Issue Brief Series on:
**SUSTAINABLE HEALTH FINANCING IN BHUTAN**

WORLD BANK GROUP

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**ISSUE BRIEF 4**

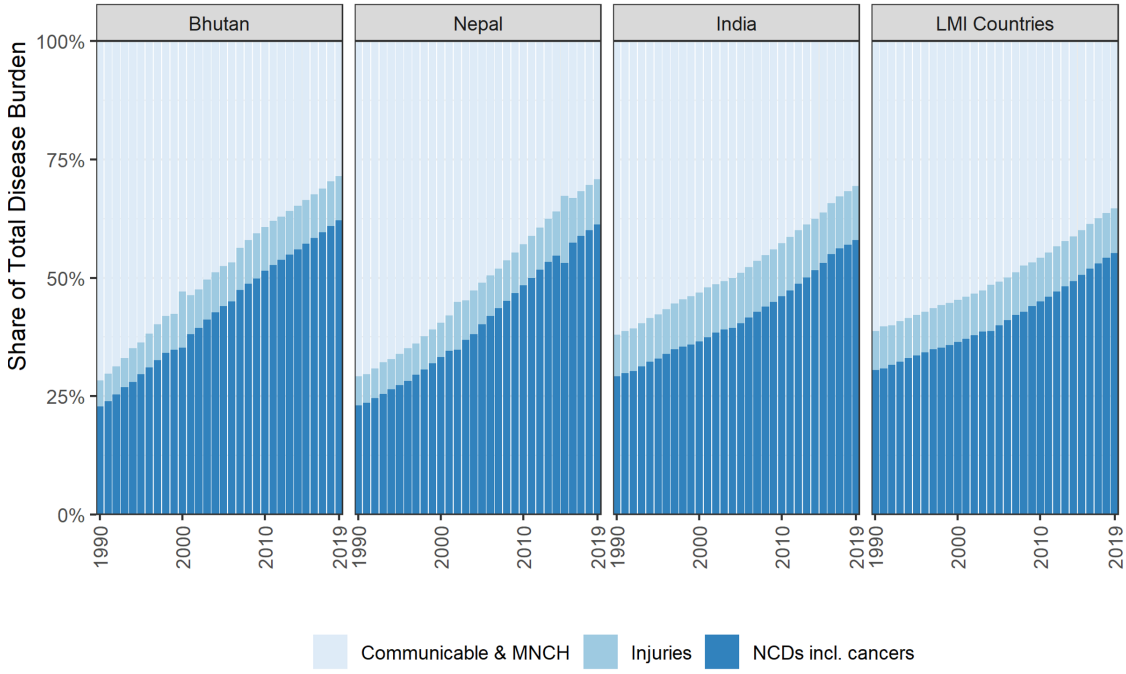
# Ageing & NCDs Impact on Health Financing

*Bhutan is experiencing a rapid process of population ageing and a related shift in mortality and burden attritubalte to noncommunicable diseases. This brief first highlights the health financing challenges created by the ongoing demographic and epidemiological transitions, and then outlines the shape of potential solutions to those challenges.*

**Bhutan has experienced a rapid change in its burden of disease toward noncommunicable diseases (NCDs) over the last three decades: and its transition has been faster than in several peer countries (Figure 1).** Measured as a percentage of total disease burden, disability-adjusted life years (DALYs) associated with NCDs has increased from 23% in 1990 to 62% in 2019. Over this period, ongoing population ageing as well as changing lifestyles and popular dietary habits[1] have meant that cardiovascular diseases, chronic respiratory disease, cancers, and diabetes have overtaken infectious, maternal, and neonatal disorders as the top causes of premature mortality.[2] Bhutan's epidemiological transition is faster than in neighboring India or Nepal, and even more rapid than the average experience of Lower Middle Income (LMI) countries.

