Status of Health Financing on Cardiovascular Diseases in Nepal -Findings from a National Needs Assessment

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ABSTRACT

Background

Health financing is a major domain of health system building blocks. With the epidemiological transition and increasing trend of Cardiovascular diseases (CVDs), it is crucial to assess the status of health financing to address the gap of prevention, control, and treatment of CVDs in Nepal.

Objective

This paper aims to assess the situation of healthcare financing on Cardiovascular diseases in Nepal. We framed three key functions of health system financing: (a) revenue collection, (b) pooling of resources, and (c) purchasing of services for this study.

Method

We used sequential explanatory mixed-method research design. We conducted desk reviews, analyzed secondary data on health financing followed by Key-Informant Interviews with five relevant policymakers and experts between February and September 2019. We obtained the Ethical clearance from the Nepal Health Research Council.

Result

Out of pocket (OOP) expenditure remains the highest source (52%) of total health care expenditure in Nepal, and two third of it is made for NCDs. Out of total current health expenditure on outpatient and inpatient services for fiscal year 2015/16, only 7% of total NCDs was spent on CVDs. Hypertension is the third-most utilized insurance service out of 36 CVD related services provided by the Health Insurance Board. The existing health related social service schemes covers the high costs associated with treatment, and streamlining these services including provider payment mechanisms with the health insurance program could open up opportunities to expand quality CVD services and make it accessible to the marginalized population.

Conclusion

Health Financing is the integral part of the health system. With the rising burden of cardiovascular diseases and its impact on impoverishment due to high OOP, integrated health care services, budget specification based on the evidence-based burden of disease such as CVD needs to be prioritized by the government.

KEY WORDS

Cardiovascular disease, Healthcare Financing, Needs Assessment, Nepal

INTRODUCTION

Deaths due to communicable diseases and maternal causes are decreasing with concurrent rise on deaths and disability due to non-communicable diseases (NCD) in Nepal.[1] Diabetes, Cardiovascular Diseases (CVDs), Chronic Obstructive Pulmonary Disease (COPD), and Cancer are the leading NCDs causing deaths (66%).[2] Around 27% of total deaths in Nepal in 2017 was attributed to CVDs. Moreover, the burden of CVD is higher for people 45 years and above, and as life expectancy for Nepali is increasing we can expect to see a soaring impact of CVD in Nepali population.[1] However, the current health system of Nepal is not prepared for this epidemiological shift, with low readiness for cardiovascular health services.[3] The increasing burden of NCDs has caused an economic burden globally with an estimated 75% in loss of global GDP in 2010 with large share of increase from cardiovascular disease.[2-4] It is also costly at individual level with one month combination treatment for coronary heart disease costing approximately 6.1 days' wages in Nepal.[4] The burden necessitates the government to plan for efficient and equitable distribution of funds to curb the increasing trend of CVDs.[4] It is widely understood that a good health system financing strategy has its significant impact on decreasing CVDs related morbidity and mortality.[2] The strategies support revenue generation by public and private financing agents through risk pooling, creating appropriate incentives for quality health services provision, and allocation of resources to the most effective, efficient and equitable health interventions and services.[4] However, Nepalese federal health care system faces significant challenges for health financing and investments along with a disparity in budgetary allocation and distribution at district and local level.[5,6] In addition, poor documentation of health financing has further created the gap to rationally allocate resources.[2] The rising burden of CVDs further creates urgency to have scientific evidence on health financing for CVDs.[2] Therefore we aimed to assess the situation of health financing on cardiovascular diseases in Nepal. We have framed the study by the three key functions of health system financing: (a) revenue collection, (b) pooling of resources and (c) purchasing of services.

