Health expenditures on noncommunicable diseases and mental health: What can health accounts tell us?

Technical background paper #1:

Technical background papers have been developed by a team of staff from the WHO, the World Bank and the University of Washington with the input of contracted consultants, as needed; all papers have benefited from the review and feedback of an External Technical Expert Group appointed to support the International dialogue on sustainable financing for NCDs and mental health. The papers will undergo further review by the WHO and the World Bank; therefore, they do not represent the official positions of both organizations. The papers are the property of the WHO and the World Bank. They may only be downloaded for the purpose of this web consultation and their content cannot be used for any other purpose.

Summary

- Accurate and timely information on the source, type and distribution of expenditures on health, both in general and for particular disease entities such as noncommunicable diseases (NCDs), is essential for sector-wide health planning and monitoring.
- Examination of the global health expenditure database reveals that 59 countries have generated health expenditure data on NCDs and conditions over the period 2013-2021, mainly low and lower middle-income countries of the Africa Region. The maximum figure for a single year was 35 countries.
- For a selected subset of countries – 11 from the African Region for the period 2015-2019 – per capita spending on NCDs and mental health conditions ranged from US$ 2 (in DRC) to US$ 80 (in Gabon), with CVD making up the biggest share; mental health conditions accounted for no more than 10% of the total for NCD. Direct out-of-pocket spending accounts for 74% of total NCD spending in these 11 countries.
- Disease-specific Health Accounts carried out in higher-income countries – e.g. Armenia, North Macedonia – show a very different profile, both in terms of absolute levels of expenditure (e.g. ~US$ 300 per capita on NCDs in Armenia) and as a proportion of total spending (e.g. 38% on mental health in North Macedonia).

Key Messages

- Health accounts can contribute to the policy relevant monitoring of NCDs and mental health, e.g. revealing the extent of OOP spending as a proportion of total current health expenditures, the distribution of spending for specific diseases, or principal drivers of cost.
- However, most countries are not currently generating (or not reporting) disease-specific health accounts, and there remain important gaps and limitations (e.g. inaccurate or under-reporting of spending on NCD prevention or on NCD / mental health services provided at PHC level or outside the health sector, such as home care).
- To enhance the understanding of current spending patterns for NCDs and mental health conditions, there is a need to a) develop and distribute new / improved guidance on preparing Health Accounts for NCDs and mental health (currently under way), and b) identify other potential sources of information (e.g. health insurance claims / reimbursement data systems).

Introduction

NCDs and mental health,[1] conditions have increased all over the world, affecting life expectancy and quality of life of the population. NCDs affect around two billion people, and every year 17 million people die before 70 years from a NCD such as cancer, diabetes, heart or lung diseases. NCDs cause three quarters of all deaths globally(1). There are many essential interventions to prevent and treat NCDs and mental health cases both clinically, as well as through policy, legislative and regulatory measures. However, most of these interventions have not been fully implemented and in spite of their magnitude, NCDs and mental health receive only around 1–2% of global health financing investment for health(2).

The cycle of low spending in spite of a high need can be informed and partially addressed with the contribution of a specific health accounts monitoring of the spending on the interventions implemented, along the continuum of promotion, prevention, treatment and rehabilitation. This document - a summary of a longer commissioned report - aims at supporting this process, firstly by describing the current extent of disease-specific health accounting of NCD and mental health spending across the world; and secondly, by analysing and assessing the contribution - as well as limitations - of available data for informing health policy and planning(3).

Section 1 - Analytical approach

Health accounts is the standard of health expenditure measurement, which can target specifically the annual analysis of NCDs and mental health, among other relevant areas. The strategy involves the analysis of financial allocations and expenditure flows based on standard classifications. There is a specific classification of expenditure by disease [DIS]. The five main categories [first digit] are linkable to the Global Burden of Disease groups [GBD]. One category refers to non-communicable diseases/conditions [DIS.4], and at a second digit, nine selected NCD categories; in three of them, specific diseases are identified as subcategories [diabetes in endocrine; hypertension in cardiovascular; and mental, behavioural and neurological in mental health, as third digit]. Appendix 1 displays the groups of diseases/health conditions in health accounts. The classification can be mapped to ICD-10 & ICD-11 chapters.

