

SURVEY REPORT

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Assessment of Health Care Service Delivery at Central Madhesh Province, Nepal

Deepak Jha | Nitesh Kumar Yadav*  on behalf of Health Service Management Study Group**

****Health Service Management (HSM) Study Group (15th MBBS-JMCTH)**

MBBS Fourth Year, Janaki Medical College Teaching Hospital, Tribhuvan University, Kshiroshwornath Municipality, Madhesh Province, Nepal

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***Correspondence:**

yadavnitesh.jmc2200@gmail.com (NKY)

Funding:

Janaki Medical College Teaching Hospital, Kshiroshwornath Municipality, Dhanusha, Madhesh Province, Nepal.

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Abstract:

Background: Effective health service management is critical for improving healthcare delivery, resource utilisation, and patient outcomes. Key objectives were to determine the impact of federal regulations on healthcare delivery, measuring changes in access and affordability, and analysing the financial implications for stakeholders.

Materials and Methods: This descriptive, cross-sectional study looks into the management of the health system in Central Madhesh, Nepal, with an emphasis on the effect of federal policy changes on healthcare delivery. The study looks at healthcare services in several places and districts, including Jaleswor, Matihani, Gaushala, Janakpur & Lalgaadh. The study also conducts a SWOT analysis, epidemiological study and five-year plan.

Results: The health system of central Madhesh province has various obstacles that limit its ability to deliver high-quality care to its residents. Limited resources, such as financing, medical supplies, and skilled personnel, along with ageing infrastructure and logistical challenges, present substantial constraints to successful service delivery.

Conclusion: The findings reveal tremendous improvement and continued obstacles in the healthcare system, such as infrastructural shortages, funding constraints, and human resource limitations. Recommendations are made to improve emergency services, coordination, and healthcare delivery to successfully fulfil the needs of the district's citizens.

Keywords: Central Madhesh; Delivery; Health Service; Management.



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Introduction

Nepal has one of the most extensive health Infrastructures- a three-tier hierarchical referral system for the provision of effective and efficient health service to the majority of its population. Delhi Declaration revisited the Alma Ata Declaration with the aim to achieve the highest possible level of health for the communities we serve, with the goal of "Health for All Rural People"[1]. The World Health Organization (WHO) defines a health system as "all the organizations, institutions, resources and people whose primary purpose is to improve health" (World Health Organization, 2010) [2]. Management is defined as planning, organizing, directing and controlling the

procurement, development, compensation, integration, maintenance and separation of human resources to the end that individual, organizational and societal objectives are accomplished [3].The unitary government of Nepal was switched to the federal government after the declaration of the new constitution in 2015. The federal structure of the country is governed by three levels of government namely the federal level, seven provinces and 753 local governments [4]. The government health system has been restructured with the objective of providing equal health care services to the people, such that they can enjoy their equitable rights to health [4] and pave the

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path to achieving universal health coverage in the country[5]. However, their roles and responsibilities are

not clearly defined and strengthening their capacity is required to ensure a smooth transition.

