A National Equity Initiative to Address Noncommunicable Diseases and Injuries: Findings and Recommendation from the Nepal NCDI Poverty Commission

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ABSTRACT

We aimed to assess the burden of NCDIs across socioeconomic groups, their economic impact, existing health service readiness and availability, current policy frameworks and national investment, and planned programmatic initiatives in Nepal through a comprehensive literature review. Secondary data from Global Burden of Disease estimates from GBD 2015 and National Living Standard Survey 2011 were used to estimate the burden of NCDI and present the relationship of NCDI burden with socioeconomic status.

The Commission used these data to define priority NCDI conditions and recommend potential cost-effective, poverty-averting, and equity-promoting health system interventions. NCDIs disproportionately affect the health and well-being of poorer populations in Nepal and cause significant impoverishment.

The Commission found a high diversity of NCDIs in Nepal, with approximately 60% of the morbidity and mortality caused by NCDIs without primary quantified behavioral or metabolic risk factors, and nearly half of all NCDI-related DALYs occurring in Nepalese younger than 40 years. The Commission prioritized an expanded set of twenty-five NCDI conditions and recommended introduction or scale-up of twenty-three evidence-based health sector interventions. Implementation of these interventions would avert an estimated 9680 premature deaths per annum by 2030 and would cost approximately $8.76 per capita. The Commission modelled potential financing mechanisms, including increased excise taxation on tobacco, alcohol, and sugar-sweetened beverages, which would provide significant revenue for NCDI-related expenditures. Overall, the Commission's conclusions are expected to be a valuable contribution to equitable NCDI planning in Nepal and similar resource-constrained settings globally.

KEY WORDS

NCDI Poverty Commission, Noncommunicable diseases and injuries

INTRODUCTION

In Nepal, Non-communicable diseases and injuries (NCDIs) are the leading cause of death, having surpassed communicable diseases, maternal and neonatal deaths, and nutritional diseases.[1] In studies from demographic surveillance sites in Nepal, the most common NCDIs include chronic obstructive pulmonary diseases (COPD), cardiovascular diseases, hypertension, gastric ailments, diabetes mellitus and cancer.[2,3]

Nepal's government has stride towards developing a comprehensive NCDI response. The Multisectoral Action Plan for the Prevention and Control of Non-communicable Diseases (2014-2020) focuses on prioritizing Noncommunicable diseases in national agendas and policies, strengthening capacity and governance, reducing modifiable and environmental risk factors, strengthening systems for NCD care delivery, promoting research, and monitoring progress towards these aims. The plan uses globally established targets, tackling risk factors of cardiovascular disease, diabetes, and chronic respiratory diseases. Additionally, the government initiated several other NCDI-related policies and programs, including the MPOWER policy package, which strengthens the national tobacco-control strategy, the Vehicle and Transport Management Act, which emphasizes injury prevention and management, with a specific focus on alcohol, and policies targeting the delivery of key NCDIs namely heart surgery, cancer care, organ transplant, and kidney dialysis.[4-6] Because of these initiatives, cardiac care (including surgical treatment of congenital heart disease) is free to all people under 15 and above 75 years of age. Heart valve surgery is free to people of all ages.[7,8] Finally, the World Health Organization's Package for Essential Non-communicable Disease services (PEN) is being implemented across the country.[9]

Nepal is ranked 146th on the Human Development Index with a limited understanding of the distribution of NCDIs among different socioeconomic groups, particularly for the extreme poor in rural communities.[10] While the gross national income per capita is $730, there are substantial regional variations in distribution of poverty, and the differential burden and impact of NCDIs in Nepal, as well as service availability and coverage, is unknown.[9,11,12]

THE NEPAL NCDI POVERTY COMMISSION

In collaboration with The Lancet Commission on Reframing Non-communicable Diseases and Injuries for the Poorest Billion, the Nepal NCDI Poverty Commission (henceforth, "Commission") was launched in January, 2017.[13] The Ministry of Health and Population (MoHP) of Nepal endorsed this Commission to assess the NCDI burden and response to date, and to make evidence-informed policy recommendations, focusing on the poorest and most marginalized communities. The Commission was composed of NCDI experts from clinical medicine, academia and health research, health economics, civil society, epidemiology, and media. The Commission formed four thematic groups to conduct the work, and held three national meetings over 16-months period. In April 2018, the Commission released a formal report detailing the state of NCDIs in Nepal, progress to date, and a set of prioritized policy recommendations for an equitable national response. Here, we summarize the Commission's key findings and recommendations.