METHODS

We used a sequential explanatory mixed method study design with QUANT-QUAL sequence to assess the current situation of financing for cardiovascular diseases in Nepal from February 2019 to September 2019. This mixed method study design served two purposes: 1) fill the information gap collected through quantitative method, and 2) triangulate information between sources. We adopted the USAID manual "Health System Assessment Approach: A How-To manual", Version 2.0 (HSAA) and drafted the protocol for need assessment of six health system building blocks. Those building blocks are namely- leadership and governance, health service delivery, human resources for health, health information system, medical products and health financing.[7] We identified four topical areas for health financing assessment; 1) amount and sources of financial resources, 2) Ministry of Health and Population budget and expenditure, 3) social health insurance, and 4) out-of-pocket payments. There are a total 22 indicators under four topical areas (supplement A). We formed a task force to steer and coordinate this needs assessment process.[8]

Desk Review

We conducted desk review to compile existing quantitative and qualitative data based on the indicators of health financing protocol. At first, we reviewed all the documents available online published in the last ten years.[9-12] In addition, we extracted hard copy documents from the Ministry of Health and Population (MoHP), Epidemiology and Diseases Control Division- NCD section, Health Insurance Board, Social Health Security section, and health budget reports and stored in a locked cabinet.

Key informant Interviews

We conducted five key informant interviews (KIIs) with various health financing experts in Nepal such as health policymakers, health economists, academicians and government representatives. We identified the key informants utilizing the existing networks. We contacted the key informants and conducted interviews in participants' preferred location and time in Nepali language using a semi-structured interview guide developed based on the HSAA manual.[7] We audio-recorded all the interviews which were done using a semi-structured interview guide.

We assigned a unique alphanumeric identity code to the audio interviews and stored them in secured google drive. The research team members transcribed the interviews in written form and identified codes on the transcripts. First, a research member developed a code book for all five interviews which contained the name of the code, description of the code and relevant examples. Second researcher independently coded all the interview transcripts. A third researcher used the codebook and interview transcripts of both coders, suggested agreement and disagreement with the codes and finalized the codebook for each interview. The inter-coder agreement rate for all the transcripts is 86.7%. The number of KII was five as information collected saturated after taking five KIIs.

Ethical Approval and Consent

Ethical Review Board (ERB) of Nepal Health Research Council (Registration number 176/2018) approved this study. Written informed consent was taken from all the participants. The anonymity of the participants was maintained when reporting the findings.

RESULTS

Amount and sources of financial resources

As reported in the National Health Accounts (NHA), Nepal's total Gross Domestic Product (GDP) in the fiscal year 2015/16 was NPR 2,248.7 billion, out of which 6.7% was spent as Total Health Expenditure (THE).[9] The per capita THE was NPR 5216 (USD 49). More than half of the expenditure was out-of-pocket (Table 1).

Table 1. Amount and sources of financial resources in fiscal year 2015/16[9]

Indicators		Remarks
Total health expenditure (THE) as % of Gross Domestic Product (GDP)	6.7%	Total GDP: NPR 2248.7 Billion THE: NPR 151.16 Billion
Per capita THE as an international dollar rate	49 USD	Per capita THE: NPR 5216 Exchange Rate (USD): 106.62
General government expenditure on health (GGHE) as % of total government expenditure	8.2%	General Government Expenditure: NPR 494.714 Billion GGHE: NPR 40.31 Billion
General government expenditure on (GGHE) health as % of total health expenditure	26.7%	THE: NPR 151.16 Billion GGHE: NPR 40.31 Billion
External resources for health as a % of total health spending	10.96%	Total Health Spending: NPR 151.16 Billion Expenditure on health through external resource (foreign countries): NPR 16.48 Billion
Out of Pocket expenditure as a % of total expenditure on health	51.88%	THE: NPR 151.16 Billion Out of pocket expenditure: 78.427 Billion

Source: National Health Accounts 2012/13 to 2015/16

Ministry of Health and Population Budget and Expenditure

The health sector budget has increased over the last four years from NPR 32.2 Billion in fiscal year 2014/15 to NPR 90.69 Billion in fiscal year 2020/21 (Table 2).

Table 2. Trend in allocation of health budget from total government budget[5,21]

Fiscal Year	Total Government Budget (NPR billion)	Health Sector Budget (NPR billion)	Health sector budget as a proportion of total government budget (Percentage)
2014/15	618.1	32.2	5.2
2015/16	819.5	37.2	4.5
2016/17	1,048.9	41.6	5.0
2017/18	1,279.0	46.9	3.7
2018/19	1,315.2	51.7	3.93
2019/20	1,530.0	68.8	4.5
2020/21	1,474	90.69	6.2

Source: Budget speech 2014/15- 2020/21[5] , budget analysis 2019[21]

The actual health expenditure is different from the allocated health budget, which is shown in the figure 1.