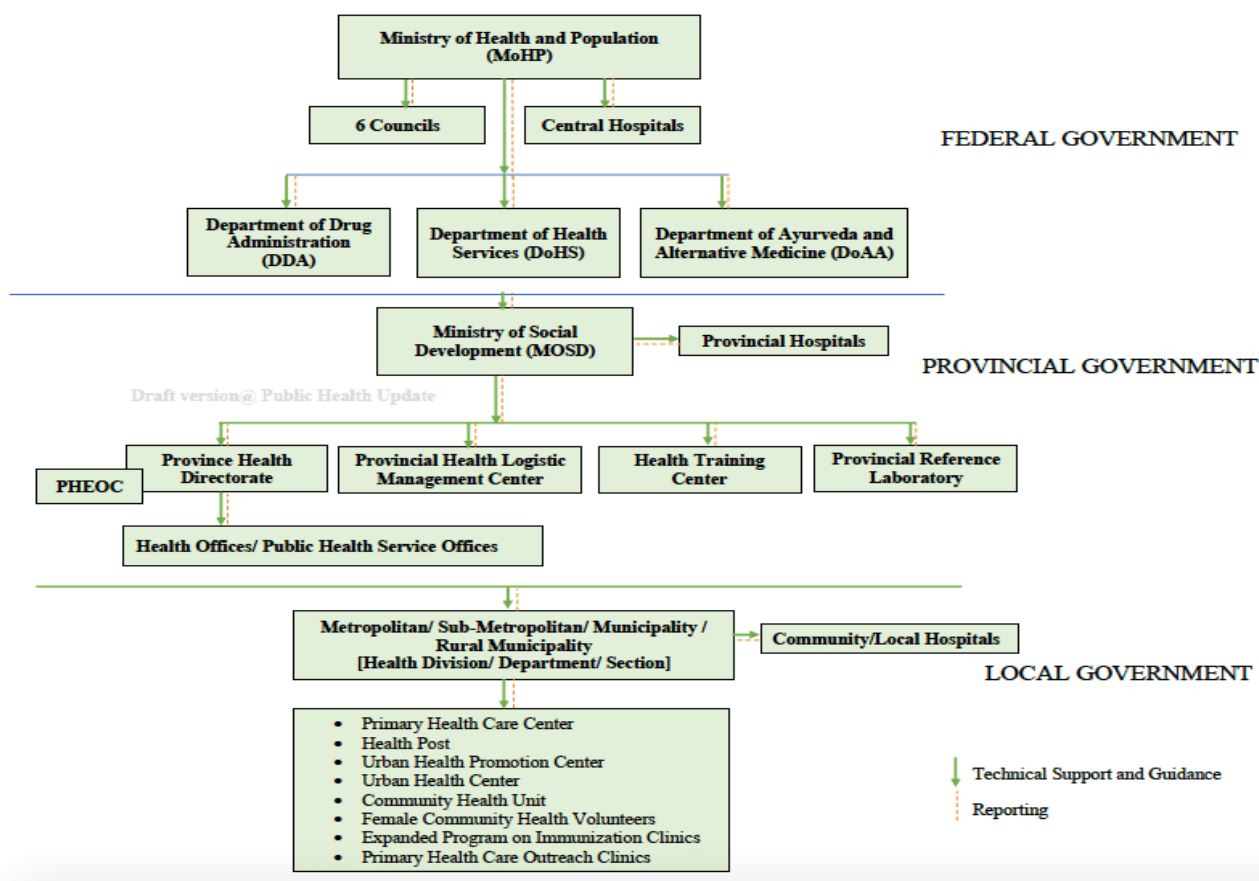


Figure-1| Organogram of the National Health Care System [6].

The Sustainable Development Goals (SDGs) reaffirm a global commitment to achieve Universal Health Coverage by 2030. This means that all people and communities, everywhere in the world, should have access to the high-quality health services they need—promotive, preventive, curative, rehabilitative, or palliative without facing financial hardship [7]. Healthcare delivery is a primary concern for all governments because this sphere is responsible for the citizens' quality of life. However, it is almost impossible to avoid having some problems with healthcare delivery such as healthcare infrastructure, Health workforce and Community engagement. Nepal has made significant progress on health indicators over the past few decades [8]. Quality of care, especially perceived quality based on patients' evaluations and opinions, is an important deciding factor in choosing a health facility[9]. Nepal has a pluralistic health system with a variety of healthcare facilities, [10] which can be broadly categorised into public and private. Nepal aims to accelerate Universal Health Coverage. The National Health Policy of Nepal (2014) [11] aims to improve access to quality and equitable health services and provide basic healthcare

services (BHCS) free of charge, while non-BHCS will be covered through social health insurance. The common health issues are malaria, tuberculosis, risk of HIV/AIDS and anaemia among the adult population, while diarrhoea and acute respiratory illness are common among children. The rise of non-communicable diseases, including mental health, natural disaster-induced health problems and an increasing number of deaths and injuries due to road accidents[12] is an increasing challenge that the health sector needs to respond to effectively and efficiently. Therefore, evaluating resource allocation and health outcomes. This study identifies gaps in the current System with the goal of acquiring knowledge and skills in health system management, administration and planning while working as a team in the allocated district and municipalities. Thus, the study aims to examine the impact of federal government policy changes on the health care system, understand how changes in the federal regulation influence health care delivery, assess the effectiveness of health care reforms and analyse the challenges and opportunities arising from the policy changes in the health care delivery.

MATERIALS AND METHODS

Based on the Curriculum of the MBBS (4th Year, 3rd Phase) program of the Institute of Medicine (IOM), the Department of Community Medicine – JMCTH conducted Six weeks of field visit entitled “Health service management in Mahottari and Dhanusha District”. We are discussing the health care delivery system in Central Madhesh province.