**While the trends from the last three decades are clear, looking thirty years forward, Bhutan's demographic indicators suggest that NCD share will continue to rise.** Population estimates show that the share of the population aged 65+ will nearly triple between 2020 and 2050, from 6% to 16%.[3] As Bhutan's population ages, its NCD burden will commensurately increase given that ageing is itself a risk factor for NCDs, including cancers, hypertension, diabetes, and other cardiovascular conditions.

**Figure 1.** Change in Disease Burden in Bhutan and Peer Countries (1990-2019)




**To date, Bhutan's healthcare delivery system has been primarily oriented towards the care and treatment of communicable and basic maternal and child health conditions.** Improvements in maternal, newborn, child, and adolescent health (MNCAH) outcomes have be impressive over the last few decades: infant mortality reduced from 83 deaths per 1,000 live births (1990) to 23 deaths per 1,000 live births (2019).[5]

[1] Conclusions from Bhutan NCD Risk Factors WHO STEPS Survey 2014. [2] IHME Global Burden of Disease Survey (2019) edition. [3] UN Population Estimates. [4] IHME Global Burden of Disease Survey (2019) edition. [5] IHME GBD 2019.

Similarly, impressive improvements have been recorded in access to institutional deliveries: for example, the percentage of births attended by skilled health staff increased from 27% in 2000 to above 96% in 2019.[6] At the same time, through the implementation of a national strategy, mortality caused by malaria infections has been reduced by 99%.[7] Although aspects of the communicable disease agenda remain unfinished in Bhutan, the rapid growth of NCDs requires a transformation of the health service delivery system.

**Recognizing that preventing, treating, and managing NCDs is the future of healthcare in Bhutan, the Royal Government of Bhutan's (RGoB) Ministry of Health has already begun instituting important service delivery reforms.** First, starting as early as 2009, the World Health Organization's (WHO) package of essential NCD interventions (PEN) was incrementally introduced into the primary care system. Since then, the RGoB has passed The Multisectoral National Action Plan for the Prevention and Control of NCDs (2015)[8], and piloted an innovative service delivery redesign initiative specifically to help manage NCDs in the population—the Service with Care and Compassion Initiative (SCCI).[9] Through the SCCI, the RGoB is pursuing a strategy of opportunistic screening for priority NCDs—whereby all patients entering health facilities are screened regardless of initial reason of visit. As of September 2020, the SCCI was scaled from four districts to all twenty districts across the country. Going forward, more dedicated efforts may be necessary, including population-based screening approaches.

## KEY INSIGHT 1

## ALONGSIDE TRANSFORMATION EFFORTS IN THE SERVICE DELIVERY SYSTEM, BHUTAN'S EPIDEMIOLOGICAL SHIFT WILL REQUIRE A STRATEGIC RESPONSE FROM THE PUBLIC HEALTH FINANCING SYSTEM AS WELL.

**Global evidence indicates that a rising share of NCDs—even as overall disease burden decreases—will lead to higher system-level costs.** This is primarily due to the chronic nature of most NCDs, including cardiovascular, respiratory, cancer and kidney diseases, which have higher medical costs and require longer-term medication regimens relative to most communicable diseases. As countries transition towards NCD-skewed disease burdens, per capita current health expenditures tend to steadily increase. The same trends are being observed in Bhutan as well.

**Recent evidence from Bhutan shows that aggregate health system expenditures as well as per unit healthcare costs are increasing—even after controlling for inflation.** Insights from the recently completed *Bhutan Healthcare Costing Analysis (2023)* show that at Bhutan's major referral hospitals, the total costs have increased by as much as 62% in the last 10 years—reflecting a rise that outpaces general inflation in the Bhutanese economy.[10] Similar trends have been observed in the same period in average per unit costs, measured as per bed day costs, at the major referral hospitals. At a system-wide level, the latest National Health Accounts exercise (NHA 2021) notes that there has been "an exponential increase of current health expenditures over the recent years."[11] Total current health expenditures, which were approximately Nu.6.2 billion in FY2019/20, increased 22% year-over-year in FY2019/20 and 17% in FY2018/19 as compared to the previous fiscal year. In contrast, overall inflation in Bhutan in 2018 and 2019 was measured at only 1.8% and 0.9% respectively. Given that health is almost entirely publicly delivered—over 80% of total current health expenditures were financed by the government in FY2019/20—Bhutan's rising health costs place direct pressure on the RGoB's budgetary commitments.

