WHO description of methods

Monitoring financial protection in the European Region in the context of universal health coverage and the Sustainable Development Goals

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Contents

1 Summary of indicators

This document describes the methods underpinning the financial protection indicators used in the European Region, as set out in Table 1.

Table 1 Combined set of global and regional indicators for monitoring financial protection in the European Region

Global indicators (G1-4)	+	Regional indicators (R1-2)
Catastrophic out-of-pocket payments		
Indicator G1: The proportion of the population with large household expenditure on health as a share of total household consumption or income (greater than 10% or 25% of total household consumption or income)		**Indicator R1:** The proportion of households with out-of-pocket payments greater than 40% of household capacity to pay
Impoverishing out-of-pocket payments		
Indicator G2: Changes in the incidence and severity of poverty due to household expenditure on health using an international poverty line of PPP-adjusted USD 1.90 per person per day **Indicator G3:** Changes in the incidence and severity of poverty due to household expenditure on health using an international poverty line of PPP-adjusted USD 3.20 per person per day **Indicator G4:** Changes in the incidence and severity of poverty due to household expenditure on health using a relative poverty line of 60% of median consumption or income per person per day		**Indicator R2:** Risk of poverty due to out-of-pocket payments – the proportion of households further impoverished, impoverished, at risk of impoverishment or not at risk of impoverishment after out-of-pocket payments using a country-specific line based on household spending to meet basic needs (food, housing and utilities)

Note: PPP = purchasing power parity

2 Note on key terms used in this document

Household expenditures on health (out-of-pocket payments): Household expenditures on health are also known as out-of-pocket payments. Out-of-pocket payments are formal and informal payments made by people at the time of using any health service provided by any type of provider. They do not include reimbursement by a third party such as the government, a health insurance fund or a private insurance company. For further information see the classification of health care financing schemes in the International Classification for Health Accounts, a collaboration between the OECD, Eurostat and the World Health Organization.

Financial hardship (catastrophic or impoverishing out-of-pocket payments): Out-of-pocket payments result in financial hardship for people when they exceed a pre-defined threshold of a household's budget or capacity to pay. Out-of-pocket payments that lead to financial hardship are characterised as being 'catastrophic' or 'impoverishing'. In the context of the SDGs, catastrophic out-of-pocket payments are referred to as 'large household expenditure on health as a share of total household consumption (or income)'.

Household capacity to pay for health services: This refers to household consumption or income minus an amount to cover basic needs such as food, housing and utilities. Capacity to pay can be defined in different ways.

Poverty line: A poverty line is a level of personal or household income or consumption below which one is classified as poor. Poverty lines can be defined in different ways.

3 Global indicators

At a global level, WHO support for monitoring financial protection is underpinned by Resolution WHA58.33 on sustainable health financing, universal coverage and social health insurance. WHO and the World Bank are working together on global monitoring of financial protection for the SDGs to create a global database.

The global indicators described in this document fall into two groups.

Indicator G1 (SDG indicator 3.8.2 with its two thresholds) was chosen following a consultative two-year process led by the Inter-Agency Expert Group on SDG indicators. The UN Statistical Commission adopted the indicator in March 2017. The UN recognizes WHO as the custodian agency for SDG indicator 3.8.2 and the World Bank as co-custodian agency. The indicator is based on a method set out in Wagstaff A and E van Doorslaer (2003) Catastrophe and impoverishment in paying for health care: with applications to Vietnam 1993–1998. *Health Econ* 12: 921-934.

Indicators G2, G3 and G4 are being used by WHO and the World Bank to demonstrate the interdependency between SDG target 1.1 (the eradication of extreme poverty) and SDG target 3.8 (universal health coverage). These indicators come from a family of poverty measures set out in Foster J, J Greer and E Thorbecke (1984) A class of decomposable poverty measures. *Econometrica* 52 (3): 761-66. For an application to health see O'Donnell O, E Doorslaer, A Wagstaff and M Lindelow (2008) *Analyzing health equity using household survey data: a guide to techniques and their implementation*. Washington DC: World Bank Publications.

Data sources and requirements

To prepare country-level estimates for indicator G1 requires nationally representative household survey data that includes the following variables at household level:

- total household consumption expenditure gross of all payments for health care or total household income
- total household expenditure on health net of any reimbursement
- household size
- household sampling weight (w_h)

Information on household location (urban vs rural); the gender, age and education of the head of the household; household composition (for example, the number of children under five years of age, people aged 60 or more years, the number of females); and other socio-economic variables are useful for equity analysis.

For an in-depth analysis of the drivers of financial hardship, information on the composition of total household expenditure on health by type of provider is required.

Household budget surveys (HBS), household income and expenditure surveys (HIES), socio-economic or living standards surveys are the preferred source of information for both household health expenditure and household consumption expenditure.

Defining household consumption expenditure variables

Total household consumption expenditure is the preferred indicator of a household's monetary welfare. However, total household income may be used if a country uses income to monitor poverty and so as long the survey reporting income *also* collects information on total household expenditure on health.

Total household expenditure on health must include the following broad categories of health commodities and services: medicines and medical products (6.1), outpatient care services (6.2) and inpatient care services (6.3) as described in section 6 of the UN Classification of Individual Consumption According to Purpose (COICOP). It should also be net of any reimbursement by a third part such as the government, a health insurance fund or a private insurance company.