A health accounts specific analysis of NCDs and mental health should involve these codes, cross-classified by financing, provision and consumption classifications, to respond to the following policy questions: who pays for NCD and mental health care? where are the resources coming from? who provides the services? what services are offered? Analysis can be undertaken to identify differences in time and across countries, e.g. by WHO Region or World Bank country income level, with respect to the main epidemiological and

[1] Mental health is equivalent in the health accounts disease classification to mental & behavioural disorders, and neurological conditions DIS.4.4.

expenditure categories, such as cancer, diabetes, cardiovascular disease, mental health conditions, and respiratory disorders.

Section 2 - Availability of Health Accounts data on NCDs and mental health conditions

The global health expenditure database [GHED](4) displays the collated data available on NCDs including mental health spending. The standard framework of Health Accounts [SHA2011] (5) states that the basic classifications to analyse the current health spending are health care functions (HC), providers (HP) and financing schemes (HF). The classification of spending by diseases is not part of the basic or compulsory block. Thus, not all countries include the expenditure distribution by disease in their accounts: in fact, only 59 developed, or shared, data on diseases. The number of countries has increased since SHA2011 became operational, but this increase was interrupted by the COVID-19 pandemic. From the 59 countries with disease information, only 55 include all the expected NCD [DIS.4] disaggregated data and 53 include the mental health [DIS.4.4] details. The number of countries varies by year because their reporting is discontinuous; the maximum number of countries reporting in a year is 35 (in 2016).

As shown in Table 1, the distribution of studies is heavily concentrated in the WHO African region (AFR; 39 out of 59). This is at least partly due to the expectation of countries in receipt of sustained funding from The Global Fund to Fight AIDS, Tuberculosis and Malaria to carry out disease-specific expenditure analyses. By contrast, high income countries (HIC) are barely represented, which is explained by the fact that while health accounts reporting is compulsory, as per EU regulations (most HIC performing health accounts [HA] are European and OECD member states), expenditure distribution by disease is performed only as a voluntary effort, such as in Germany(6) and the Netherlands (7) [where data are available from 2015-2020, by ICD-10 chapter], but not officially submitted to OECD neither to WHO.

Table 1. Countries in GHED with data on NCDs by WHO region and WB income level, 2013-2021.

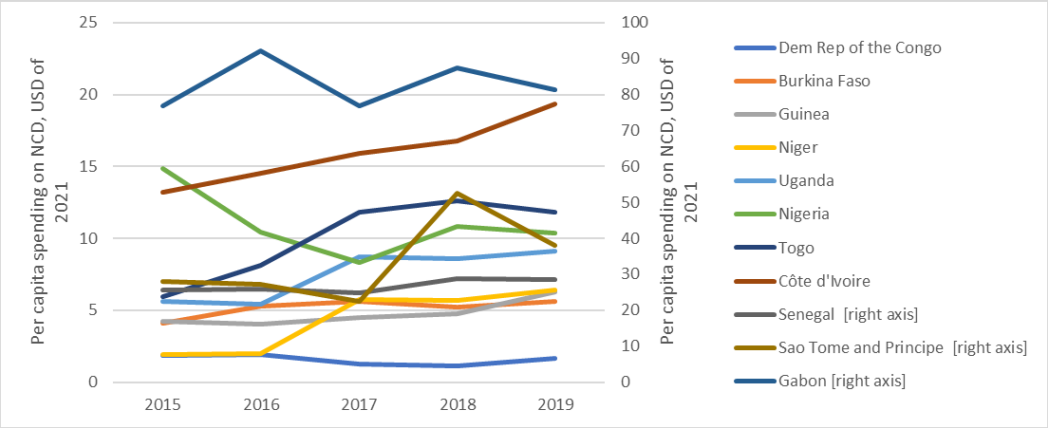
	LOW	LOWER-MIDDLE	UPPER-MIDDLE	HIGH	SUM
AFR	18	15	5	1	39
AMR		1	2		3
EMR	2	2			4
EUR		3	5		8
SEAR		2			2
WPR		3			3
Total	20	26	12	1	59