**Conversely, policy leaders should realize that population ageing will have a negative impact on health sector revenues as well.** Between 2020 and 2060, the share of Bhutan's population aged 65 and older is expected to quadruple: from 6% to 24% (Table 1). This ageing trend raises health financing sustainability concerns due to slower health sector revenue growth because of fewer working-age people.[12] Accordingly, health financing systems that rely on payroll contributions are most at risk from ageing. Although Bhutan does not utilize social contributions, its health revenues are still vulnerable to ageing because a decline in the working-age population share implies slowed growth in income tax revenues and potentially also lower productivity in the labor market.[13] In fact, with current ageing trends and without any changes in policy, the RGoB can expect a financing gap equivalent to US$27 per person (or 0.3 percent of GDP) by 2060.[14]

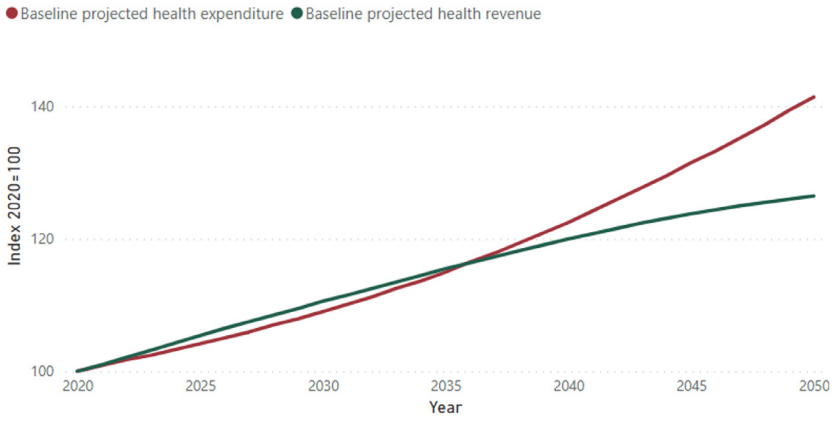
[6] UNICEF, State of the World's Children, Childinfo, and Demographic and Health Surveys. [7] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6746194/ and IHME GBD 2019. [8] https://extranet.who.int/nutrition/gina/sites/default/filesstore/BTN%202015%20NCD%20Action%20Plan_1.pdf [9] WHO. September 2022. "Evolving a people-centered approach to noncommunicable disease (NCD) services in Bhutan." [10] Bhutan Healthcare Costing Analysis (2023), pg 13. [11] Bhutan National Health Accounts Report 2021. https://www.moh.gov.bt/wp-content/uploads/ict-files/2021/07/NHA-Report-2021.pdf. [12] Normand, Williams & Cylus. 2022. The implications of population ageing for health financing in the Western Pacific Region. European Observatory on Health Systems and Policies, WHO Centre for Health Development (Kobe), WHO Western Pacific. [13] Normand, Williams & Cylus. 2022. [14] Population Ageing financial Sustainability gap for Health systems (PASH) Simulator Tool. 2022. Data sourced from OECD revenue statistics and WHO Global Health Expenditure database. https://eurohealthobservatory.who.int/themes/observatory-programmes/health-and-economy/population-ageing-financial-sustainability-gap-for-health-systems-simulator

Policy measures, including increasing the taxes levied on corporate profits and capital gains, as well as consumption taxes, can help minimize the expected financing gap from the revenue side.

