



Ministry of Health & Family Welfare  
Government of India



# FINANCIAL GAP ANALYSIS OF 5 NATIONAL HEALTH PROGRAMMES 2025





**FINANCIAL GAP ANALYSIS OF  
5 NATIONAL HEALTH PROGRAMME  
2025**

## Details related to Publication

National Health Systems Resource Centre (NHSRC) in collaboration with Management Sciences for Health (MSH) undertook an exercise to estimate the resource requirements for 5 priority areas: Non-Communicable Diseases (NCDs), Tuberculosis, Vector Borne Diseases (VBDs), Mental Health, and Trauma & Burns. The study, covering the entire population of India, adopted a normative costing approach. For the analysis, MSH's Primary Healthcare Costing, Analysis, and Planning (PHC-CAP) Tool was adopted to Programme Costing Analysis & Planning (PRO-CAP).

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# Acronyms

ACS	Acute Coronary Syndrome
CHC	Community Health Centre
CKD	Chronic Kidney Disease
Cr	Crore
DALY	Disability-Adjusted Life Years
GBD	Global Burden of Disease
GDP	Gross Domestic Product
GoI	Government of India
IEC	Information, Education and Communication
IHME	Institute for Health Metrics and Evaluation
MSH	Management Sciences for Health
NCD	Non-Communicable Diseases
NHM	National Health Mission
NHP	National Health Policy
NHSRC	National Health Systems Resource Centre
NMHP	National Mental Health Programme
NPCDCS	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke
NP-NCD	National Programme for Prevention and Control of NCDs (NP-NCD)
NPPMT&BI	National Programme for Prevention & Management of Trauma & Burn Injuries
NTEP	National Tuberculosis Elimination Programme
NSSO	National Sample Survey Office
NUHM	National Urban Health Mission
NVBDCP	National Vector-Borne Diseases Control Programme
OOP	Out-of-pocket
PHC	Primary Health Care
PHC-CAP	Primary Health Care Costing Analysis & Planning
Pro-CAP	Programme Costing Analysis & Planning
PMJAY	Pradhan Mantri Jan Aarogya Yojana
RoP	Record of Proceedings
SDG	Sustainable Development Goals
SHC	Sub Health Centre
STG	Standard Treatment Guidelines
STP	Standard Treatment Protocol
TB	Tuberculosis
UHC	Universal Health Coverage
USAID UT	United States Agency for International Development Union Territories
VBD	Vector-borne Disease
WHO	World Health Organization



## BACKGROUND

India has increased access to healthcare in recent decades, contributing to substantial improvements in health outcomes. Over the last twenty years, life expectancy has increased, infant and maternal mortality have decreased, and total fertility has declined, for example. This progress has been facilitated by several national and state policies and programme, including India's National Health Policy (NHP) 2017 (National Health Policy, 2017) which set out the agenda for accelerating progress toward universal health coverage (UHC) in the country. Despite the significant progress achieved, many of India's health indicators continue to lag those of peer countries, as highlighted by the 15th Finance Commission. Moreover, India's national data mask important variations in health outcomes across states, with certain states like Kerala and Tamil Nadu having far better health outcomes than states like Bihar and Uttar Pradesh, for example (Finance Commission India, 2020). Inequalities in many health outcomes also persist when comparing across rural/urban, income, caste, and religion categories (Ahmad & Mahapatro, 2023). Substantial improvements will be required if India is to achieve its national objectives, UHC targets, and the Sustainable Development Goals (SDGs) by 2030.

To achieve these objectives, India will need to increase its expenditures on health over the next few years, and efforts will be needed to ensure that available resources are allocated and spent as efficiently as possible.

## METHODS

The National Health Systems Resource Centre (NHSRC) and Management Sciences for Health (MSH) sought to adapt MSH's Primary Health Care Costing, Analysis and Planning (PHC-CAP) tool to identify normative costs and current allocations for five priority programme/areas of the Ministry of Health & Family Welfare (MoHFW)- Non Communicable Diseases (NCDs), Tuberculosis (TB), Vector Borne Diseases (VBDs), Mental Health, and Trauma & Burns. The normative costs (ideal cost of providing specified list of services of a certain quality care to treat a particular disease condition at target coverage levels) and allocations were determined using Union and State/Union Territory (UT) budgets data and utilisation data from the National Sample Survey Office (NSSO) data for health and morbidity 2017-18 (NSS-HS) and the package rate data from the Pradhan Mantri Jan Aarogya Yojana (PMJAY).

The normative costing used a hybrid approach including top-down and bottom-up methodology. To estimate normative facility-based costs, standard treatment protocols (STPs) were built to reflect the resources needed to treat conditions included in the programme (in accordance with latest available programme guidelines) with evidence-based recommendations and expert opinion. These costs were derived from several different data sources. These data were then inputted into the Programme Costing, Analysis and Planning (Pro-CAP) tool to obtain the normative costs for delivering services within priority programmes.

A top-down approach was utilised to define the current Union and State budget allocations for the five programmes. Using utilisation data, we also estimated current population coverage and set target coverage for each programme based on programme goals to be achieved over flexible time frames. This comparison enabled us to define the gap between current allocations and the needed budget to achieve the short-term targets for each programme, as well as the final goal of reaching UHC in India.

## RESULTS

Estimates for the five priority programmes are presented below.

Cost estimates for five priority programmes (INR Crores)	
Priority Areas	Additional resources required
Non Communicable Diseases	69,768
Tuberculosis	10,686
Vector Borne Diseases	8,294
Mental Health	6,683
Trauma & Burns	8,665
Total	104,097

## KEY TAKEAWAYS

Findings indicate that further prioritisation of funding is needed to enable improved programme outcomes. Of course, it is unrealistic to expect that the gaps would be filled in one year with a large budget increase. The financing for these gaps can be planned for over flexible time periods, with policymakers able to adjust targets as needed. Findings also highlight the resource needs, i.e., human resources, equipment, drugs, and other cost drivers required to fulfill treatment protocols and deliver care of appropriate quality at each level of care. New initiatives might help offset costs (for example, Ayushman Arogya Mandirs or the new TELEMNAS programme in the case of mental health). While emphasis on further investments in public health care is necessary, additional insight is also needed on state utilisation of funds and opportunities to improve efficiency of health spending.