METHODOLOGY

Study design and Data source

The complete methodology of the Commission's assessment is detailed on the National Report 2018.[14] Briefly, a comprehensive literature review of NCDIs in Nepal was conducted for the years 2005-2016. The burden of NCDI in terms of disability-adjusted life years (DALYs), years of life lost (YLLs), and years lived with disability (YLDs) were extracted from the Global Burden of Disease 2015 (GBD).[15] The Socio-demographic Index (SDI) is used to classify countries for comparison. High-SDI locations in the GBD have high educational attainment, high per capita GDP, and low fertility.[16] Household prevalence of NCDIs and household expenditures/consumption on health services were obtained from the National Living Standard Survey (NLSS) 2010/11.[17] Household consumption from the NLSS (I, II, and III) includes food consumption, non-food consumption and home production, and quintiles were used to categorize the population by consumption (welfare).[17] The impoverishment impact of household health care expenditure is measured by poverty incidence (or Headcount index), which quantifies the percentages of population pushed below the poverty line. Differences between pre-payment and post-payment income poverty were used to determine the poverty impact of health care payment on incidence. Pre-payment poverty index estimates are based on per capita income before deducting health care costs, and post-payment income poverty is based on the per capita income after deducting health care costs.[18] The national absolute poverty line for the survey period was an annual income of Nepalese Rupees (NRs) 19,261.[19] Availability of health services, medications, equipment and trained staff were obtained from the National Health Facility Survey 2015.[20] National health expenditures data are from the Nepal Economic Survey 2015/16, Nepal Statement of Income and Expenditure, and Nepal National Health Account (NNHA).[21-23]

KEY FINDINGS

Severity and diversity of NCDIs

NCDIs comprised a large share of the burden of disease in Nepal. Approximately 50% of all DALYs were caused by NCDs and 14% by injuries. The proportion of DALYs due to NCDIs more than doubled from 1990 to 2015 (25% and

65% of total DALYs, respectively). Approximately 38% of all DALYs associated with NCDs and 72% of all injuries occurred before the age of 40. Virtually all NCDIs resulted into more years of life lost per death than in high-SDI countries. These deaths occurred from most conditions at younger ages because of younger populations, more severe disease, and larger treatment gaps (Fig. 1).