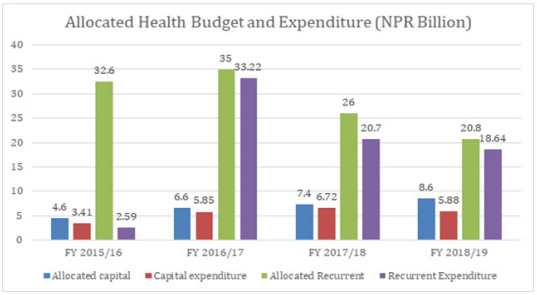

Figure 1. Allocated health budget and expenditure from 2014/15 to 2018/19 [NPR in Billion]

Source: MoHP and NHSSP (2018). Budget Analysis of Ministry of Health and Population FY 2018/19. Ministry of Health and Population and Nepal Health Sector Support Programme.[21]

Out of total 29.4 billion NPR on total government health budget for 2018/19, 20.8 billion (70.7%) was allocated to recurrent expenses, and 8.6 billion (29.3%) on capital expenses.[21]

Process of Ministry of Health and Population budget formulation

At the federal level, the Ministry of Health and Population prepares budget plans and submits to the National Planning Commission (Figure 2). The budget plan is prepared based on the Government's Annual Policy and Program, National Health Policy 2074 and periodic health plans at the MoHP. The National Planning Commission in coordination with the national fiscal commission and Ministry of Finance provides a budget ceiling for each line ministries, including the Ministry of Health and Population. This is followed by the compilation and submission of the revised budget from MoHP to the line ministry which is followed by finalization of the National budget by the MoF and presented at the parliament.

The Parliament deliberates on the proposed national budget and the minister of finance delivers the final budget speech on Jestha 15th (May 29th) of the same year. The new fiscal year starts from Shrawan 1st (July 17th) every year (Figure 2).[21] This timeline is directed by the Constitution of Nepal.

"The Constitution of Nepal has clearly mandated a date for budget presentation in the parliament- i.e. 15th of every Jestha (May 29th) and the budget execution begins from Shrawan 1 of the month (July 16th)." - Senior Policymaker, MoH.

Process of MOHP budget allocation

The District Treasury and Comptroller Office (DTCO), under the guidance of the Ministry of Finance releases the approved budget on the quarterly basis as per the Red Book.[21] The MoHP allocates the budget both cluster-wise and line-item wise. There are 17 clusters (general administration and support, curative services, homeopathy/Unani, Ayurveda, epidemic disease control,

Tuberculosis and Leprosy control, HIV/AIDS and STDs, drug management, laboratory service, oral and child health, maternal and child health, health education and training, health promotion, management information system/ survey/surveillance/research, free health programme, impoverished citizen treatment and health insurance) and 8 line-items (wages and salaries, support services, capacity building, programme activities, medicine purchases, grants to hospitals, capital constructions, and capital goods).[21]

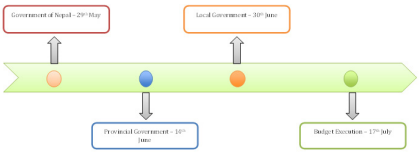

Figure 2. Flow chart of government health budget allocation mechanism[21]

Federal, provincial, and local government budget allocations for health in decentralized system

The new federal system of Nepal requires allocation of the budget at three levels: federal, province and local

At Federal Level: The MoHP allocates the budget to different entities. They directly support some national health institutions such as the Department of Health services, some academic institutions and national tertiary hospitals, and allocate conditional health grants to the province and local governments. In this fiscal year 2018/19, the MoHP provided NPR. 4.18 billion as a conditional grant to provincial governments and NPR 18.2 to Local level as mentioned in the Red Book.[21]

At Provincial Level: Health Division under the Ministry of Social Development (MOSD) in coordination with Provincial Policy and Planning Commission and Ministry of Economic Affairs and Planning plans and budgets the health activities on their own. The sources for their revenue are: revenue transfer (equalization, conditional grant, special, and matching funds from the federal government), and their internal revenue at the province. For the conditional grant, the provincial government announces the budget details by 31st Jestha (14th June). There is no separate Ministry of Health and Population (MOHP) at Provincial level, and the function is within the MoSD which prepares social sector budgets including that for the health sector. The budget is approved by the provincial parliament and budget execution begins from 1st Shrawan (16th July).[21]