## BACKGROUND

India's rapidly changing population and subsequently its healthcare needs demand continuous evaluation of the health care system. The population of India has grown exponentially over the last several decades, presenting new challenges for providing accessible and equitable UHC (UN DESA, 2023). In 2021, the World Bank reported India's gross domestic product (GDP) as USD 3.176 trillion – the second highest in Asia behind China (World Bank, 2023).

India has increased access to healthcare in recent decades, contributing to substantial improvements in health outcomes. Over the last twenty years, life expectancy has increased, infant and maternal mortality have decreased, and total fertility has declined, for example. This progress has been facilitated by several national and state policies and programmes, including India's NHP 2017, which set out the agenda for accelerating progress toward universal health coverage (UHC) in the country.

Despite the significant progress achieved, many of India's health indicators continue to lag behind those of peer countries, as highlighted by the 15th Finance Commission. Moreover, India's national data mask important variations in health outcomes across states, with certain states like Kerala and Tamil Nadu having far better health outcomes than states like Bihar and Uttar Pradesh, for example. Inequalities in many health outcomes also persist when comparing across rural/urban, income, caste, and religion categories. Substantial improvements will be required if India is to achieve its national objectives, UHC targets, and the SDGs by 2030.

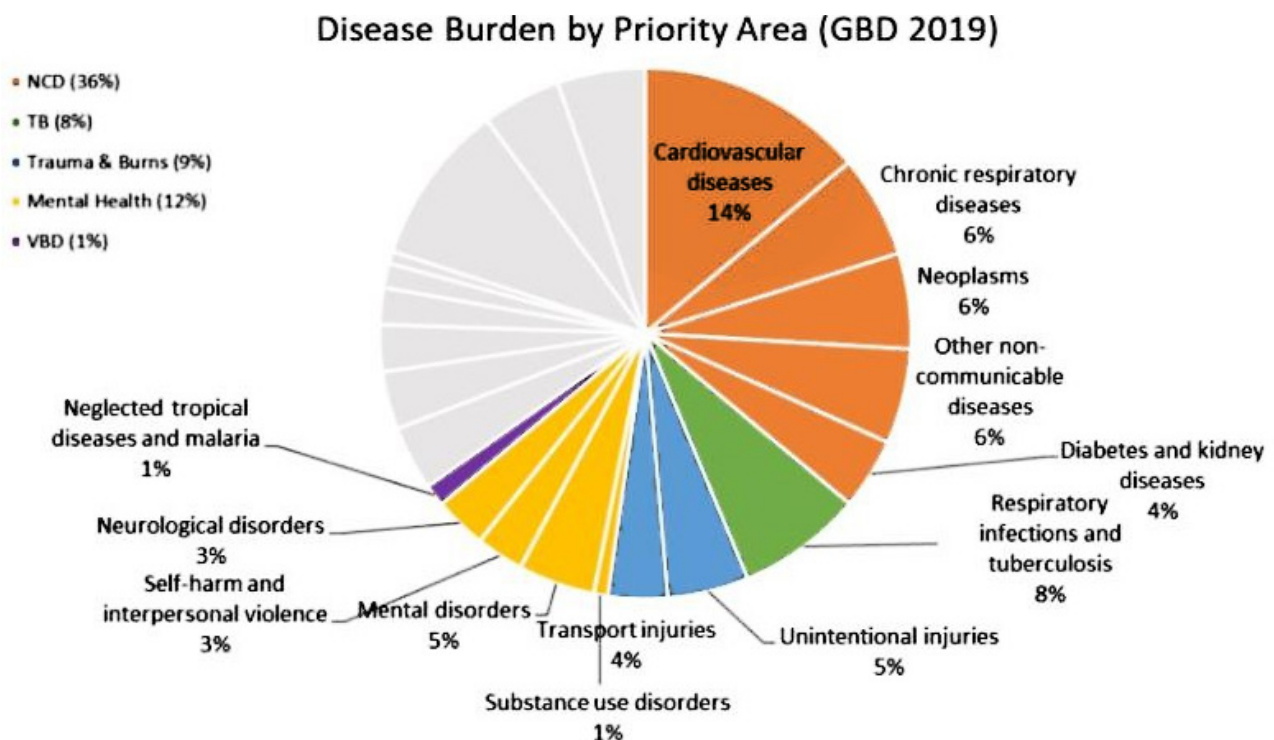


FIGURE 1: DISEASE BURDEN BY PRIORITY AREAS

## Burden of Disease

India's rapid population growth and progress towards economic development signifies a changing burden of disease common to many low- and middle-income countries. In 2019, non-communicable diseases (NCDs) such as heart disease and stroke outpaced diarrheal disease, tuberculosis (TB), and other communicable diseases as the leading cause of death (CDC, 2023). As NCDs become more common, however, infectious diseases remain – India represents 58% of the malaria cases in Southeast Asia (WHO, 2023) and a variety of other vector-borne diseases (VBD) such as dengue fever and kala azar are still highly prevalent. TB, in particular, also poses a major challenge – the COVID-19 pandemic contributed to a 25% decrease in case notifications between 2019 and 2020, and India's share of TB currently accounts for roughly 25% of the global burden (including both TB and drug resistant -TB) (Sahu et. al, 2021). Mental health represents another growing challenge; in 2017, 197.3 million people in India reported experiencing some type of mental disorder (Sagar et. al, 2019). Finally, due to a higher informal workforce and other environmental factors (Nag, Vyas & Nag, 2016), unintentional injuries alone represent nearly 5% of the total disability-adjusted life years (DALYs) in India (Institute for Health Metrics and Evaluation (IHME) Global Burden of Disease (GBD), 2019). Mental health, NCDs, TB, VBD, and trauma and burns represent 66% of India's burden of disease, as shown in Figure 1.