**Table 1.**
Ageing in Bhutan, 2020-2080

| Year | Population Aged 65+ |
|---|---|
| 2020 | 6% |
| 2040 | 10% |
| 2060 | 24 |
| 2080 | 33% |

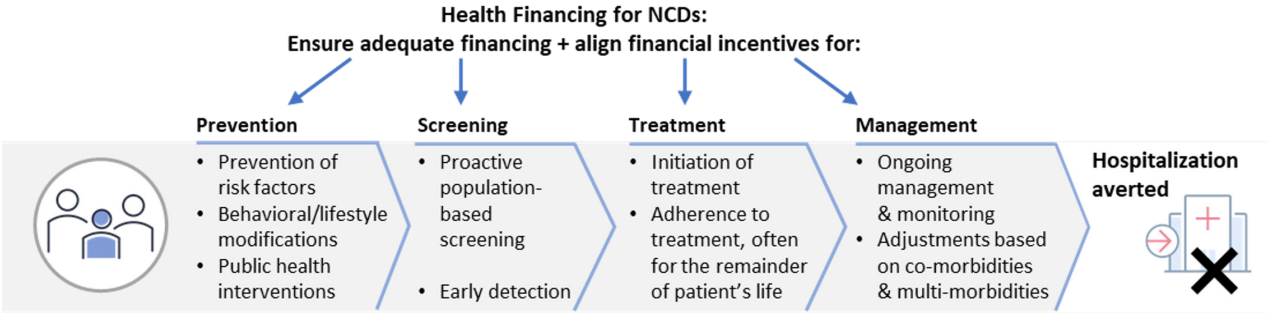
**Figure 2.** Estimated Financial Sustainability Gap in Bhutan from Ageing




As Figure 2[15] shows, an important health financing challenge as it relates to the NCD and ageing transition is managing anticipated healthcare cost inflation in line with anticipated revenue growth. It is crucial to ensure adequate funding for (1) preventative interventions and (2) comprehensive NCD care at the primary health care (PHC) level. This is because of the gradual, long-term, and fluctuating nature of NCDs: left unmanaged, NCDs generally exhibit slow onset, remain as chronic illness that impact health with fluctuating intensity, and may eventually lead to acute exacerbations that need costly and high-intensity levels of care. Furthermore, NCDs are also commonly comorbid—i.e., patients can suffer from multiple chronic conditions at once—thus necessitating simultaneous and complex treatment plans. In this way, NCDs are often differentiated from infectious and communicable diseases, which tend to be much more episodic, require time-limited medication regiments, and are fully curable.

The long-term nature of most NCDs means that health systems have an opportunity to significantly impact overall cost and health outcomes. This can be achieved through early detection and long-term care management such that costly hospitalizations are avoided where possible.

**Figure 3.** Health Financing and the NCD Patient Trajectory




Accordingly, there is a need to understand the current state of Bhutan's health financing for NCDs, and to assess whether the current arrangements are effectively incentivizing cost-effective NCD care management. Using both global experiences and local analysis, the remainder of this policy brief summarizes the current state of NCD financing in Bhutan and provides options to finance the ongoing disease burden transition sustainably and innovatively.

[15] Data for Table 1 and Figure 2 are sourced from: WHO Population Ageing financial Sustainability gap for Health systems (PASH) Simulator tool. Available online at: https://emalurohealthobservatory.who.int/themes/observatory-programmes/health-and-economy/population-ageing-financial-sustainability-gap-for-health-systems-simulator