At Local Level: Local Governments have the authority to plan and budget their health activities, using their own resources and conditional grants from federal and provincial governments. They receive conditional grants from the federal government through the Red Book, the budget allocated by their provincial government, and also their own local revenue. The municipal level health section receives priority programs from each ward, prioritizes the programs and projects the budget needs, based on the community demand and experts' consultations. The local municipal assembly then finalises their budget by 15th Ashad (30th June) and budget execution starts from 1st Shrawan (16th July).[21]

"There are three levels of government: Federal, Province and Local. The authority to make a budget has now been devolved to the local level. They can make their own budget through municipal assemblies." - KII, Senior Policymaker, MoHP

Percentage of government health budget spent on outpatient/inpatient department

The total health expenditure on CVDs in outpatient and inpatient departments varied from year to year. The most recent National Health Account published report has only been reported until the year 2015/16. Spending on CVDs in the year 2015/16 was less as compared to the year 2014/15 (Table 3).

Table 3. Current health expenditure on outpatient and inpatient CVD services (NPR Billion)[9]

Fiscal Year	Current health expenditure on outpatient and inpatient services	Expenditure on NCD outpatient and inpatient services	Expenditure on CVD outpatient and inpatient services
2014/15	132.4798	31.0638 (23.4%)	3.216
2015/16	141.4624	38.4965 (27.2%)	2. 886

Budget for NCDs and CVDs: In the fiscal year 2018/19 the government allocated NPR 40.4 million for NCDs at federal level, 13.85 million for each province, and 0.07 million for each municipal unit in 30 districts.[22] The detail of the budget allocation is summarized in the table 4.

"If we talk about the NCD budget in comparison to the disease burden- it is very low at about less than 5%. But, it is still satisfactory, because in the past there was none. And, now we have reached 5% and in the future, if we are able to demonstrate the need in this sector to the relevant agencies, make them aware, then slowly we can increase the budget and expand the program throughout the country."- KII, NCD Section, MoHP

Local-level spending authority and institutional capacity

The Constitution of Nepal has given authority to the local governments to plan and budget their health activities. The local government budget included in the Red Book does not need any additional authorisation for spending. Local governments can make laws within their fiscal jurisdictions, devise plans and policies, and prepare annual budgets and implement them. They have authority to impose taxes, establish a local treasury, also present and approve the annual estimates of revenue and expenditure through their municipal assemblies. However, delays on assemblies can affect the timely transfer of funds to health facilities.

Table 4. MoHP allocation of budget for NCDs at provincial and local levels for 2018/19[22,21]

Level	Allocated for	Allocated Budget (Million NRs)
Federal level	Epidemiological and Disease Control Division (EDCD) - Equipment procurement - Development of guidelines and manuals - Integrated occupational health program - Master Training of Trainers for PEN	 25.0 1.0 1.0 1.0
	National Health Training Center (NHTC)	5.5
	National health education information and communication center (NHEICC)	6.9
Provincial level (in each province)	Equipment procurement	5.0
	Training for NCDs and PEN intervention	5.35
	Training of Trainers	3.5
Municipal level (in each palika)	Awareness raising on NCDs and PEN intervention	0.07
Federal Level	Equipments for Cardiac, Thoracic and Vascular	405
Federal Level	Free Health Care/Treatment for Heart Treatment	352

There is a financial management improvement plan in place to reduce fiduciary risk, improve the accounting and the reporting system for finance. There is an online mechanism such as Transaction Accounting and Budget Control System (TABUCS), that aligns with LMBIS/eWABP for reporting. The progress reports are prepared within 45 days of the end of the trimester.[23] The TABUCS tracks both the budget and expenditure channeled to MoHP subunits. Similarly, the Provincial Line Ministry Budget and Information System (PLMBIS) tracks the budget but there is no mechanism to track expenditure. At LG level, SuTRA tracks both budget and expenditure and budget entry at SuTRA has been made mandatory since 2019/20.[21] Both Provincial Governments and Local Governments prepare reports as recommended by OAG. However, manual reporting is still under practice at PG level with no electronic system for reporting of budgeting and expenditure.[14] Financial and social audits are conducted at the facility level on a regular basis every year. The Nepal Health Facilities Survey found that almost all Hospitals (Zonal and District level) and some local centers (Primary Health Care Center 70%, Health Post 47%) conduct auditing every year.[23]