## Health Financing Profile

In India, there are two major sources of finances for health expenditure in the country- Government Health Expenditure and Out-of-Pocket Expenditure by the households. Government Health Expenditure (GHE) includes health expenditure by both Union and State governments and accounts for 48% of Total Health Expenditure (THE) in 2021-22<sup>1</sup>. Within the Government Health Expenditure, the state is the major contributor with its share in total government health expenditure being around 60%<sup>2</sup>. As health is a state subject, most of the programmes are run by the state governments. The Union government contributes to GHE through Centrally Sponsored Schemes, Central Sector Schemes, and other components such as central hospitals and national institutes. Out-of-pocket expenditure remains the major source of finance for health expenditure in the country as it accounts for around 40% of the Total Health Expenditure (THE) in the country.

Numerous initiatives have been undertaken by the government to address the health needs of the population. The National Health Mission (NHM) is an important centrally sponsored scheme of the government that includes all priority health programmes. Along with NHM, other important initiatives include public health insurance to provide more financial risk protection through the Pradhan Mantri Jan Arogya Yojana (PMJAY) programme, improving health infrastructure through Pradhan Mantri Ayushman Bharat Health Infrastructure Mission, and providing comprehensive primary healthcare services through Ayushman Arogya Mandir (erstwhile Ayushman Bharat Health and Wellness Centres, etc.)

All public health services, including inpatient and outpatient visits, are mostly offered free of charge with the government acting as the provider. Along with providing health services, the Government, through publicly financed health insurance schemes such as PMJAY have provision for purchasing health services from private providers. Along with the government, private providers also offer both inpatient and outpatient care services which are either paid directly through OOPE or health insurance.

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1. National Health Accounts 2021-22. Available at <https://nhsrcindia.org/national-health-accounts-records>.
  2. National Health Accounts Various Years. Available at <https://nhsrcindia.org/national-health-accounts-records>.

## Need for Costing Activity

The country's complex health systems need regular assessments of current expenditures and fund flows to use existing resources effectively, plan for future investments, and ensure diverse population needs are met. National and state policymakers must identify health priorities, bottlenecks, and inefficiencies within their respective geographic contexts. This will determine how to strategically allocate current and new resources to create a comprehensive plan that ensures equitable health service coverage and increase access to care for marginalised population.

India seeks to grow its government contributions to health, expand coverage for more of the population, and improve allocative efficiency. An essential step to achieving UHC is to fully understand the costs. Knowing the cost of health service delivery will increase wise and efficient investments, the ability to monitor value for money, and ensure adequate resource planning for the future. We have undertaken the first step required for productive and effective policy decisions by evaluating the costs of 5 national health programmes of MoHFW, as well as the funding currently available. While many costing studies have been undertaken in India, the project undertook a new methodology that has never been used in India before. This methodology covers the entire geography of India while allowing for population and geographical differences. The specific strengths of the method are outlined below.

## ACTIVITY

The NHSRC and MSH sought to conduct a series of analyses on financing for priority national health programmes and the cost of providing services.

By adapting the Primary Health Care Costing, Analysis and Planning (PHC-CAP) tool (MSH, 2023) compared normative funding requirements against budget allocations to analyse the financial gap required to achieve programme targets.

## Main Objectives

1. Estimate the normative funding requirements of providing healthcare services in five priority programmes as per the government guidelines, representing the ideal cost of providing quality care efficiently at target coverage levels.
2. Compare the normative funding needs for the five priority programmes against the current budgeted amounts and estimate the financing gaps.

## Partners and Collaboration

The assignment was conducted in collaboration between NHSRC and MSH with the support of Jhpiego. Funding for this assignment is provided by USAID through Jhpiego (NISHTHA) and MSH.

## PRIORITY AREAS

Five priority areas identified for the exercise are:

- NCDs (i.e. cardiovascular diseases, cancer, diabetes, chronic respiratory diseases)
- Tuberculosis
- Vector-borne Diseases (Malaria, Lymphatic Filariasis, Dengue Fever, Chikungunya)
- Mental Health
- Trauma & Burns



# 03 Methodology

## NORMATIVE COSTING

The normative costing approach used a hybrid methodology. Recurrent normative costs for specific programmes delivered at various levels of care as practiced in India were defined using an approach dependent on the availability and quality of input cost data available. Costs for public primary health facilities (Sub Health Centre, Primary Healthcare Centres) were calculated using Standard Treatment Protocols (STPs), which reflect the average resources needed to treat a patient for a specific illness or service. For the recurrent costs of services at public secondary and tertiary facilities, we used reimbursement data available from the publicly funded health insurance scheme, PMJAY. Where disaggregate data were not available, cost data were sourced from previously conducted costing studies in India. See Table 1 below for a summary of the data requirements and data sources for the normative costing. Building on the MSH PHC-CAP costing tool, we followed these steps to estimate the direct normative costs of services in the priority programmes provided at primary facilities:

- Cross-referencing the list of services for each priority programme with those included in the MSH PHC costing study and programme-specific guidelines.
- The STPs were created based on Government of India (GoI) standard treatment guidelines (STGs). All STPs developed were reviewed by experts (physicians with expertise in psychiatry, trauma, vector-borne disease, TB, and chronic disease in the Indian context) selected by the NHSRC.
- Costed all recurrent inputs included in additional STPs including state variation to the extent possible (i.e., establishing staff salary bands and allowances);
- Edited inputs and input costs as necessary for the STPs included in the MSH PHC costing study to ensure alignment with the latest government STGs and the cost structures of each state.
- Estimated populations in need for each service for each state using target coverage data obtained from the NHSRC, state population projections based on the 2011 census and sourced from the GBD database.
- Estimated facility level overhead or indirect costs for primary facilities with top-down methodology from state budgets to compare only facility-based service delivery costs.