Study design and setting

We conducted a descriptive, cross-sectional study of the management of the health system in Mahottari and

Dhanusha District of Central Madhesh Province in Nepal. The study assessed healthcare facilities in the Dhanusha and Mahottari districts of Madhesh province, including hospitals, community health centres, clinics, and local health posts. This study considered both government-run and private institutions. The focus was given to healthcare providers and service users to assess a comprehensive view of service availability, access, and quality (Table 1).

Table 1 Details of study sites and concerned health care delivery			
District	Area	Categories	Concern health care delivery
Mahottari	Jaleswor	Municipality	District Provincial hospital District Health Office (DHO) Municipality Health Division NGOs- Chautari Nepal, Ratauli Yuwa Club, Sparsh Nepal, Mahottari plus advice service centre INGOs – Red Cross Society
	Mathihani	Municipality	Health post(HP), Urban Health Care (UHC)
	Gaushala	Municipality	Primary Health Care (PHC)
	Pipra	Rural Municipality	Female Community Health Volunteer (FCHV)
Dhanusha	Janakpur	Sub -Metropolitan	Provincial hospital
	Mithila	Municipality	Lalgadh Leprosy Hospital and service centre

Procedure and visits

The study involved attending meetings, clinical rounds, training courses, and health camps, evaluating secondary data from various departments, and assessing infrastructure and management aspects using criteria like adequacy, appropriateness, effectiveness, restrictions, and weaknesses. Interviews were conducted with various stakeholders, including District Public Health Officers, Medical Superintendents, and NGOs. Tools and techniques used for the study is summarised in Table 2.

Table 2 Tools and techniques used	
Tools	Technique
Interview guidelines	Key informant interview
Observation Checklist	Observation
Record review format	Record review
Literature review format	Literature review

Findings and Discussion

The health care delivery system of Central Madhesh province can be classified into the following three categories: Traditional Health Care System, Modern Health Care System, and Supportive System (Figure-2).

1. Visits for the health care delivery system in the Mahottari district.

Data Collection

Data collected for this study were from primary as well as secondary sources. Primary data was collected from key informant interviews and observation whereas secondary data was collected from the Annual health report, records from the DHO, Records of HP, PHC, UHC, NGOs, Medical units of respective municipalities, and from the different national Journals.

Ethical Consideration

We submitted the official letters from Janaki Medical College Teaching Hospital to the respective institutions. Before approaching any personnel for an interview or discussion, we explained the objectives of the study. Informed verbal consent was taken from every patient or patient before being interviewed. Confidentiality was maintained as far as possible. There was no potential harm to the participants

A. District Health Office

The District Health Office in Mahottari is a vital part of Mahottari's healthcare system, providing preventative and promotional health services. It serves as an advisory link between federal, provincial, and municipal administrations, working with municipalities and rural municipalities to provide health services. Despite operational constraints, the office provides critical tools

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and works closely with local governments on preventative health projects. It also conducts outreach clinics and health education campaigns. Despite

operational constraints, the office remains pivotal in ensuring accessible and comprehensive healthcare services.