"We are creating an online mechanism for auditing. We are not able to do it up to the local level at this point. But, we are planning to prepare single software (or inter-operable multiple softwares) to track spending throughout the country" -Senior Policymaker, MoHP

Contracting mechanisms between the MOHP and public and private Health service providers

Performance based disbursement is done under Health Coordination Division, and Human Resource and Management Division (HRFMD). Performance based contracts were signed and 80% of facilities have received grants by 2020/21.[23]

Private sectors providing CVDs related health services as per Bipanna Nagarik Kosh are reimbursed through Department of Health Services. There are specific program contracts between private providers with the government.

"But, these days- what we have been strict on how a hospital is providing services (using government's grant) - if it is a free service that is benefiting the public- we will assess who is receiving what services (to ensure proper use of the grant). So that we not only look at funding gap to give grants, but also its proper use" -Senior Policymaker, MoHP

National Health Insurance

Population coverage of the health insurance schemes for cardiovascular diseases

Health Insurance Board of Nepal was established under the MoHP under health insurance act 2074 and Health insurance board regulation 2075.[24] There are a total of 3,705,254 people from 55 districts enrolled in the National health insurance program till 7 March, 2021.[25] With highest enrollment (11.6%) from Jumla district alone. There are a total 316 health institutions throughout the country that have registered with the national health insurance. They provide health services for a fixed rate provided by the insurance board.[15] Hypertension is the third-most morbidity for health insurance use.[25]

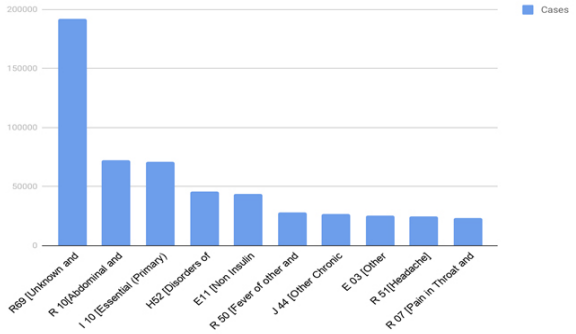

Figure 3. Top 10 ICD cases utilizing health insurance services[25]

Services covered by Health Insurance

Diagnostic services such as inpatient, outpatient and emergency consultations, laboratory tests blood, urine, sugar tests, ECGs are largely covered by insurance. There are lists of medicines recommended by the Social Health Security Development Committee (SHSDC) that are provided free of cost. There are altogether 36 CVD related services covered by the insurance (Supplementary Table B).[15]

Funding mechanisms and sustainability of Health Insurance

A household (up to five members) pays NPR. 3,500 as an annual premium fee, for which health services upto Rs 100,000 is insured. For each additional member, with NPR 700 extra premium cost, an additional NPR 20,000 service is covered. For elderly people more than 70 years of age 100% premium is paid by the local government, with the coverage of up to NPR 200,000 in health services. There is also a provision of 100% subsidy for the vulnerable population- ultra poor, those with severe disability, PLHIV, MDR TB, Leprosy, and 50% subsidy for Female Community Health Volunteers (FCHVs).[26] The newborn born to an insured mother is automatically included in health insurance services, without additional cost, for the insurance period.

The cost at point of service is cashless, and there is zero co-payment. During the FY 2016/17, the Social Health Security Development Committee paid a total of Rs. 18.4 million in services for the insured.[16] The government is pooling funds to the health insurance committee at this initial phase and sharing the risk. Despite significant expansion of the program across the country, problems such as provider payment mechanism and quality of services at the access of all are yet to be in priority.

"At this initial phase, the government's grant is sufficient for the health insurance to cover the cost and we don't have to use premium collected. But, going forward, premium collected will determine our sustainability. " Representative- Health Insurance Board

"If we just look at the contribution versus reimbursement trend, reimbursement is higher. If we look at it that way- we are at a loss. But, it is planned that way- for Rs. 3500 premium, people get service for Rs. 100,000. This is a service-oriented program, not profit oriented. Thus we should not analyse it that way" -Representative -Health Insurance Board.