## KEY INSIGHT 2

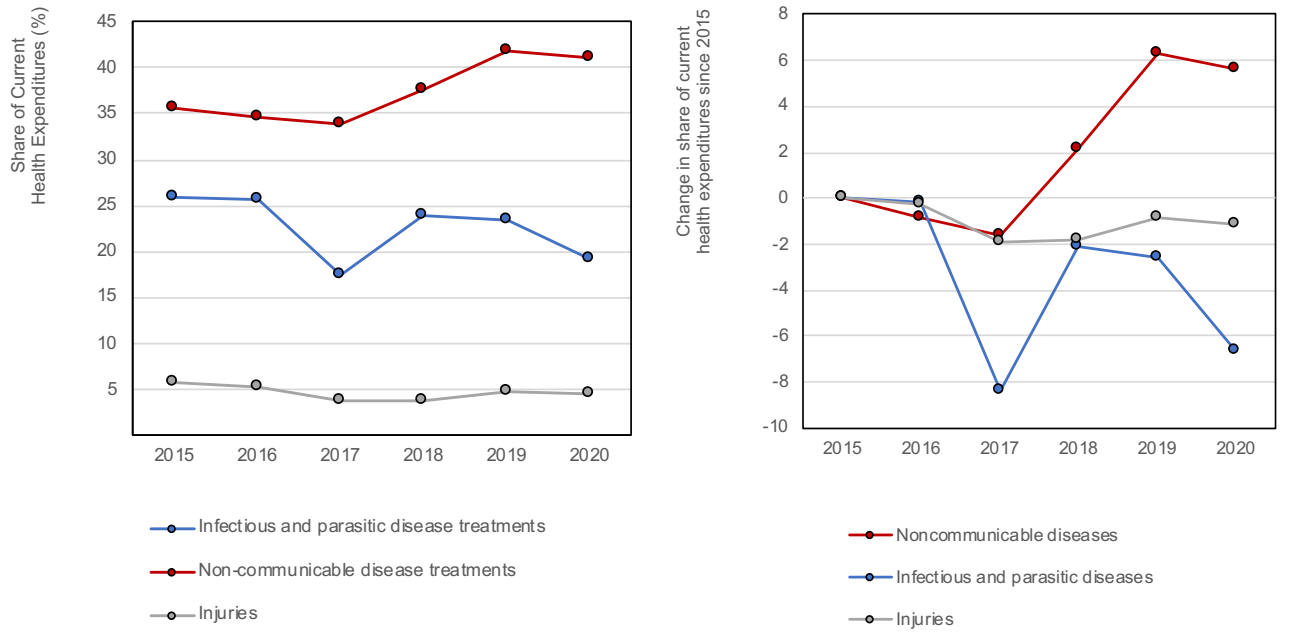
## BHUTAN WILL NEED TO INCREASE INVESTMENTS IN NCD PREVENTION AND CONTROL—BUT THESE INVESTMENTS CAN BE HIGHLY SPECIFIC AND YIELD OUTSIZED RETURNS.

**At present, Bhutan spends less than 0.5% of its current health expenditures on NCD prevention and control.**[16] The RGoB's Multisectoral National Action Plan for NCDs (2015), which outlines multiple programs for NCD control, notes that such programs are to be primarily financed through direct government budgetary transfers. Data from the most recent National Health Accounts show that budgetary line items for NCD prevention and control functions account for only 0.2% of total current health expenditures in FY2019/20—down from 0.5% in the 2018/19 fiscal year.[17] While the relative amounts invested in NCD prevention and control programs have declined, the direct NCD burden, understood both in terms of economic cost and health cost, has been increasing: 41% of all current health expenditures in FY2019/20 were linked to NCD-related diagnoses, the largest share among disease categories, and up from 38% in FY2018/19. The continuously rising share of NCDs in national health expenditures, and in the national disease burden, implies that the current levels of investment in NCD prevention and control are insufficient.

**This raises an important question: how much ought to be spent on upstream NCD prevention?** While comparative data on exactly what share of current health expenditures should be allocated for preventative and NCD control programs is sparse, a recent report published in The Lancet by the NCD Countdown 2030 collaborators group notes that most LMICs will need to spend "approximately 20% of government health expenditure" on high-priority interventions or a locally-prioritized NCD package in order to meet the target set under Sustainable Development Goal 3.4.[18] The gap between Bhutan's less-than-1% on NCD prevention and control and The NCD Countdown 2030 collaborators group's 20% benchmark is large and suggests that additional resources need to be mobilized. Despite suffering major health and economic shocks from the COVID-19 economic crisis, Bhutan's medium-term growth outlook remains robust, especially considering revenues anticipated from two new major hydropower projects expected to come online in 2024/25.[19]