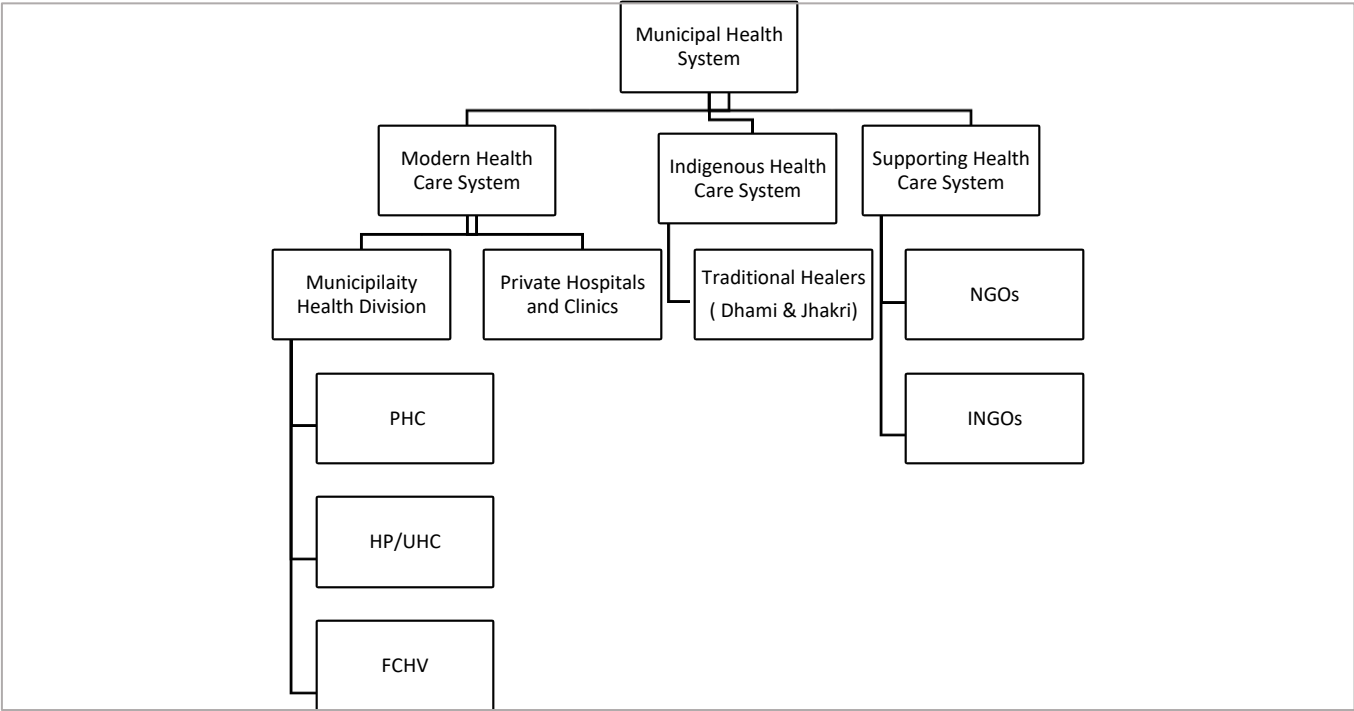


Figure 2| Organogram of Municipal Health Care System

B. Primary Health Care Centre:

The Gaushala Primary Health Care Centre (PHC) in Mahottari aims to provide essential health services to individuals and communities, focusing on health promotion, prevention, and basic medical care. Services include emergency care, maternal and child health services, contraception, abortion, wound care, free drug services, diagnostic services, and a DOTS centre. Complex cases are referred to the provincial hospital.

C. Health Post

The Matihani Health Post aims to improve community health outcomes and quality of life by providing comprehensive, accessible, and sustainable healthcare services. Upgraded from sub-health post status, it serves Matihani wards 6, 7, and 8 by offering OPD, DOTS, nutrition, family planning, vaccination programs, laboratory services, and maternity services. The post also participates in school awareness campaigns to teach children about health issues. Operating in three buildings, it includes an outpatient department, laboratory, birth centre, and administrative offices.

D. Urban Health Care

The Khaira Urban Health Care Centre in Nepal, established in 2017, provides essential healthcare services to the local community. It offers free outpatient care, immunizations, maternal and child care, consultations, basic diagnostics, health promotion, minor procedures, and referrals to higher-level facilities. The centre also promotes maternal health through home visits, essential supplement distribution, and

mental health screenings and counselling. Managed by a Health Assistant, it aims to overcome obstacles and adapt to changing healthcare needs.

D. FCHV

Female Community Health Volunteers (FCHVs) in Nepal promote healthy behaviours, distribute family planning materials, offer health education, and act as a liaison between communities and healthcare facilities. Their activities in Pipra Rural Municipality- Mahottari, Nepal include meetings, immunizations, monthly reporting, and data submission to HMIS. The FCHV program is a cornerstone of Nepal's community health, empowering local women as key public health promoters.

E. NGOs supporting Health Care delivery in Mahottari District:

E1: Ratauli Yuwa Club:

Established in 2047, this non-profit organization aims to end discrimination and social practices, promoting inclusion and sustainable development in deprived communities. It works in health, nutrition, education, child protection, social justice, women empowerment, disability, disaster response, and humanitarian aid.

E2: Mahottari Plus Advice Service Centre:

M+ASC is a Nepali NGO established in 2065 to combat HIV/AIDS cases in Mahottari District. It offers services such as community-led testing, temporary shelter for positive cases, treatment access, psychosocial counselling, basic health services like first aid, financial aid for medicines, safe sex practices, HIV testing, counselling, and linking cases to anti-retroviral therapy.

The organization's operations began in 2071 B.S. and aims to improve the quality of life for PLHA in Nepal.