Government allocated NPR 6 Billion for a health insurance program in the Fiscal Year 2020/21 budget speech.[5]

Provider payment mechanism under Health Insurance

Health care institutions are paid on a per service basis on a pre-decided rate by the health insurance board. The reimbursement is made within 15 days upon the evaluation of the claims submitted by the service providers. The process is fully online. The reimbursement of services and the quality of health insurance implementation is monitored by the Social Health Security Development Committee, chaired by the secretary of MoHP.[16]

Institutional capacity of Health Insurance organizations

Insurance board offices are available in every province and district. The insurance board conducts regularcapacity building training for all the agents. Since the national health insurance program is in its early phase in Nepal the government is also receiving certain technical assistance from external development partners.[27]

"To operate our program, we have opened offices in provinces, and they have their own networks in the districts. When we give training from here, our friends (colleagues) at the provincial office also give training. And, at last, we have one insurance agent in every ward that enrolls clients." -Representative, Health Insurance Board

"Technical support on information technology is provided mainly by GIZ. Little support is provided by KOICA and Save the Children also. These are the main three organizations (external development partners) working on this (capacity building)." -Representative- Health Insurance Board

Out of pocket payments

Out of pocket (OOP) expenditure remains the highest source (52% of THE) for health care expenditure in Nepal.[9] The total spending for the non-communicable disease is 30.8% of total household OOPs.[9]

One of the important goals of the Health insurance program is to decrease out of pocket expenditure.

"Health services are getting expensive recently, thus this health insurance program aims to reduce out of pocket expenses for the public in addition to increasing accessibility and quality" -Representative, Health Insurance Board

Policies for user fee payments in the public sector for cardiovascular diseases

Nepal has a number of policies (table 5) to protect the citizens from high expenses on health care. Through the Bipanna Nagarik scheme alone, 4280 patients received subsidies (benefits) for the treatment of their heart disease in the year 2074/75.[10] All the patients under 15 years of age receive free valve replacement surgery for Rheumatic Heart Disease. Policymakers agree that financial protection for health is a valuable indicator for a successful health system, but should be monitored closely so that needy people are covered. A good coverage of health insurance against CVD expenses with sufficient and timely reimbursement awareness at local level is essential to reduce user fee payments.[28]

"One lakh for treatment cost (through health insurance) is a good relief for families. That's why if we can tie up our program with National Health Insurance, we believe it will be helpful to address NCDs as well"- Representative, NCD and mental health section, EDCD

"Despite improvements in health outcomes, increased life expectancy and reduced DALY -if health protection is not there i.e. out of pocket is increasing, due to which poverty is also increasing- then it is considered as a weakness of the health system." -Academician (Health Economist)

"We are saying these services are for the poor, but who gets it? Usually, the rich ones get to utilize these services,

Table 5. Policies and provisions on user fee payments for Cardiovascular Diseases

Policies	Provisions
Constitution of Nepal, 2015, Part -3, Article 35	"It is a constitutional right of every Nepali citizen to have free basic health care from the State."
National Health Policy 2019	"Free basic health care services shall be provided from all levels of health facilities, and health insurance programs will be strengthened to cover services beyond basic health packages." "A national health financing strategy will be developed and implemented with aims to increase equity in health service access, reduce out of pocket expenditure and allocate resources based on cost effectiveness."
Health Insurance Act 2017	- An insured patient is not charged any user fee, co-pay, deductible nor any minimum out of pocket expenses for the service received, given the patient has not exceeded the ceiling amount of benefit (Rs. 1 lakh) for the year. - Service providers should explain the cost of the service before providing the service. - 100% subsidy for the vulnerable population- ultra poor, those with severe disability, PLHIV, MDR TB, Leprosy, and 50% subsidy for Female Community Health Volunteers (FCHVs).
Basic Health Services 2075	Basic health services are free to all citizens from government health facilities. Basic health services includes risk identification, initial examination and management, lifestyle counselling and referral for pre-hypertension, uncomplicated hypertension, impaired blood glucose and uncomplicated diabetes.
Bipanna Nagarik Upachar Kosh Nirdesika 2075 (Medical treatment of deprived citizens)	Treatment up to Rs. 100,000 is provided free of cost to impoverished patients needing heart surgery, pacemaker or stent placement, ablation, treatment of heart failure and valvular disease.
MoHP Directives	Free valve replacement surgery to all patients with Rheumatic Heart Disease for under 15 years

because poor people do not have access. If there is no access (to the services), how can poor utilize it."- Academician (Health Economist)

Therefore, user fee payment schemes for CVDs of the government are highly appreciable but its utilization group is to be regulated and focused on needy people. Service utilization concentration at the rich diverts the national goals of lowering the treatment cost for CVDs among poor and marginalized people.