To estimate the normative costs of services in the priority programmes provided at secondary and tertiary facilities, we proceeded as follows:

- Aggregated detailed PMJAY package rate for each state to map onto higher level services. Services for which there is no PMJAY package rate were costed following the same approach used for PHC services. Currently, the STPs include all PHC services, even those delivered at higher levels.
- Estimated populations in need for each service for each state using target coverage data obtained from the NHSRC, state population projections based on the 2011 census, and disease/condition incidence data provided by the NHSRC or sourced from the GBD database.
- For cancer treatment and inpatient treatment of trauma and burns, we were unable to obtain treatment information in the level of detail needed to arrive at reasonable estimate. We elected to establish an average per case cost by using utilisation data (NSSO) through a top-down methodology.

TABLE 1: NORMATIVE COSTING DATA REQUIREMENTS AND DATA SOURCES

Services	Data required	Data sources
<b>All services</b>	List of services to be costed for each of the five priority programmes	Programme guidelines, and STGs as prescribed by the government <sup>3</sup> .
	Distribution of services by facility type	Programme Guidelines GoI STGs of the national programmes by MoHFW
	Size of state populations	GoI population projections based on the 2011 Indian Census of MoHFW <sup>4</sup> .
	Size of population in need	IHME GBD Study 2019 data, epidemiological and medical literature
	Baseline and targeted service coverage levels	Programme specific target levels obtained from National Strategic Plans
<b>Primary health services</b>	Standard treatment protocols, detailing direct recurrent inputs for each service and facility type	GoI STGs, consultations with Indian area experts
	Unit prices for each input	Existing state contract rates and established treatment costs, state salary information for HRH provided by the NHSRC
<b>Secondary/tertiary services</b>	PMJAY package rate	Package rate PMJAY, available on the website

## ACTUAL COSTING

For each of the priority programmes, we focused on actual expenditures treating/managing the conditions, activities to prevent the conditions, as well as general administration and health-related expenditures (e.g., research and development, training, cash or in-kind transfers), general community outreach spending, and capital expenditures. See Table 2 below for a summary of the data requirements and data sources for the actual expenditure assessment.

The assessment of allocation by the Government for the selected programme focused on budget estimate for 2022-23 obtained from Budget documents from both Union and States

Within union/state budgets, line items that were exclusively attributable to one of the priority programmes were assigned accordingly. ROPs for 2020-21, submitted by the state governments and approved by the GoI, were used to unbundle NHM state budget line items and appropriately allocate relevant resources to the priority programmes. To allocate budget line items for health facilities and centrally procured drugs to the priority programmes, we used data from the NSS Household Social Consumption: Health

- Programme guidelines and STGs were collected from websites of MoHFW, ICMR, NHSRC, and state governments.
- Population Projections for India and States (2011-2036): [https://mohfw.gov.in/sites/default/files/Population%20Projection%20Report%202011-2036%20-%20upload\\_compressed\\_0.pdf](https://mohfw.gov.in/sites/default/files/Population%20Projection%20Report%202011-2036%20-%20upload_compressed_0.pdf)

75 th Round Survey (2017-18) (NSO, 2019). This survey includes self-reported health and morbidity related utilisation and expenditure data. The relevant outpatient and inpatient utilisation data for specific disease conditions reported in the survey were mapped onto the priority programmes. Outpatient data alone was used to allocate budget line items for primary health facilities (Primary Health Centre (PHC) and Sub Health Centre (SHC) line items). Both outpatient and inpatient data informed the allocation of Community Health Centre (CHC)/secondary/tertiary line items. Proportions of outpatient and inpatient costs were estimated and for each priority programme average PMJAY prices were estimated and applied to the inpatient populations in each state.

**TABLE 2: ACTUAL EXPENDITURE ASSESSMENT DATA REQUIREMENTS AND DATA SOURCES**

<b>Data required</b>	<b>Data sources</b>
Numbers of facilities by facility type in each state	Rural Health Statistics
List of services currently provided at each facility type	National programme guidelines
Service utilisation by state, facility type, and service	National Sample Survey (NSS) on Health and Morbidity (75th Round) 2017-18.
Union government and state health expenditures	Union and State budgets & RoPs
NHM/NUHM expenditures	NHM Record of Proceedings (ROPs)
Allocation weights to allocate state budget line items on expenditures at primary/secondary/tertiary facilities and centrally procured drugs	National Sample Survey (NSS)
Allocation weights to separate above facility, facility, and below facility expenditures in general or unspecified programme expenditures	Union and state budgets, & ROPs



## GAP SIZE

When comparing allocated funds to normative costs needed to reach coverage targets, we saw variation in the exact amount of the resource gaps, but all were large. Table 3 details the gaps for each of the five programmes.

**TABLE 3: GAP IN RESOURCES TO ACHIEVE SPECIFIED TARGET COVERAGES OF 5 PROGRAMMES**

Indicator	NCD	TB	VBD	Mental Health	Trauma & Burns	Total
Current coverage/ Current Utilisation of Public Facilities	32%	50%	29%	10%	50%	-
Target coverage/ Target utilisation of public facilities	40%	100%	50%	15%	75%	-
2022-23 Allocations (INR Crores)	22,383	4,192	4,039	4,026	15,837	50,477
Normative costs (target coverage, INR Crores)	92,151	14,878	12,334	10,708	24,502	154,574
Gap between current allocations and target normative costs (INR Crores)	69,768	10,686	8,294	6,683	8,665	104,097

The current coverage indicates how much of the population in need receives services from government facilities. This helps answer the question of what the current allocation actually buys in terms of services delivered and financed by the programme. This metric answers the question of what the programme would like to buy in terms of how many people in need should benefit from these services. The current allocation of 2022-2023 is only what has been budgeted. This includes only service delivery or facility based costs and excludes capital costs, administrative costs, and programme costs for IEC. It is not reflective of the money actually spent as this information is only available two years after the fiscal year.