**Global evidence suggests that NCD financing can be focused on a narrow set of high-priority PHC interventions and still yield extremely high economic and human capital returns.** For instance, economic assessments of five basic NCD prevention and early management interventions therapies have estimated an average 9:1 return on investment for every dollar spent by the health system on NCD therapies, and their results were constant across high- and low/lower-middle income settings.[21] Separately, a recent

**Figure 4.** Bhutan's Health Expenditures by Disease Type[20]




[16] Bhutan NHA FY2018/29 & FY2019/20. Pg15. [17] Bhutan NHA FY2018/29 & FY2019/20. Pg15. [18] NCD Countdown 2030. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02347-3/fulltext#%20. [19] Bhutan Systematic Country Diagnostic 2020. [20] WHO GHED 2022 Edition.
[21] R Nugent. 2015. NCDs after 2015, pg2. http://dcp-3.org/sites/default/files/resources/R%20Nugent%20CC%20Perspective%20Paper.pdf

assessment on the impact on NCD-related mortality for Malawi shows that scale up of just three priority NCD interventions—(i) "Aspirin for suspected ACS[22]", (ii) "Early-stage cervical cancer screening/treatment", (iii) and "Treatment of early-stage breast cancer"—would be enough to help the country meet its SDG 3.4 targets by 2030, and avert 3,000 deaths at a cost of US$1,500 per life.[23] Accordingly, with local disease burden and cost effectiveness data, health sector policy leaders may be able to make robust arguments for incremental investments in NCD control.

## KEY INSIGHT 3

## BHUTAN WILL NEED TO CONSIDER WHETHER THE CURRENT HEALTH FINANCING SYSTEM FOR NCDS IS INCENTIVIZING—OR DISINCENTIVIZING—COST EFFECTIVE CARE DELIVERY.

**To incentivize cost effective NCD treatments, Bhutan will need to introduce health financing and strategic purchasing reforms.** Utilization data from Bhutan's highest level referral hospitals shows that nearly 6% of all inpatient department (IPD) admissions during the 2018/19 financial year could be attributed to the single NCD, hypertension. A further 3.2% of all admissions were attributed to diabetes. Together this means that nearly 10% of all admissions at referral hospitals—i.e., Bhutan's most expensive care setting—are associated with NCDs that are commonly considered to be ambulatory care sensitive conditions (ACSC).[24] [25] ACSCs, as defined by the WHO, are conditions for which "hospitalizations can be avoided by timely and effective care in ambulatory" or other primary care settings.

**Results from the most recent Bhutan Healthcare Costing Analysis (2023) report show that the cost of incurring a single ACSC admission can be up to 50 times as high as a OPD visit.** Disease specific IPD cost estimates show that an admission at the major referral hospitals can cost between Nu.45,079 and Nu.53,380 for diabetes, and between Nu. 24,615 and Nu.29,809 for hypertension. In comparison, the cost of a single outpatient visit at the same referrals hospitals costs an average of only Nu.1,011. The significant difference between the unit costs of IPD and OPD utilization make clear the high costs of untreated and unmanaged NCDs to Bhutan's long term health financing sustainability. Equally, however, the low cost of OPD visits relative to potentially avoidable admission implies a significant opportunity to improve efficiency in NCD financing for Bhutan.

**What health-financing levers are available to incentivize the management of high-prevalence NCDs, particularly ACSCs, in the community and outpatient settings?** As Chukwuma, Lylozian and Gong (2021) note in a recent paper, to reduce the financial burden from NCDs on country health systems "there is a need to increase the access to primary health care" that includes "services for ambulatory care sensitive conditions such as for uncomplicated diabetes mellitus."[26] In other words, to addresses ACSCs in Bhutan, primary healthcare facilities need to be equipped to provide the necessary NCD-screening, prevention and management services, and these primary care services need to be readily accessible to citizens. This in turn implies that primary care facilities need adequate financing and resource provisioning. Finally, while prevention of ACSC through increased access to PHC at community health centers and first-level hospitals is the first order policy objective, given the high price of admissions it is also important to address costs at the major referral center level as well. Accordingly, this policy brief concludes by providing examples to spur policy dialogue on future health financing and purchasing innovations in Bhutan.