Source: *WHO Global Health Expenditure Database, 2023*

Section 3 - Health Accounts data insights for NCDs and mental health conditions

The most solid results are those from countries with a continuous set of data, as compared to isolated or discontinuous country estimates. To show the potential value and utility of disease-specific Health Accounts data, analysis of a selection of 11 African countries reporting on NCDs [DIS 4] was caried out. They are mostly LIC and LMIC, and only one UMIC, which means that the documented spending is not representative of other country groups. Given the irregular spending due to COVID-19, the analysis is made in 2015-2019. As shown in **Figure 1**, average spending in the period on NCDs [DIS.4] ranged from nearly 2 USD in DRC up to 80 in Gabon [around a 40 fold difference]. The higher shares of overall NCD spending are in cardiovascular [DIS.4.3] diseases; followed by gastrointestinal diseases [DIS.4.6] and endocrine diseases [DIS.4.2]. Mental health is the fifth more relevant category of NCD in 2019, representing around 9% of overall DIS.4 spending. Mental health subcategories are not equally distributed; the category with the larger share is mental conditions [DIS.4.4.1, 40%], followed by "non elsewhere classified" [DIS.4.4.nec, 37%] and the neurological conditions [DIS.4.4.3, 20%], while the behavioural category represents only 2% of mental health [DIS.4.4.2].

Figure 1. Per capita spending in NCDs of the selected countries, 2015-2019, in USD of 2021



Source: *WHO Global Health Expenditure Database, 2023*

A cross-tabulation of financing, provision and consumption classifications by type of NCD category in selected 11 AFR countries with regular reporting indicates that direct out-of-pocket spending (OOP) is above the threshold of 20% [2] in 10 of the 11 countries analysed in 2019. Regarding governmental health financing as a proportion of total spending, in Sao Tome it reaches 80% and in Niger and Burkina Faso it is close to 50%, but in the other 8 countries it is proportionately very low, and is not being compensated by compulsory

[2] WHO. 2010. Health Systems Financing. The path to universal coverage. WHR 2010. Geneva 2010 pp XIV

social health insurance (SHI). SHI reaches 25% only in Gabon, and in the other 10 countries has a negligible level. Thus, it is found that NCDs are mainly financed by households [74%] and in a minor proportion of spending by governments [21%], as an average in 2019. The provision of care is highly concentrated in hospitals among LIC and LMIC, and correspond to 50% of reported NCD spending and 70% in health in the analysed countries. Together, remunerations and medicines in the selected countries cover around 37% of NCD resources and 54% of those for mental health.

To complement and compare against the above analysis of 11 African countries, available disease-specific Health Accounts exercises carried out in other countries and income levels were assessed:

- In another lower-income country of sub-Saharan Africa, Ethiopia, disease-specific health account exercises carried out in 2017 and 2020 showed a marked increase in the proportion of overall spending allocated to NCDs (DIS.4), from 15.6% to 27.4%.

- Analysis of available data from two middle-income countries – Armenia and North Macedonia – showed a very different profile to the 11 lower-income African countries, both in terms of absolute levels of expenditure (e.g. ~US$ 300 per capita on NCDs in Armenia) and as a proportion of total spending (e.g. 38% of the total is on mental health in North Macedonia).

- In two high-income countries – Germany and The Netherlands – spending levels are orders of magnitude greater again; in The Netherlands, for example, DIS.4 spending in 2021 amounted to nearly US$ 5,000 per capita, with mental health conditions taking up approximately 40% (US$ 2,000 per capita). Health expenditure data from Germany shows increased spending on NCDs, especially for cancer, mental illnesses and circulatory diseases [using ICD codes]. Severe mental health conditions and Alzheimer's disease are particular drivers of increased cost. A similar picture is apparent from other high-income countries with available data (such as the UK).

Our analysis of the Health Accounts landscape and data availability has revealed substantial weaknesses and uncertainties with respect to data quality and consistency, including missing years (discontinuation) and fluctuations in reported spending from one year to the next. Also, the high level of reported expenditure at the hospital level likely indicates the lack of sufficiently robust health information systems to enable data collection and reporting at other levels of the health system, including the primary health care level. Furthermore, expenditures on prevention activities relating to NCD risk factors are not well identified or captured through the system of health accounts. Finally, the scope of the system of health accounts is evidently limited to the health sector, and is therefore not geared towards or capable of capturing expenditures incurred by the social care, education and other sectors on promotion, protection and support of people with NCDs and mental health conditions.