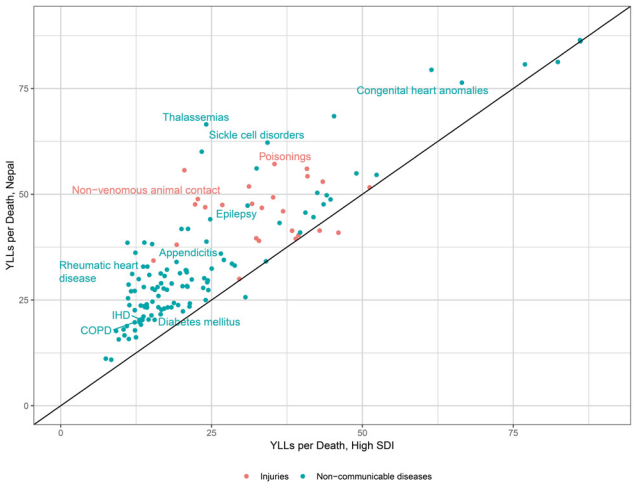

Figure 1. Scatter plot showing YLLs per deaths of Nepal Vs High SDI countries

The burden of NCDs was very diverse and ranged well beyond the four diseases traditionally included in global monitoring frameworks (cardiovascular disease, diabetes, chronic respiratory diseases, and cancers), otherwise known as the "4x4" model of common NCD conditions associated with behaviourally modifiable risk factors.[24] Over 60% of NCDI DALYs were due to other NCDI conditions, including non-ischemic cardiac conditions, congenital heart disease, infection-related cancers, musculoskeletal disorders, cirrhosis and other chronic liver disease, mental health and substance abuse disorders, and neurological disorders, and unintentional injuries (particularly as a result of natural disasters). Amongst the 25 NCDI conditions with highest number of absolute DALYs, over half were not related to the "4x4" conditions. In addition to the DALYs from injuries related to natural disasters, in particular the 2015 earthquake (46% of injury DALYs), there were injuries from a diverse set of conditions including pedestrian road injuries, self-harm, falls, and drowning.

Of the 25 NCDI conditions with the largest absolute burden, 17 occurred at a higher rate in Nepal than in high-SDI countries. Of note, the greatest relative ratios in DALY rates in Nepal compared to high-SDI countries among broad categories of NCDIs were forces of nature, war and legal intervention (146.0), chronic respiratory diseases (2.0), unintentional injuries (1.2), transport injuries (1.6), digestive diseases (1.5) and cirrhosis and other chronic liver disease (1.3).

Within the GBD study, most of the NCDI disease burden was not attributable to individual lifestyle choices. In modelling of GBD risk factors for NCDIs, only 27% of the risk factor profile could be attributed to individual behaviours, such as tobacco or alcohol, or metabolic risk factors, such as obesity or blood pressure. Other risk factors not captured within the model may include environmental factors, infectious diseases, conditions associated with poverty, and poor access to health care.

NCDIs and the Poor

Based on recent data from the NLSS III, wealthier households had a higher prevalence of high blood pressure and diabetes, which have well-established behavioural and metabolic risk factors, including a sedentary lifestyle and obesogenic diet (Fig. 2). However, poorer households had a higher prevalence for many NCDIs, such as respiratory, gastrointestinal, musculoskeletal, and heart-related conditions (Fig. 2). These disease areas included those conditions previously identified to have a high severity and burden of DALYs in Nepal, such as heart diseases, injuries, respiratory illness, and gastrointestinal conditions.

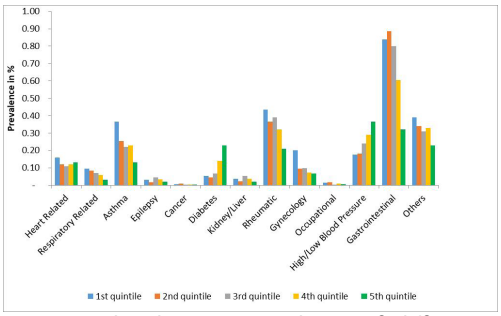

Figure 2. Bar plot-showing prevalence of different NCDIs in different quintiles population in Nepal

According to the NNHA 2012, NCDIs encompassed the majority of out-of-pocket spending. In that year, 58.4% of Nepalese out-of-pocket expenditures for health were for NCDIs, comprising 33% of all household expenditures on health.[25] Many NCDIs caused significant household-level and population-level impoverishment. Amongst NCDIs, injuries caused the greatest overall impoverishment impact (0.38% of the total population pushed below the poverty line), followed by gastrointestinal conditions (0.38%) and heart-related diseases (0.25%). The household-level ratio of poverty incidence to disease prevalence suggested that the most impoverishing conditions on a household-level were cancer (ratio: 1.5), high/low blood pressure (1.33), injuries (0.39), heart-related illness (0.38), gynaecology related illness (0.36), and kidney/liver-related illness (0.29) (Fig. 3).