Allocation of user fee revenues

The conditional grant received from the federal and provincial government covers the cost to operate and manage the center, including payment for health personnel. Local health facility operation management committee (HFOMC) manages and top-up with the additional revenue, if any, generated by the facility, including revenue collected from user fees. The committee is a legal entity, formed locally in the municipality and operates under the HFOMC guideline prepared by MoHP.[29] The committee has the authority to make financial decisions to manage those funds to ensure and improve service quality from that facility, which may include additional equipment installation, service expansion, hiring additional staff or purchasing medicines.

Informal user fees in the public sector

Informal user fees exist in some way in the country. Hidden payment (bribes) to receive better care, avoiding long queues or the lack of free of cost essential medicines in health centers that triggers payment for the medication leads to informal payment is found in literature and is widely held opinion among the public.[30-32] A study to understand the informal user fees in CVD is recommended.

DISCUSSION

This study has assessed the situation of healthcare financing on Cardiovascular diseases in Nepal in terms of three key functions of health system financing: (a) revenue collection, (b) pooling of resources, and (c) purchasing of services for this study. We have presented the SWOT analysis of the status of health financing for cardiovascular diseases in Table 6. Nepal is both in economical as well as epidemiological transition. Recently in 2020, the country moved from a low income country to a lower middle income country status with the GNI per capita of 1,090 USD.[33] In the health sector, the country is witnessing the rising burden of NCDs including cardiovascular diseases. As the country marches towards achieving the agenda of UHC, there is an urgent need to reallocate and increase resources to address the rising burden of NCDs. To increase the access to the service to improve the poor service coverage and reduction in out-of-pocket spending, effective risk pooling, appropriate incentives for quality services, effective, efficient and equitable interventions with proper resource allocation are few strategies to re-orient the health system towards chronic diseases.[7] The funding sources includes the social health insurance, state revenue, introducing the excise taxes on unhealthy products, improving tax compliance and engagement with private sectors.[5,6] With the increase in the national budget over the years we found that the health sector budget has also increased over the past years. The total national budget for the fiscal year 2020/21 is less as compared to the budget from the last fiscal year, but the budget allocation for health is the highest in the year 2020/21. This could be due to the COVID-19 emergency in the country.[34] The COVID-19 illness and death is more associated with chronic diseases such as CVDs, diabetes.[35,36] There has been increasing focus with allocation of funds for NCDs and CVDs recently with the recent establishment of separate NCD and Mental Health

Table 6. SWOT Analysis of the status of health financing on cardiovascular diseases in Nepal-findings

Variables	Strengths	Weakness	Opportunities	Threats
Amount and sources of financial resources	Out of total health expenditure, the government share of expenditure is increasing while that from external resources is decreasing compared to previous year.	More than 50% of total health expenditure still comes from out of pocket expenditure of the public.	The government aims to reduce the share of external development assistance and increase the share of the government's fund for the nation's health expenditure.	In-country revenue is not sufficient to cover the national budget for health.
Ministry of Health Budget and Expenditure	Delegation of authority of budget planning and execution at provincial and municipal level. Constitutionally fixed date by which budget is approved and goes into execution for the next fiscal year. National health account is regularly updated and serves as a health financing analysis tool in Nepal.	There are limited health economists in Nepal. There hasn't been recent evidence based program prioritization exercise at Federal level Huge amount of budget is allocated for curative services compared to preventive and promotive services.	Digitization of accounting in health	Limited capacity at a provincial and local level for health financing related decision making. Cost per capita, cost-effectiveness, return on investment and other economic analyses are not sufficient for resource allocation decisions
Health Insurance	No deductible and copayment from patients. Government is also a contributor to health insurance funds. Poor,elderly,diseases, differently abled have subsidized or free health insurance. Major tertiary hospitals in Nepal enrolled in health insurance programs. Insurance covers most of the NCDs and CVDs.	Delay in meeting the target of reaching all districts by last year. Difficult to pull up morbidity statistics from insurance claims because of non-compliance of clinicians to denote diagnosis with ICD codes.	Planning to hire experts through the public service commission directly for health insurance (current staff are deputed from other departments). Growing interest of private providers to enroll their institution in health insurance. Different financing schemes (eg. Bipanna Kosh, free treatment for some diseases, etc.) exists parallelly with health insurance	Success of health insurance programs depends on people's satisfaction with the services they receive at the health center. But, the health insurance board has very limited control over health facilities' care quality.
Out of pocket payments	Essential health services are free in government health centers. Heart valve replacement surgery is free. Elderly (>70) and children (<14) get free heart treatment in specified government hospitals. Financial support to the poor for treatment of 8 diseases including cardiovascular disease through a national fund (Bipanna Nagarik Upachar Kosh).	More than 50% of total health expenditure still comes from out of pocket expenditure of the public. Fragmented social security schemes that needs streamlining to effectively reach the people	There is a Social Security section within MOHP to protect poor and vulnerable populations from impoverishment due to health expenses.	Classification of "poor" is still not well defined.