## EXAMPLE 1

## POPULATION-BASED OR "PER FAMILY" PRE-PAYMENTS FOR PRIMARY CARE:

**In the Philippines, PhilHealth has been purchasing PHC services from the public sector not on a per-service reimbursement basis or via line-item budgets, but on a prospective per-family basis.** This means that health facilities are assigned specific families based on a geographic catchment area, and then a set capitation payment is released to health facilities based on the sum of assigned families. This financing mechanism is being used to finance PHC services at rural health units and other public sector health centers. In 2019, the original primary care benefit (termed Primary Care Benefit 1) was updated into the Expanded Primary Care Benefit, with specific incentives introduced for the prevention and management of priority NCDs, including bonus payments for medication maintenance of diabetes and hypertension patients.[27] By the end of 2022, the PhilHealth had successfully attributed over 780,000 members to a preferred primary care provider where

[22] ACS=Acute Coronary Syndrome. [23] NCD Countdown 2030. Pathway analysis findings for Malawi. [24] Bhutan Healthcare Costing Report. 2022; and World Bank staff analysis. [25] Joana Seringa et al. 2019. "The impact of diabetes on multiple avoidable admissions: a cross-sectional study." BMC Health Services Research volume 19, Article number: 1002. [26] Chukwuma, Lylozian, & Gong. 2021. "Challenges and Opportunities for Purchasing High-Quality Health Care: Lessons from Armenia." Health Systems & Reform Vol 7, Issue 1: https://www.tandfonline.com/doi/full/10.1080/23288604.2021.1898186. [27] Financing Primary Health care in the Philippines. https://www.lshtm.ac.uk/media/59796

members were incentivized to avail free preventative NCD screenings, consultations and assessments.[28] Furthermore, survey data suggests that when preventative PHC service coverage is expanded to beneficiaries, including the poor and marginalized members, utilization tends to be high: nearly 70% of surveyed poor PhilHealth members had availed at least one covered preventative PHC service in the last year.[29]

**In Bhutan, transitioning away from input-based line-item budgets, and towards output- or population-based capitation payments can help financially integrate service delivery transformation efforts like the SCCI into the existing PHC system.** Such per-family PHC capitation payments provide resources upfront to health facilities without the limitations of line-item budgets to allow facilities and providers to flexible execute the new care tasks involved in proactive NCD management—including home-based screenings for NCDs. Unintended consequences, such as reductions in utilization that sometimes accompany capitation payment models, can be mitigated by using blended approaches that retain elements of fee-for-service payments to financially incentivize a minimum level of utilization or penalize under-delivery.[30]

### EXAMPLE 2
### NCD-SPECIFIC BUNDLED PAYMENTS FOR HOSPITAL PROVIDERS:

**Options to manage costs at the highest tier of the care continuum—i.e., inpatient hospitals—include a special form of capitation that is limited to the single care episode.** The Lancet Global Health Commission on Financing Primary Healthcare defines such bundled payments as "a single payment in the form of a lump sum" per episode or condition per patient and made to a "collective of providers".[31] The Netherlands has introduced bundled payments primarily for NCDs like type 2 diabetes and cardiovascular disease.[32] In the United States, bundled payments have also been used to help manage costs from high volume procedures such as routine deliveries. In the hospital setting, the purpose of bundled payments is to incentivize better care coordination and resource management among healthcare providers involved in complicated patient care. In effect, hospitals are incentivized to participate in controlling their own cost growth as there is potential to retain the difference between actual delivery costs and the bundled payment value. The retained funds can then be re-invested in the hospital in service of quality and capital infrastructure improvements.