Conclusions

Health accounts can helpfully contribute to monitoring of NCDs and mental health, for example by benchmarking or revealing changes in spending levels over time, or the extent of OOP spending as a proportion of total current health expenditures, or the distribution of spending for specific diseases (8,9).

However, the current reality is that a substantial majority of countries worldwide are currently not generating (or not reporting) disease-specific health accounts; for example, Health Accounts data for 2021 was provided by just 13% of sub-Saharan African countries (8). Moreover, there remain important data gaps and limitations, including inaccurate or under-reporting of spending on NCD prevention activities or on NCD / mental health services provided at PHC level or outside the health sector. Also, it is not always evident or clear whether data points correspond to budgeted or actual expenditures.

This raises the question of the opportunity cost of more countries preparing better health accounts data at the level of specific diseases; that is, even if there were to be renewed attention and effort in generating disease-specific accounts, would the resulting information provide sufficiently robust and valuable data to justify the investment? Recent work in countries such as North Macedonia, for which detailed accounting data are available and have been analysed for mental health conditions, suggests that there is considerable value to be extracted, but on condition that data are continually collected over time and are reliable.

In lower-income contexts, the high cost, drawn-out process and technical requirements of preparing health accounts have resulted in low levels of replication and engagement / ownership, as well as long time lags between the commissioning and completion of Health Accounts exercises. For example, a 2010–2012 World Bank review of Health Accounts activity in 50 countries found structural and technical constraints (more than cost) were key impediments to institutionalizing Health Accounts in many low- and middle-income countries. Pilot projects focused resources on data production, neglecting longer-term capacity building for analysing the data, developing ownership among local stakeholders and establishing routine production, utilization and dissemination of Health Accounts data. WHO has since developed a framework to help countries assess their progress in institutionalizing health accounts, identify areas that require more effort to advance or sustain progress, and strengthen country-owned production of Health Accounts (10,11).

To enhance the understanding of current spending patterns for NCDs and mental health conditions, and to better support countries with an interest in generating disease specific accounts, there is a need to develop and distribute new / improved guidance on preparing health accounts for NCDs and mental health. A draft ‘manual’ is currently being developed to that end, building on previous technical guidance for HIV and other conditions. Moreover, WHO can promote the expenditure distribution by disease in each health account,

with the upcoming release of the health accounts production tool [HAPT[3]]. The tool is expected to automize the mapping of available ICD coding [ICD-9-11 versions] to DIS classification, including NCD and mental health.

In addition, and with the ever-increasing advances in digitalization of health systems, many countries can make use of other potential sources of information to monitor spending trends and patterns for NCDs and mental health conditions, such as health insurance claims and / or provider reimbursement data systems. These can offer valuable insights into the distribution of spending across different disease entities and associated delivery platforms. Where available, public expenditure reviews or tracking surveys may also provide relevant information and insights into overall health sector spending trends and government priorities.

[3] The HAPT is a software guiding and/or supporting countries to produce a health account from the beginning until the report and basic analysis. However, it can be used specifically for partial components, such as the disease distribution, if informed accordingly. The HAPT is promoted by WHO.

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Appendix 1

Health accounts classification of disease/health conditions at first digit, with more detailed codes shown for non-communicable diseases and mental health conditions.

Code	Name
DIS.1	**Infectious and parasitic diseases**
DIS.2	**Reproductive health**
DIS.3	**Nutritional deficiencies**
DIS.4	**Noncommunicable diseases (NCDs)**
DIS.4.1	Cancers
DIS.4.2	Endocrine and metabolic disorders
DIS.4.3	Cardiovascular diseases
DIS.4.4	**Mental & behavioural disorders, and Neurological conditions**
DIS.4.4.1	**Mental (psychiatric) disorders**
DIS.4.4.2	**Behavioural disorders**
DIS.4.4.3	**Neurological conditions**
DIS.4.4.nec	**Unspecified mental & behavioural disorders and neurological conditions**
DIS.4.5	Respiratory diseases
DIS.4.6	Diseases of the digestive
DIS.4.7	Diseases of the genito-urinary system
DIS.4.8	Sense organ disorders
DIS.4.9	Oral diseases
DIS.4.nec	Other and unspecified noncommunicable diseases (n.e.c.)
DIS.5	**Injuries**
DIS.nec	**Other and unspecified diseases and conditions (n.e.c)**

Source: HAPT https://www.who.int/publications/i/item/9789240065550