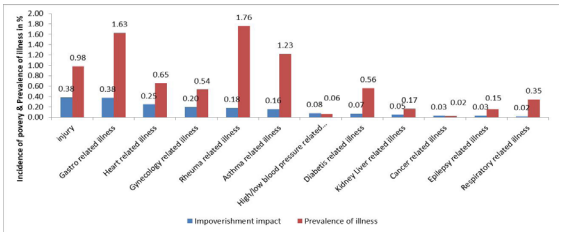

Figure 3. Bar plot showing prevalence of different NCDs and its impoverishment impact

Current Readiness and Investment for NCDIs

Resources for NCDIs remain extremely limited in Nepal. Currently, per capita health expenditure is less than $50 USD per annum. Of this amount, 48% is derived from out-of-pocket sources and only 40% is from government sources. Of the government expenditure on health, only 6.4% is for NCDs, and less than 1% of external development assistance for health is earmarked for NCDIs.[25,26] Despite inclusion of NCDIs in basic health services and high reported availability of NCDI services at public facilities, actual availability of key medications and readiness of NCD services are very limited. For example, although 97.4% of district hospitals reported having diabetes services, only 59.5% had metformin, 12.2% had insulin, and 17.6% had the capability to test blood glucose. For cardiovascular disease, although 98.7% of district hospitals reported having cardiovascular services, only 56% had aspirin or beta-blocking medication. Chronic respiratory disease services were present in 98.7% of district hospitals, but only 29.3% had a peak flow meter and very few had inhaled beclomethasone (9.3%). Less than 10% of facilities had staff formally trained in diabetes, cardiovascular disease, or cardiovascular diseases.[20]

According to the MoHP, there are 0.17:1000 doctors, 0.5 nurses (staff nurse and auxiliary nurse midwife) and 0.37 paramedics (health assistant and auxiliary health worker) available per 1000 populations compared to WHO's recommendations of minimum 2.3 health workers per 1000 population to achieve Millennium Development Goals.[27,28] Furthermore, there is a significant disparity in the accessibility of health facilities across geographic regions. While in the Terai region, 77.9% of households had access to health facilities within 30 minutes, this proportion was substantially lower in the Hills region (48.9%) and Mountain region (44.3%).[29]

Priority Setting for an Expanded NCDI Agenda

The objective of this Commission was to recommend a package of cost-effective health sector interventions addressing NCDIs with an emphasis on conditions affecting the poor in Nepal. The Commission ranked NCDI conditions by overall health impact (DALYs), severity in terms of premature mortality (YLL per death), extent of disability (YLD per case), and inequity DALY rate ratios between Nepal and high-income countries. The Commission also considered the impoverishing impact of each condition (as described above) and the feasibility and efficacy of potential interventions per expert opinion of the commissioners. Using these criteria, the Commission selected 25 conditions requiring priority attention by Nepal health policy and programs (Table 1).

The prioritized conditions include those traditionally included in NCD global monitoring frameworks, such as heart disease and stroke, type II diabetes, and COPD/asthma. However, based on the above criteria of burden, severity, equity, and financial impoverishment, the Commission also selected several cancers (cervical, breast, childhood leukemia and lymphomas), sickle cell disorders, heart conditions such as rheumatic heart disease and congenital heart disease, epilepsy, mental health conditions, and injuries.

Table 1. Selected priority NCDI conditions for expansion of services and interventions (Source: Nepal NCDI Poverty Commission)

Disease category	Prioritized Disease/condition
Respiratory	Asthma, Chronic obstructive pulmonary disease
Cardiovascular	Ischemic/hypertensive heart disease and stroke, Rheumatic heart disease
Endocrine	Diabetes mellitus
Cancers	Cervical cancer, Breast cancer, Pediatric leukemia and lymphomas
Mental health	Major depressive disorder, Anxiety disorders, Self-harm
Neurologic	Epilepsy
Congenital	Congenital heart anomalies, Sickle cell disorders
Liver	Cirrhosis and other chronic liver disease due to hepatitis B, Cirrhosis and other chronic liver disease due to alcohol use
Renal	Chronic kidney disease due to hypertension
Surgical	Paralytic ileus and intestinal obstruction, Motor vehicle injuries, Pedestrian road injuries, Fire, heat, and hot substances, Exposure to forces of nature, Falls, Motorcyclist road injuries, Motorcyclist road injuries, Venomous animal contact

Addressing the prioritized NCDI conditions will involve the design, implementation, integration, and scale-up of a complex set of health sector interventions. Some of these interventions already exist within the health care system and others have yet to be introduced.