The annual normative costs reflect the amount needed to fully finance quality care according to programme guidelines for all the services included in the programme. The gap between the current allocations and normative costs indicates additional resources required for effective service delivery under each of the programme under target coverage. Each of these programmes has different reasons for the resource gaps, including cost drivers, human resources, and distribution of services. While we will not analyse each programme deeply, we will demonstrate potential further gap analysis through specific examples.

# COST DRIVERS

Below, we have illustrated the cost drivers of each of the 5-priority areas by inputs:

FIGURE 2: COST DRIVERS

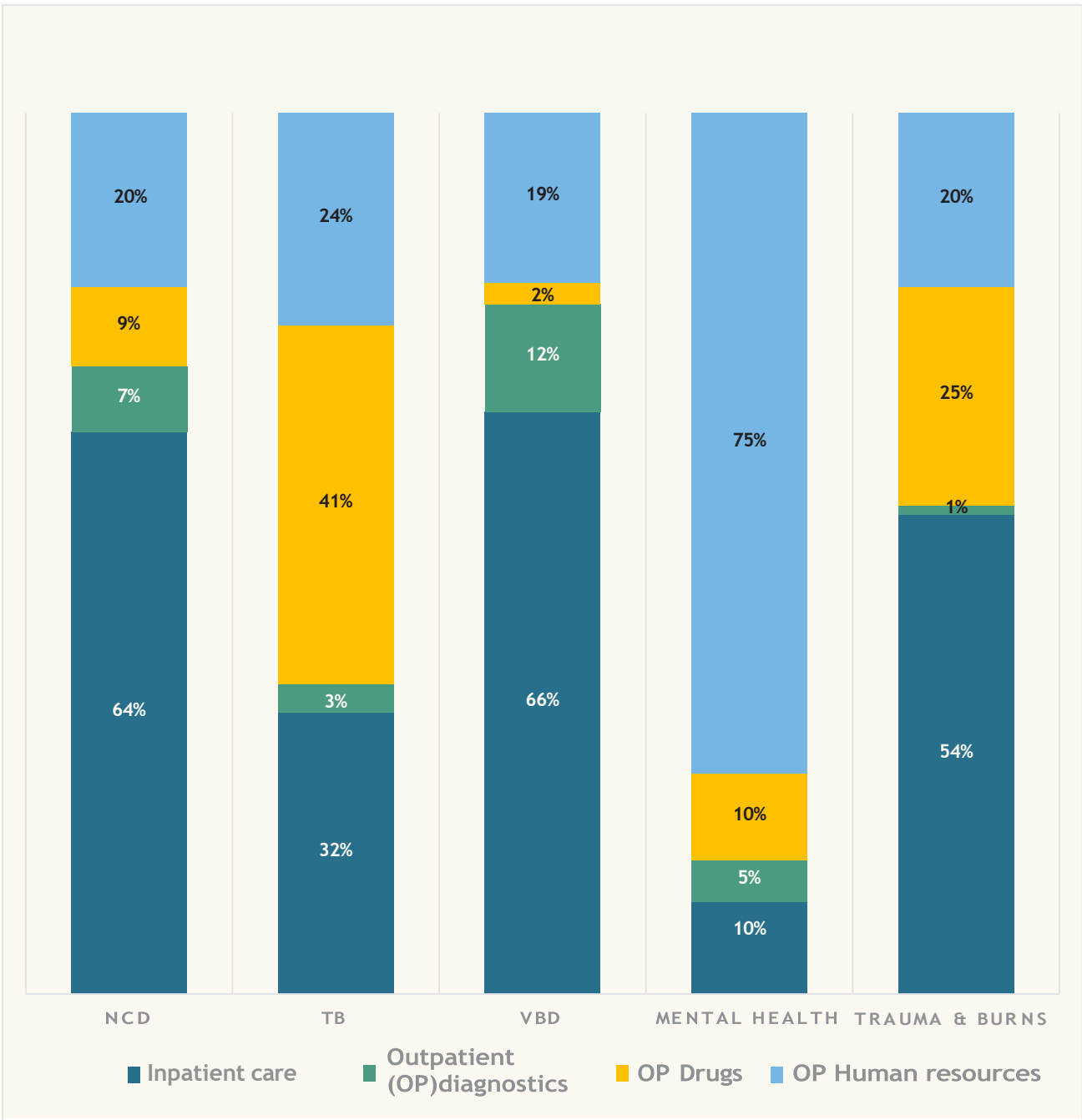


TABLE 4: DISTRIBUTION OF NORMATIVE COSTS BY CAUSE

Distribution of normative costs by cause		
Cause	Gap (INR Cr)	% col
Acute Coronary Syndrome	12,749	12%
Hemodialysis	11,033	11%
Hypertension	10,436	10%
Diabetes 2	9,139	9%
Injuries	8,291	8%
Stroke	6,279	6%
Cancer treatment	5,203	5%
Cancer screening	3,263	3%
Mood disorders	3,570	3%
Substance abuse	673	1%
Other non-communicable diseases*	14,480	14%
Tuberculosis	10,686	10%
Other communicable diseases**	8,294	8%
Total	104,097	100%
<p>* Other services covered by the NCD programme (Chronic Stable Angina, COPD, Cancer diagnoses, etc.), the Mental Health programme (early detection, learning disabilities, epilepsy, etc.), and the Trauma programme (burns).</p> <p>** Other causes covered by the VBD programme (Malaria, dengue, Chikungunya, Filariasis, Japanese Encephalitis and Visceral Leishmaniasis)</p>		

In Table 4 (above), we see a further breakdown of the major cost drivers by disease. Due to treatment options, intensity of illness, and resources needed, we see that some diseases will need more financing. Some were expected to be high cost-drivers, such as cancer treatment. As mood disorders and other psychiatric illnesses rise in prevalence and presentation to facilities, it is important for government officials and policy makers to note that such illnesses will need significant financing. A deeper dive into the cost drivers can provide programmes and policy makers guidance on where to focus preventive efforts, look for efficiency gains (integrating care, task-shifting, etc.), and anticipate a growing resource demand.