E3: Chautari Nepal:

Chautari Nepal aims to provide accessible and culturally competent healthcare services for people with HIV/AIDS and mental health conditions, especially LGBTQ+ individuals. The organization focuses on identifying HIV-positive patients through screening, motivating them to consider antiretroviral therapy, educating high-risk individuals about precautions to prevent transmission, and ensuring compliance with medication by HIV-positive patients. If treatment effectiveness is not improving, the organization may change the treatment regimen.

E4: SPARSHA Nepal:

SPARSHA Nepal, a community-supported NGO, was established in 2012 and has branches in four districts. Its main branch is in Janakpur, and it primarily operates a Harm Reduction program aimed at preventing HIV/AIDS among drug users and increasing life expectancy for those living with HIV.

E4: Nepal Red Cross Society:

Nepal Red Cross Society, Mahottari branch, was established in 1965 AD and provides services during emergencies like earthquakes, floods, and fires. They handle initial response, rescue, relief, reconstruction, rehabilitation, ambulance services, and blood donation. This year, they conducted an emergency relief program in Mathihani following a fire.

2. Visits for the health Care Delivery System in Dhanusha District

A. Madhesh Institute of Health Sciences

With the mission to reduce suffering, disability, and poverty in Madhesh province by enhancing specialised health care, research and education, MIHS currently runs a 325 bedded hospital and planning to develop a 700 bedded hospital with all the necessary infrastructure and equipment. The health structure and human resources management have continually been a challenge and are not sufficient to provide adequate health services delivery within the context of changing the burden of disease, the growing advancement in health care technologies and also the increasing population in Madhesh province.

B. Lalghadh Leprosy Hospital and Service Centre

The hospital has a high patient flow, a dedicated team of 120 workers, and efficient operation despite financial constraints. It has international recognition and is located in a serene and accessible location. The hospital offers comprehensive treatment and participates in pandemic-related support through self-help groups. However, it relies on inconsistent donations and limited long-term funding. The hospital also lacks leprosy-

dedicated staff, has poor visibility, and has an outdated website.

Information system in health at the Government of Nepal

Health Management & Information System (HMIS):

It is designed to collect, store, organize, and transmit health-related information to aid decision-making and service delivery. It entails gathering information from health facilities about patient demographics, disease prevalence, service delivery, and resource utilisation. This data is recorded manually and stored in electronic health records and databases for convenient access. Health data recording and reporting are expedited using digital platforms such as District Health Information Software 2 (DHIS2) and Health Management Information System (HMIS), resulting in more efficient contact with higher authorities.

Logistics Management & Information System (LMIS):

It focuses on logistics management, namely the acquisition, storage, and distribution of medical supplies and equipment to ensure their availability where and when needed. It comprises inventory management, procurement planning, and supply chain monitoring data collection & Reporting with LMIS.

3. Activities Performed

- A. Epidemiological Study
- B. Critical Analysis
- C. Five-year plan

A. Epidemiological study

An epidemiological study was conducted at the Nutrition Rehabilitation Centre (NRC) of Madhesh Institute of Health Sciences (MIHS) on Malnutrition. Our study population was 823 children admitted at NRC, MIHS over five years. The study found that malnutrition cases were most common in the Dhanusha district followed by Mahottari during Fiscal year 2079/80 B.S., with the highest number reported in the male population aged 0-30 months.

B. Critical Analysis

We carried out a critical analysis of the emergency department of Provincial Hospital at Jaleshwar Municipality of Mahottari District.

The SWOT analysis was carried out in the input, process, and output aspects of the emergency service at Mahottari provincial hospital under the following headings:

1. Physical Infrastructure
2. Budgeting and Finance
3. Logistics
4. Human resources
5. Planning, Coordination, Supervision, and Monitoring
6. Recording and Reporting
7. Service delivery

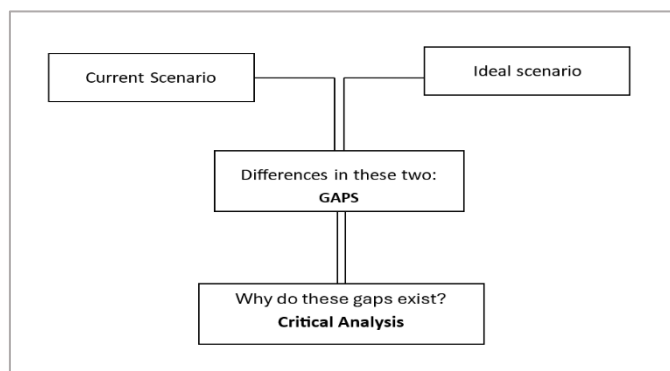


Figure 3 | Conceptual Framework for Critical Analysis

Five-year Plan

A five-year plan on safe motherhood at Lalgadh Leprosy Hospital and Service Centre in Mithila municipality aims to improve women's health and reduce maternal and newborn morbidity and mortality. The plan focuses on improving institutional delivery and attendance by Skilled Birth Attendants (SBAs) in the municipality. Effective implementation of the plan will increase the performance status of safe motherhood, boost maternal and neonatal health and ensure zero maternal and newborn mortality rates in the municipality.