A package of cost-effective interventions to achieve universal health care (UHC), including NCDIs, in low-income countries has recently been recommended by the Disease Control and Priorities 3 (DCP3) group.[30] This guidance is based on the best evidence available globally as interpreted by the health economists and public health experts within this group, which had the goal of defining a package of interventions to achieve UHC. The interventions recommended for UHC contain 69 interventions targeting NCDI conditions. Each intervention was evaluated by the DCP3 group and assigned values on the properties of cost-effectiveness (0-4), financial risk protection (0-6), and equity (0-3), with 0 representing minimal and higher numbers representing more optimal values in each respective metric. The interventions were also assigned a target level of the health system: population, community, health center, first-level hospital, and referral/specialty hospital. Finally, these interventions were assigned an average per unit cost by DCP3 for low-income countries using the best evidence available.

Table 2. Health sector interventions prioritized by Nepal NCDI Poverty Commission. Cost effectiveness, financial risk protection, and equity scores are shown for each intervention. Baseline and target coverage estimates as well as incremental cost of introduction and scale up are also shown. (Source: Nepal NCDI Poverty Commission)

Condition	Intervention	Cost Effectiveness Rating	Financial Risk Protection Rating	Equity Rating	Baseline coverage 2018	Target Coverage 2030	Incremental Cost	Health System Level
Respiratory	Low-dose inhaled corticosteroids and bronchodilators for asthma and for selected patients with COPD	1	3	1	0.05	0.35	45,214,446	Health Center
Respiratory	Management of acute exacerbations of asthma and COPD using systemic steroids, inhaled beta-agonists, and, if indicated, oral antibiotics and oxygen therapy	1	4	1	0.10	0.40	25,683,611	First-Level Hospital
Respiratory	Mass media for awareness on handwashing and household air pollution health effects	4	1	1	0.20	0.50	108,519	Population
Respiratory/ Alcohol	Mass media messages concerning use of tobacco and alcohol	4	1	1	0.20	0.50	108,591	Population
Cardiovascular	Long term management of IHD, stroke, and PVD with aspirin, beta blockers, ACEi, and statins (as indicated), for secondary prevention	2	2	1	0.20	0.50	20,676,926	Health Center
Cardiovascular	Mass media messages concerning healthy eating or physical activity	4	1	1	0.20	0.50	108,591	Population
Cardiovascular	Use of aspirin in case of suspected myocardial infarction	4	2	1	0.10	0.40	806	Health Center
Cardiovascular and RHD	Medical management of acute heart failure	4	5	3	0.15	0.45	35,211,144	First-Level Hospital
Cardiovascular and RHD	Medical management of chronic heart failure with diuretics, beta-blockers, ace-inhibitors, and mineralocorticoid antagonists	4	4	3	0.15	0.45	17,242,752	Health Center
Rheumatic Heart Disease	Treatment of acute pharyngitis in children to prevent rheumatic fever	4	2	1	0.20	0.50	375,836	Health Center
Rheumatic Heart Disease	Secondary prophylaxis with penicillin for rheumatic fever or established RHD	0	1	1	0.20	0.50	187,918	Health Center
Diabetes	Prevention of long-term complications of diabetes through blood pressure, lipid, and glucose management as well as consistent foot care	4	2	1	0.15	0.45	43,662,600	Health Center
Diabetes	Screening for diabetes in all high-risk adults	4	2	1	0.10	0.40	1,987,498	Health Center
Diabetes	Screening for diabetes in pregnant women	1	3	3	0.30	0.60	2,216,862	Health Center
Breast cancer	Treat early stage breast cancer with appropriate multimodal approaches, including generic chemotherapy, with curative intent, for cases that are referred from health centers and first-level hospitals following detection using clinical examination	4	4	1	0.05	0.35	431,121	Referral Hospital
Cervical Cancer	School-based HPV vaccination for girls	3	3	1	0.05	0.35	1,236,958	Community
Cervical Cancer	Treatment of early-stage cervical cancer	0	4	1	0.20	0.50	24,926	First-Level Hospital
Childhood Cancers	Treat selected early-stage childhood cancers with curative intent in paediatric cancer units/hospitals	2	5	2	0.10	0.30	67,823	Referral Hospital
Sickle Cell	In settings where sickle cell disease is a public health concern, universal new-born screening followed by standard prophylaxis against bacterial infections and malaria	4	2	3	0.05	0.35	796,593	First-level Hospital
Depression; Anxiety	Management of depression and anxiety disorders with psychological and generic antidepressant therapy	3	4	1	0.10	0.40	8,621,047	Health Center
Epilepsy	Management of epilepsy using generic anti-epileptics	4	4	3	0.20	0.50	1,034,884	Health Center
Injuries and Surgical	Basic first-level hospital surgical services				0.50	0.80	44,172,840	First-level Hospital
Injuries and Surgical	Specialized surgical services				0.10	0.40	1,060,148	Referral Hospital

