local levels

Level	Description of functions
Federal	• Health and nutrition related national policies, laws, **quality standards**, plans and regulations • Production and development, storage, sales of medicines, health materials and health technologies, and **preparation and regulation of quality standards for final disposal** thereof • Development of **quality standards**, assessment frameworks and monitoring of drinking water, food stuffs and **air quality**
Provincial	• Provincial policies, laws, **quality standards**, plans on health and nutrition, their implementation and regulation • **Setting quality standards**, registration, operating license, management and regulation of provincial level treatment centres and services • Production, storage and setting maximum retail price of medical and health technologies as per the national standards and **final disposal related quality standards**, registration, operating license and regulation • **Quality standards and quality monitoring** and assessment framework for drinking water, food stuffs, sound and air and implementation thereof • Procurement and supply chain management of vaccines and **quality-sensitive medicines and other supplies** including for family planning
Local	• Safe drinking water and **quality of** food stuffs and control and regulation of air and sound pollution

Source: FAA and Local Government Operation Act

Annex 4: Summary potential policy actions and monitoring indicators by Program results areas

Results Area	Potential priority actions	Potential indicators
Results Area 1: Improving readiness of healthcare delivery system and quality of care	• Expansion of the MSS in hospitals and basic health facilities • Digitized systems for monitoring of the MSS assessment score • Revision of the MSS as per the implementation learnings • Implementation of the Electronic Medical Record in public hospitals • Interoperability of Electronic Medical Record with other information systems such as HMIS and IMIS • Establishment of biomedical maintenance sites	• Percentage of hospitals with MSS database available in digital platform • Percentage of hospitals which have progressive MSS score in subsequent assessment • Percent of public health facilities whose aggregate MSS score are publicly accessible in a single digital platform • Public hospitals where Electronic Medical Record is implemented • Number of biomedical equipment maintenance sites
Results Area 2: Improving health insurance coverage and effectiveness	• Provision of online system for enrollment and renewal • Enforcement of formal sector enrollment • Identification of poor households through local levels with provided standards	• Percentage of poor covered by health insurance on subsidized manner • Renewal rate in health insurance scheme • Analysis report on household expenditure for health based on the household survey data

	• Annual dissemination of the health insurance service statistics and publication of annual report	• Interactive digital platform for the clients to navigate their access to the facilities and reporting of grievances (insurance)
Results Area 3: Enhancing health emergency preparedness and response capacity at Province and Local Level	• Development of required guidelines such as for RRT and integrated surveillance • Preparedness plan for provinces, local levels and hospitals • Strengthen capacity of sentinel sites as per the preparedness plan • Strengthen pre-positing of essential drugs and supplies • Strengthening of districts offices with Surveillance Medical Officers • Expansion of the surveillance system (beyond Vector preventable diseases and beyond districts)	• Percent of local levels having operational procedure for the natural disaster and emergency situation • Percent of local levels having the provision of flexible fund health emergency