# 05 Discussion

## STRENGTHS OF THE METHODOLOGY

This is the most detailed and rigorous costing study the NHSRC has undertaken to date. As such, the exercise added significant value to policy discussions.

The bottom-up methodology through detailed STPs does not just cost healthcare, but rather quality healthcare in accordance with expert-curated guidelines. By incorporating expert recommendations, evidence-based guidelines, detailed burden of disease statistics, and detailed price inputs, we are able to arrive at costing estimates to guide policy and budgeting grounded in the healthcare needs of specific populations. Furthermore, by using state-specific burden of disease statistics, we were able to determine each state's needs more accurately. India is diverse in epidemiological transitions and geographic burden of disease. This costing exercise allows for further allocative efficiency at the state level.

The methodology of the STPs allows for alignment between local guidelines, epidemiological considerations (i.e. antibiotic resistance), human resource skills and training, and local availability of resources. The STPs are adjustable from state to state and year to year, allowing for changes in practices to follow new evidence and integrate new technology.

Once the normative cost structure has been established, the resources required to provide quality care in accordance to programme guidelines is compared to the resources available to achieve coverage targets for priority programmes. This provides a snapshot of the current fiscal space for the year. Policymakers can assess priorities for immediate funding and set goals for funding in the future.

## LIMITATIONS OF THE METHODOLOGY

As this is the first iteration of this sort of normative costing exercise of National Health Programme, certain limitations of the data exists. While further steps are planned to mitigate the current limitations, we recognise the following:

- STPs were not readily available for many services required for the normative costing and required extensive work to generate from government STGs. Individual programme experts reviewed all STPs; however, a more comprehensive review (i.e. through a panel) would enhance their content and acceptability.
- The costs listed are only facility-level service delivery costs – we are not comparing capital costs, community-level service cost, or IEC. To avoid perpetuating inefficiencies and disregarding economies of scale when scaling up services, we did not include these costs when forecasting needs for broader coverage.
- The year of the data sources is not the same, but generally, we used the most recent available data, e.g., NSS data is for 2017-18, GBD data is for 2019, and budget data is for 2022-2023. Ideally, we'd use actual expenditure data, but the most recent available data is from 2020-21 (t-2).
- We were able to extract drugs and diagnostic price data from nine states. We used an average of these prices for all states. A small percentage of inputs were not available via state-level contract rates, so the input prices were obtained from other sources (i.e. online marketplaces, point of care).

Noting the massive amounts of resources needed to reach coverage targets with the healthcare outlined in the guidelines, this study brings up the question of the feasibility of reaching these targets and in what timeframe. Saying that such targets are impossible and therefore should not be set is certainly not the answer. This costing study can guide further probing questions and begin to answer some of the important questions above by offering information on where the largest and most serious gaps exist.

This costing exercise was undertaken as a first step to providing quality estimates for future planning and policy discussions. The tool has the versatility to give broad estimates and specific studies in services and prioritisation.

Through this costing exercise, policymakers will have data to identify services that are in the highest demand, human resources that have a severe shortage, and the resources needed to fund specific services, like screening or treatment of hypertension.

# 07 References

- Ahmed, S., & Mahapatro, S. (2023). Inequality in healthcare access at the intersection of caste and gender. *Contemporary Voice of Dalit*, 15(1\_suppl). <https://doi.org/10.1177/2455328x221142692>
- Bahuguna, P., Guinness, L., Sharma, S., Chauhan, A. S., Downey, L., & Prinja, S. (2020). Estimating the Unit Costs of Healthcare Service Delivery in India: Addressing Information Gaps for Price Setting and Health Technology Assessment. *Applied health economics and health policy*, 18(5), 699–711. <https://doi.org/10.1007/s40258-020-00566-9>
- CDC in India - Centres for Disease Control and Prevention. (2023, February). [https://www.cdc.gov/globalhealth/countries/india/pdf/India\\_2023.pdf](https://www.cdc.gov/globalhealth/countries/india/pdf/India_2023.pdf)
- Chandra, A., Kumar, R., Kant, S., Parthasarathy, R., & Krishnan, A. (2020). Direct and indirect patient costs of tuberculosis care in India. *Tropical medicine & international health : TM & IH*, 25(7), 803–812. <https://doi.org/10.1111/tmi.13402>
- Chatterjee, S., Toshniwal, M. N., Bhide, P., Sachdeva, K. S., Rao, R., Laurence, Y. V., Kitson, N., Cunnam, L., Vassall, A., Sweeney, S., & Baena, I. G. (2021). Costs of TB services in India (No 1). *The international journal of tuberculosis and lung disease : the official journal of the International Union against Tuberculosis and Lung Dis-ease*, 25(12), 1013–1018. <https://doi.org/10.5588/ijtld.21.0105>
- Garg, C. C., & Goyanka, R. (2023). A comparison of the cost of outpatient care delivered by Aam Aadmi Mohalla clinics compared to other public and private facilities in Delhi, India. *Health Policy and Planning*, 38(6), 701–707. <https://doi.org/10.1093/heapol/czad033>
- Garg, S., Tripathi, N., Ranjan, A., & Bebarta, K. K. (2021). Comparing the average cost of outpatient care of public and for-profit private providers in India. *BMC Health Services Research*, 21(1). <https://doi.org/10.1186/s12913-021-06777-7>
- GBD India. Institute for Health Metrics and Evaluation. (2019). <https://vizhub.healthdata.org/gbd-compare/india#0>
- GDP (current US\$) - India. World Bank Open Data. (n.d.). <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=IN>
- Gupta, I. (2020, June 5). International Health Care System Profiles: India. Commonwealth Fund. <https://www.commonwealthfund.org/international-health-policy-Centre/countries/india>
- Jeet, G., Masaki, E., Vassall, A., & Prinja, S. (2021). Costing of essential health service packages: A systematic review of methods from developing economies. *Value in Health*, 24(11), 1700–1713. <https://doi.org/10.1016/j.jval.2021.05.021>
- Kaur, G., Chauhan, A. S., Prinja, S., Teerawattananon, Y., Muniyandi, M., Rastogi, A., Jyani, G., Nagarajan, K., Lakshmi, P., Gupta, A., Selvam, J. M., Bhansali, A., & Jain, S. (2022). Cost-effectiveness of population-based screening for diabetes and hypertension in India: an economic modelling study. *The Lancet. Public Health*, 7(1), e65–e73. [https://doi.org/10.1016/S2468-2667\(21\)00199-7](https://doi.org/10.1016/S2468-2667(21)00199-7)