The Commission estimated the cost of each NCDI intervention by adjusting non-tradeable direct costs according to the cost of human resources in Nepal compared to the average for low-income countries. A 50% indirect cost was added to account for indirect costs at the facility level, including items such as laboratory, buildings, rent, maintenance, and utilities, and an additional 17% indirect cost was added for non-facility-based costs, such as financing, supply chain, and health information systems. The Commission then estimated baseline coverage for each intervention using available data sources and expert opinion and assigned a reasonable target coverage for each intervention by the year 2030. The incremental cost of each intervention was estimated by multiplying the cost of each intervention by the estimated population in need of each intervention in Nepal and the incremental coverage.

The 69 NCDI interventions from the DCP3 UHC package were evaluated and judged by the Commission based on the following criteria: alignment with the prioritized disease conditions, feasibility in the Nepalese context, total cost, cost-effectiveness, financial risk protection (or protection against catastrophic expenditures), and prioritization for the most vulnerable (i.e., children, individuals suffering from severe disease, those living in poverty, etc.). After evaluation according to these above criteria, the Commission selected 23 interventions (Table 2). The majority of these conditions (18/23) were previously categorized as "high-priority" interventions for achieving UHC in low- and low-middle income countries by DCP3.

The Commission proposes the introduction or intensification of these 23 interventions to achieve UHC in Nepal by 2030. Some of the recommended interventions – such as mass media campaigns and disease screening programs – will be best implemented at the municipality levels, while other components – such as advanced diagnostics, surgical care, and oncologic care – requires implementation at the provincial and regional levels. All of these interventions should be incorporated into pre-existing structures, so as to avoid redundancy and maximize health benefit to the population. In the new Federalist governance structure, these interventions should be customized for the provincial system, including devolved autonomy for localized program design, based on the needs of the regional populations. Although these interventions represent a broad set of cost-effective interventions, given resource constraints, the Commission opted to defer several interventions. For example, cross-cutting services for palliative care and rehabilitative medicine were considered important and aspirational, but they were not included as first-priority recommendations by the Commission due to resource constraints and low health-system readiness. Other interventions, such as universal screening for hypertension or primary prevention of cardiovascular disease, while important, were ranked as lower cost effectiveness, and they could be introduced in future years.

If implemented to target coverage, the Commission estimated an incremental cost of $8.76 USD per capita annually for these selected interventions. This equals 1.4% of current GDP or 22% of current total health expenditures (currently $40 USD per capita). Although this level of expenditure may seem high compared to current health system investment, it may not be unreasonable in the setting of global recent recommendations for government expenditure on health care, such as 5% of GDP or per capita expenditure of $86 USD in low-income countries.[31]

The Commission estimated that these interventions could avert at least 9,680 premature deaths every year by the year 2030. This estimate is conservative and is based on current NCDI mortality rates (GBD, 2015) adjusted for the estimated population in 2030 with the estimated effect size for a similar package of interventions proposed by the DCP3 group.[32,33] This figure represents an approximate 10% reduction in expected premature deaths in the year 2030 (according to 2015 death rates). Furthermore, these interventions will also lead to larger benefits by averting morbidity and DALYs given the emphasis on interventions for severe conditions affecting those at younger ages.