**As countries move towards greater use of bundled payments—and value-based care purchasing mechanisms more generally—the evidence for the value of these policies is also becoming clearer.** "Bundled-payment models have had predominantly positive impacts on both spending and quality of care, irrespective of country, medical procedure, or condition and applied research methodology."[33] In Bhutan, where the average inflation-adjusted cost of an inpatient admission has increased by 33% at the referral hospitals and by 10% at the district hospitals between FY2009/10 and FY 2018/19, payment reforms that help to manage hospital expenditures are both necessary and will be complimentary to PHC-focused reforms. Both will contribute to sustainable health financing in the medium- and long-terms.

## CONCLUSION

Bhutan's health system has historically been oriented towards communicable and basic maternal and child health conditions—with significant progress achieved over the last three decades. Although important last-mile access and equity issues remain on the communicable and RMNCH side, Bhutan is also concurrently experiencing rapid changes in its burden of disease: The NCD share of total disease burden has increased from 23% in 1990 to 62% in 2019. This means the NCD burden is rising faster in Bhutan than in other regional countries and faster than the lower middle-income country average. Bhutan's population is also aging fast: the share of 65+ is likely to triple in the next three decades, from 6% to nearly 20% of the population.

**Changing disease and demographic mix have direct implications on health financing sustainability in Bhutan.** First, a rising NCD disease burden can push per capita current health expenditures upwards, even if overall disease burden is decreasing, because of the chronic nature of most NCDs—including cardiovascular, respiratory, cancer and kidney diseases, which have higher medical costs and require longer-term medication regimens relative to most communicable diseases. Evidence from Bhutan shows that aggregate health system expenditures as well as per unit healthcare costs are increasing—even after controlling for inflation. Second, ageing can negatively impact general government and public health sector revenues as the population

[28] Philippine Information Agency. January 30, 2023. "PhilHealth urges members to avail Konsulta package." https://pia.gov.ph/news/2023/01/30/philhealth-urges-members-to-avail-konsulta-package [29] A Barcena et al. 2018. "Factors Associated with Utilization of Primary Preventive Services of Tamang Serbisyo para sa Kalusugan ng Pamilya (TSeKaP) among PhilHealth Indigent Members in Manila." ACTA MEDICA PHILIPPINA VOL. 52 NO. 3 2018 [30] Joint Learning Network for Universal Health Coverage. 2019. "Financing and Payment Models for Primary Health Care: Six Lessons from JLN Country Implementation Experience." [31] Lancet Global Health commission on financing primary healthcare .2021. https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(22)00005-5/fulltext [32] Lancet global Health Commission. 2021. [33] J N. Struijs et al. 2020. "Bundled-Payment Models Around the World: How They Work and What Their Impact Has Been." Commonwealth Fund, Apr. 2020). https://doi.org/10.26099/936s-0y65

dependency ratio increases and the size of the working age population decreases in relative terms.

**In response to changing disease and demographic patterns, Bhutan needs not just service delivery transformations, but also a transformation of its existing public health financing system.** Data from Bhutan shows that public expenditures on NCD prevention and control programs is low (0.2% of total health expenditures in FY2019/20),[34] while the direct economic cost of NCD has high, 41% of current health expenditures in FY2019/20 were linked to NCD-related diagnoses. Furthermore, nearly 10% of all admissions at Bhutan's referral hospitals are associated with NCDs that could have been managed in an outpatient setting with regular care management (i.e., ACSCs). These data, along with global experiences, suggest that an emphasis on strengthening and prioritizing PHC, including efforts to improve fiscal autonomy and flexibility of community level PHC centers, will be key. A more comprehensive and systematic look at the prevalence of ACSCs in hospital admissions in Bhutan can help health sector policymakers focus their attention on specific areas in the PHC system that require strengthening. Targeted investments in PHC improvement would help mitigate and manage the growing NCD burden and help improve overall efficiency of Bhutan's health financing system.

[34] Bhutan NHA FY2018/29 & FY2019/20. Pg15.