section under EDCD, MoHP.[22,37] However, considering the DALYs and its impoverishment impact (0.25%), investment on NCDs is very less which warrants urgent action.[1,37,38] Furthermore, cluster-wise allocation of health budgets are limited for NCDs including CVDs and mostly the budget is allocated at federal level for the curative services.[21] Even when the funds are allocated, there is a mismatch between the allocated budget and the expenditure on health. There are schemes and provisions for free or subsidized payment for CVDs, but out-of-pocket expenses are still as high. To tackle this problem, GoN has started a social health insurance program where the insured get cashless services and there is zero copayment system. This has assisted in reducing the OOP of the individuals with NCDs and CVDs. However, the maximum amount insurance can cover is only NRs. one lakh, which may not help much in reducing impoverishment due to medical expenditure.[39] A provision of managing basic CVD services at the primary health center with a proper referral system can help reduce higher service cost. Reducing delays in transferring the funds to healthcare centers can encourage higher participation of health centers in the insurance program.[40,41] Addition of the services in the package and ensuring medicine availability can encourage the enrollment of the individuals to the insurance program.[7] Apart from health insurance there are additional programs available to cover CVD costs, such as direct payment for the valve replacement as a part of free heart treatment which is only available in the capital city Kathmandu. There is a need to decentralize the specialist services in the country and at the same

time streamline the health social security service with the health insurance program. To ensure protection of the poor and underserved population, there needs to be a clear definition for identifying people living in poverty.[8] A periodic health insurance sustainability check, economic evaluation and analysis of current curative and preventive interventions against CVDs, and strengthening reaching unreached capacity at local level with equitable allocation of resources for CVDs are strongly recommended.

The findings of KIIs suggested that the policymakers are willing to strengthen action to remove financial barriers faced by vulnerable groups, especially the poor and the marginalized. The budget formulation process has changed with the new government federal structural system. Unlike in the past, the local government is given the authority for the budget formulation, decision and implementation of plans. Therefore, the government budget for NCDs is now available for all three tiers of Nepal Health system, however, budget specification based on the evidence-based burden of disease still needs to be prioritized by the government. Apart from the government budgeting and spending, Nepal government MoHP closely works with NGOs including the EDPs, however, there exists a gap on financial support from external partners to tackle the CVD upsurge. A health financing mechanism targeted for current burden faced by those population is yet to be formulated in Nepal.[42]

This CVD focused health financing is first of its kind in Nepal. We used a sequential explanatory mixed method study design with QUANT-QUAL sequence and gathered information from desk review and the key informant interviews. We have explored gaps of cardiovascular financing through SWOT analysis. The main limitation of this study is the lack of primary data that can potentially provide strong evidence. The information gathered through KIIs were from the federal government and requires further information from the provincial and local governments. In addition, information from the patient's perspective would also add value to the study.

CONCLUSION

Health Financing is the integral part of the health system. With the rising burden of cardiovascular diseases and the high out of pocket expenditure and its impact on impoverishment, it is of utmost importance to have integrated health care services including CVDs and good financing to tackle the burden in the country.

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