- Math, S. B., Gowda, G. S., Basavaraju, V., Manjunatha, N., Kumar, C. N., Enara, A., Gowda, M., & Thirthalli, J. (2019). Cost estimation for the implementation of the Mental Healthcare Act 2017. *Indian Journal of Psychiatry*, 61(Suppl 4), S650–S659. [https://doi.org/10.4103/psychiatry.IndianJPsychiatry\\_188\\_19](https://doi.org/10.4103/psychiatry.IndianJPsychiatry_188_19)
- Monga, D., Verma, R., Kumar, D., Grover, G. S., Chauhan, A. S., M Lakshmi, P. V., & Prinja, S. (2022). Cost of Nation-al Vector Borne Disease Control Programme in North India. *The Indian journal of medical research*, 155(1), 22–33. [https://doi.org/10.4103/ijmr.IJMR\\_2011\\_18](https://doi.org/10.4103/ijmr.IJMR_2011_18)
- Mor, N., & Shukla, S. K. (2023). Estimating funds required for UHC within Indian States. *The Lancet regional health. Southeast Asia*, 13, 100165. <https://doi.org/10.1016/j.lansea.2023.100165>
- Nag, A., Vyas, H., & Nag, P. (2016). Occupational health scenario of Indian informal sector. *Industrial Health*, 54(4), 377–385. <https://doi.org/10.2486/indhealth.2015-0112>
- National Health Policy, 2017 - Ministry of Health and Family Welfare. (2017). <https://main.mohfw.gov.in/sites/default/files/9147562941489753121.pdf>
- National Statistics Office, Ministry of Statistics and Programme Implementation. (2019, November). Key Indicators of Social Consumption in India: Health. [https://mospi.gov.in/sites/default/files/publication\\_reports/KI\\_Health\\_75th\\_Final.pdf](https://mospi.gov.in/sites/default/files/publication_reports/KI_Health_75th_Final.pdf)
- Pollard, R., Enugu, A., Sriudomporn, S., Bell, J., Ghosh, S. C., Arumugam, V., Mugundu, P., Singh, A., McFall, A. M., Mehta, S. H., Patenaude, B. N., & Solomon, S. S. (2022). COVID-19 impact on index testing services and programmatic cost in 5 high HIV prevalence Indian districts. *BMC infectious diseases*, 22(1), 918. <https://doi.org/10.1186/s12879-022-07912-3>
- PHC Costing, Analysis, and Planning (PHC-CAP) Tool. Management Sciences for Health. (2023, April). <https://msh.org/resources/phc-costing-analysis-and-planning-phc-cap-tool/>
- Prinja, S., Jeet, G., Verma, R., Kumar, D., Bahuguna, P., Kaur, M., & Kumar, R. (2014). Economic analysis of delivering primary health care services through community health workers in 3 North Indian states. *PloS one*, 9(3), e91781. <https://doi.org/10.1371/journal.pone.0091781>
- Prinja, S., Gupta, A., Verma, R., Bahuguna, P., Kumar, D., Kaur, M., & Kumar, R. (2016). Cost of Delivering Health Care Services in Public Sector Primary and Community Health Centres in North India. *PloS one*, 11(8), e0160986. <https://doi.org/10.1371/journal.pone.0160986>
- Ranganadham Srinadh. (2020, May 1). Morbidity, health-seeking behaviour and out-of-pocket expenditure among large Indi-an states. NITI Aayog. <https://www.niti.gov.in/morbidity-health-seeking-behaviour-and-out-pocket-expenditure-among-large-indian-states>
- Report of Fifteenth Finance Commission for 2021-26. (2020). <https://fincomindia.nic.in/ShowContent.aspx?uid1=3&uid2=0&uid3=0&uid4=0>
- Sagar, R., Dandona, R., Gururaj, G., Dhaliwal, R. S., Singh, A., Ferrari, A., Dua, T., Ganguli, A., Varghese, M., Chakma, J. K., Kumar, G. A., Shaji, K. S., Ambekar, A., Rangaswamy, T., Vijayakumar, L., Agarwal, V., Krishnankutty, R. P., Bhatia, R., Charlson, F., Dandona, L. (2020). The burden of mental disorders across the States of India: The global burden of disease study 1990–2017. *The Lancet Psychiatry*, 7(2), 148–161. [https://doi.org/10.1016/s2215-0366\(19\)30475-4](https://doi.org/10.1016/s2215-0366(19)30475-4)
- Sahu, S., Ditiu, L., Sachdeva, K. S., & Zumla, A. (2021). Recovering from the Impact of the Covid-19 Pandemic and Accelerating to Achieving the United Nations General Assembly Tuberculosis Targets. *International Journal of Infectious Diseases*, 113 Suppl 1, S100–S103. <https://doi.org/10.1016/j.ijid.2021.02.078>

Selek, S., & Marques, M. (2021, July 31). An overview of the Mental Health Crisis with COVID-19 in India. Harvard University Accountability in Action.