Universal Health Coverage and an Expanded NCDI Agenda

The national health insurance program is currently implemented by MoHP with the aim to advance UHC in Nepal. The Commission is closely collaborating with MoHP to incorporate its recommendations in the national health system and integrate with the national health insurance program.

The increased cost of expanded interventions for NCDIs could be offset in part by revenue from excise taxation on primary risk factors for common NCDIs, such as tobacco, alcohol, sugary beverages, and packaged foods. There is a precedent of successful excise taxation in Nepal. Total revenues generated by government excise taxes on tobacco and alcohol was approximately $267 million USD in fiscal year 2014/15. The Commission modeled the impact of increases in taxes on tobacco products on tobacco consumption, government revenue, and life expectancy at birth of the users. The Commission found that a 50% tax increase on tobacco could result in 158,462 people quitting smoking (almost 1% of the current smoking population), resulting in 1,584,624 years of life saved. This tax increase would result in an additional revenue of approximately $186 million USD per annum, which could potentially be re-invested into the health sector. More extensive details of financing projections, and the impact of excise taxation, can be found elsewhere.[14]

CONCLUSION

The Nepal NCDI Poverty Commission was established to inform the country's response to the NCDI epidemic, with a specific focus on the poorest and most marginalized populations. Using existing data sources, the Commission found a high prevalence, diversity, and severity of NCDIs in Nepal, with particular conditions having a disproportionate burden of disease and impoverishment impact on the extreme poor. The Commission identified an expanded set of twenty-five NCDI conditions for prioritization and recommended introduction or scale-up of twenty-three evidence-based health sector interventions, including a set of recommendations for national policy-makers and program implementers (Table 3). Although these recommended interventions will require significant financial investment, the high burden of NCDIs, the current low readiness in the health system and the potential aversion of significant impoverishment may warrant such investment. The Commission's recommendations are achievable, and will significantly improve health and well-being for millions of Nepalese, and facilitate Nepal's path towards UHC by 2030.

Table 3. Key Recommendations of Nepal NCDI Poverty Commission

Service Provision	-NCDI services should be expanded within the national health care delivery system to include a broader set of diseases. -Existing services for well recognized conditions, such as type II diabetes, hypertension, heart disease and stroke, asthma and COPD require strengthening and greater resources. -Services for NCDIs should be progressively decentralized from urban centers and referral hospitals to district hospitals and primary care health centers while integrating these services with other existing programs.
Strategic Information	-Civil Registration and Vital Statistics systems (including cause of death recording through techniques such as community verbal autopsy) should be strengthened. -Household-level data collection, through surveys such as STEPs and DHS, should be expanded to include additional NCDI disease conditions as well as socio-economic information. -Disease-specific national registries should be strengthened for monitoring for NCDIs, specifically for more severe conditions, such as congenital heart disease, rheumatic heart disease, childhood and women's cancers, and type I diabetes. -Health facility surveys should be expanded to include information on additional NCDs, mental health, and injury related services.
Financial Protection	-Disease-specific policies and programs should be introduced for high-cost conditions addressing the equity issues. -Insurance coverage schemes should be expanded and include priority NCDI conditions. Relief schemes should be adopted for specific conditions for the poor.
Resource Allocation	-The Government of Nepal should consider a greater allocation of health-related resources towards NCDIs given the magnitude of NCDIs burden on Nepali population. -Potential revenue streams to increase fiscal space for NCDIs should be explored such as Progressive taxation on tobacco, alcohol, sugary beverages, and processed or packaged foods, and utilizing premiums from new insurance schemes. -External donor funds should be reoriented to include support for NCDI services.
Governance / Advocacy	-Provincial and local governance should also focus on their NCDI response through increased resources for health services, multi-sectoral response to create enabling environments for prevention of NCDI risk factors, and collection and monitoring of data towards comprehensive targets in NCDIs. -Governmental and non-governmental stakeholders (including but not limited to civil society organizations, patient advocacy groups, academic institutions, and community members) should engage actively to strengthen the NCDI response.

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