Table 3 represents the matrix for critical analysis of the emergency service at provincial hospital, Jaleshwar, Mahottari

Figure 3 | SWOT Analysis of Emergency Service at Provincial Hospital, Jaleshwar, Mahottari

Strengths	Weaknesses
<ul style="list-style-type: none"> • Wide coverage • Patient experience shorter wait times and a cost-effective. • Medicines and logistics were adequate for emergency management and care. • Record keeping according to HMIS tools. • Well-trained medical personnel round-the-clock emergency services. • Red- (1 bed), yellow (2 beds) green (4 beds) zones are present separately following the triage policy 	<ul style="list-style-type: none"> • Insufficient emergency response mechanisms, • Absence of an emergency operating room leads to an increased number of referral cases. • Weak referral system • Minimal financial support from the government and municipality in terms of money and workforce shortages. • Very difficult to analyze the trend of certain diseases due to incomplete recording. • Blue and black zones are not present in the emergency department (triage system).
Opportunities	Threats
<ul style="list-style-type: none"> • Strengthening partner trust might increase support from donor agencies. • The emergency department can coordinate with institutions like local Red Cross societies which makes it easier to manage cases during mass casualties. 	<ul style="list-style-type: none"> • Recruitment of unqualified manpower due to political influence can arise. • Hindrance in service delivery due to hesitance of new consultants to work in the hospital (at times of replacement).

Study identified that the health care delivery system of central Madhesh has various obstacles that limit its ability to deliver high-quality care to its residents. Limited resources, such as financing, medical supplies, and skilled personnel, along with ageing infrastructure and logistical challenges, present substantial constraints to successful service delivery. The healthcare system is distinguished by its high accessibility, wide population coverage, short wait times, and low cost. Short consultation times and limited resources are among the system's drawbacks. Concerns regarding the quality of healthcare are another critical problem that the federal government must address in the coming years. Effective HMIS and LMIS deployment can result in enhanced health service delivery, better resource management, and more informed decision-making, ultimately improving the health system's overall performance.

Limitations of the study

This study was conducted only in Mahottari and Dhanusha districts of Madhesh Province which lacks its generatability. We are unable to discuss details about the 5-year plan and epidemiological Study in details due to space restrictions.

Conclusion and Recommendations

The health delivery system has indeed undergone a massive shift after the federalisation of the state. The health resources of Nepal are still dependent on foreign aid, with the national budget still not well distributed to the health sector. The possibilities of a functioning and capable health system have been largely limited by human resources, their appointment, payroll, and safety. The healthcare systems are either under-equipped or have few or no skilled operators to run the available equipment. The political influence over the health system is also questionable, with the distribution

of essential resources like essential drugs, vaccines and diagnostic tools being under-regulated or unregulated. With the current federalisation of the health system, opportunities are also available, with doors now open to local group mobilisations and faster distribution of resources. With each district hospital being converted into a provincial hospital, with collaborative working

structures, these hospitals would be able to provide quality health services to their public. The introduction of health insurance has assisted in providing inexpensive access to health to the public, but the government and public both should make a substantial contribution regarding budget, resource utilization and monitoring of health services.

ADDITIONAL INFORMATION AND DECLARATIONS

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**Health Service Management (HSM) Study Group (15th MBBS-JMCTH)			
Deepak Jha	Janmojay Kumar Mandal	MD Nasir	
Nitesh Kumar Yadav	Kashish Kumari	Melinda Nepali	Osaid Hussain
Hasim Reja	Kul Bahadur Chhantyal	Moashir Ali	Prabhat Pandit
Hemant kumar Gupta	Lila Mani Acharya	Nirmal Kumar	Prabhusha Shrestha
Hemant Tamang	Manish Karn	Niyati Mandal	Pratik Shyangbo
Himal Saru	Manish Kumar Yadav	Om Pratap Kurmi	Prativa Pajiyar

Conflict of interest: The authors declare no conflict of interest.

Data Availability: Data will be available upon request to corresponding authors after valid reason.

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