<https://projects.iq.harvard.edu/aia/news/overview-mental-health-crisis-covid-19-india>

Singh, D., Prinja, S., Bahuguna, P., Chauhan, A. S., Guinness, L., Sharma, S., & Lakshmi, P. V. M. (2021). Cost of scaling-up comprehensive primary health care in India: Implications for universal health coverage. *Health policy and planning*, 36(4), 407–417. <https://doi.org/10.1093/heapol/czaa157>

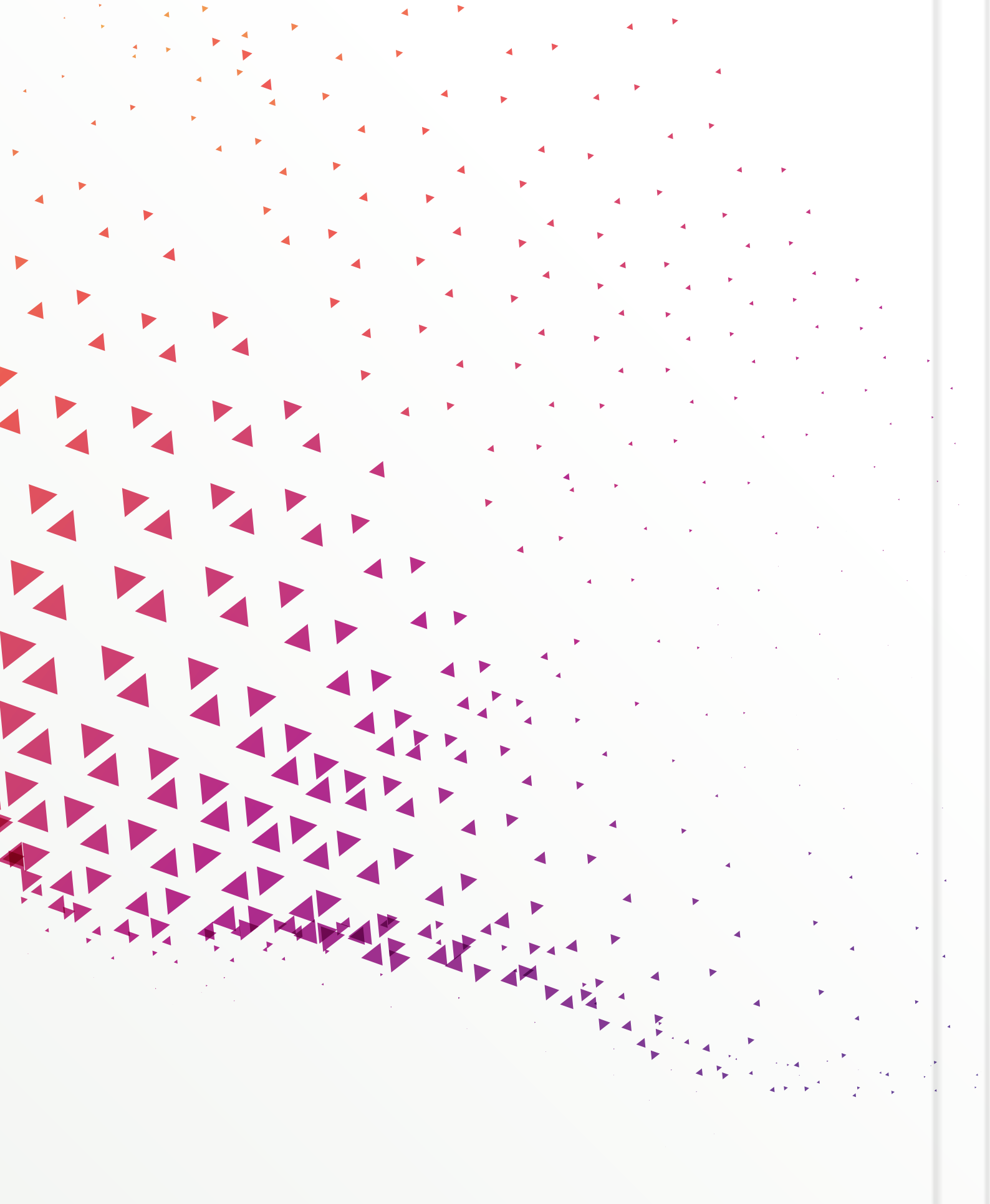
United Nations Department of Economic and Social Affairs. (2023, April 24). UN DESA Policy Brief No. 153: India overtakes China as the world's most populous country | Department of Economic and Social Affairs. United Nations. <https://www.un.org/development/desa/dpad/publication/un-desa-policy-brief-no-153-india-overtakes-china-as-the-worlds-most-populous-country/>

Wu, D. C., Banzon, E. P., Gelband, H., Chin, B., Malhotra, V., Khetrapal, S., Watkins, D., Ra, S., Jamison, D. T., & Jha, P. (2020). Health-care investments for the urban populations, Bangladesh and India. *Bulletin of the World Health Organization*, 98(1), 19–29. <https://doi.org/10.2471/BLT.19.234252>

World Health Organization. (2023). Malaria. World Health Organization. <https://www.who.int/india/health-topics/malaria>







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