All variables related to expenditure should be in daily figures. Where survey data are provided in other units (when the recall period is 7 days, 2 weeks, 3 months, 6 months or one year), the data will need to be converted to daily figures. An example here is to denote daily total household consumption expenditure or income per capita (*hh_expcapd*) and daily total household expenditure on health per capita (*hh_**h**expcapd*).

Estimating large household expenditures on health (indicator G1)

Indicator G1 is based on a health expenditure budget share defined as the ratio of total household expenditure on health over total household consumption expenditure or total household income:

$$r_h = \frac{hh\_\boldsymbol{h}expcapd}{hh\_expcapd}$$

Health expenditure is identified as 'large' when the ratio exceeds a threshold denoted τ. The proportion of the population with large household expenditures on health as a share of household total consumption expenditure or income is estimated as a population-weighted average as follows:

$$SDG382_\tau = \sum_h w_h 1(r_h > \tau)$$

Where *h* denotes a household: 1() is the indicator function which is equal to 1 if the health expenditure ratio exceeds the cut-off τ and is equal to 0 otherwise; w_h corresponds to the household's sample weights multiplied by the household size to obtain representative numbers per person ($w_h = hhw_h * hhsize_h$). If the sample is self-weighting, then only the household size is used as the weight in computation ($w_h = hhsize_h$).

It is recommended to use two thresholds for global reporting:

$$\tau = 0.1 \ \& \ \tau = 0.25$$

Estimating impoverishing out-of-pocket payments (indicators G2, G3 and G4)

Poverty lines: Global monitoring uses two international poverty lines (IPLs) and a relative poverty line:[1]

- extreme poverty: $1.90 per person per day using 2011 purchasing power parities (PPPs) for private consumption converted into local currency units for the relevant year; this line is used to track progress towards SDG 1 (eradicate poverty in all its forms)

- moderate poverty: $3.20 per person per day (2011 PPPs) converted into local currency units of the relevant year

- relative poverty: 60% of median daily household consumption or income per person

The international poverty lines (IPL1 and IPL2) are expressed in 2011 prices. When measuring poverty for other years, the international poverty line at PPP is converted to local currencies in 2011 prices and is then converted to the prices prevailing at the time of the relevant household survey using the best available Consumer Price Index (CPI).[2] In other words, if a country's PPP for private consumption in 2011 is 2.5 (2.5 local currency units to the dollar) then the $1.90 a day poverty line is equivalent to 4.75 currency units a day in 2011. Suppose that the household survey data are for 2015 and the CPI for that year is 95 (with 2011=100 or a 5% reduction in consumer prices for private consumption), then the $1.90 a day line in local currency units for 2011 is equivalent to (1.9 x 2.5=)4.75x.95=4.51 a day in local currency for 2015. Similarly the $3.20 a day line would be equivalent to (3.1x2.5x.95)=7.4 a day in local currency for 2015. PPP data are downloadable from the World Bank's (WDI) data

[1] For some countries IPLs might be too high or too low depending on the level of economic development. To assess this, it is useful to compare their values in local currency units to the median daily per capita level of total household consumption or income. Medians are given in the accompanying excel file.

[2] For more information see http://unstats.un.org/sdgs/metadata/files/Metadata-01-01-01a.pdf

website.[3] Data on CPIs is also downloadable from WDI and the World Bank's Povcalnet.

Poverty measures: For global monitoring we use the Foster-Greer-Thorbecke (FGT) family of poverty measures. This set of measures has the following formulation:

$$P_{FGT}(x; z, \alpha) = \frac{1}{N}\sum_{h} w_h 1(x_h < z)\left(\frac{z - x_h}{z}\right)^{\alpha}, \alpha = 0, 1$$

Where x_h is a measure of a household's monetary welfare; z is a poverty line; 1() is the indicator function which is equal to 1 when a household's monetary welfare measure is below the poverty line and 0 otherwise; w_h corresponds to the household's sample weights multiplied by the household size to obtain representative numbers per person ($w_h = hhw_h * hhsize_h$). If the sample is self-weighting, then only the household size is used as the weight in computation ($w_h = hhsize_h$). Where available, other parameters of the sample design such as the primary sampling unit or the strata are also taken into consideration to estimate poverty.

When the parameter α is equal to 0, $P_{FGT}(x; z, 0)$ corresponds to the well-known poverty headcount ratio, which gives the proportion of the population below the poverty line z. When $\alpha = 1$, $P_{FGT}(x; z, 1)$ corresponds to the poverty gap, which is the mean shortfall of the total population from the poverty line (counting the non-poor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence. This index measures the severity of poverty. It increases if the poor become poorer on average, even if there is no change in the proportion of the population that is poor. It is therefore sensitive to average changes in welfare shortfalls among poor households.[4]

Most countries use total household consumption expenditure or income to measure monetary poverty. However this over-estimates the resources that are available to reach the minimum subsistence level identified by the poverty line. Some people might have levels of spending above the poverty line only because of paying out-of-pocket for health care, while spending on necessities such as food, housing and utilities might still be below minimum living standards. To assess this, poverty is measured based on daily total household consumption expenditure or income *gross and net* of household expenditure on health.

Differences between these poverty estimates give an estimate of the extent to which out-of-pocket payments contribute to poverty, as follows:

- increase in the incidence of poverty when comparing changes in the headcount ratio: $P_{FGT}(hh\_expcapd^{N}; z, 0) - P_{FGT}(hh\_expcapd^{G}; z, 0)$

[3] PPPs may need to be rebased to 2011 using CPIs for private consumption.
[4] For further information on global poverty indicators see: https://openknowledge.worldbank.org/bitstream/handle/10986/13731/9780821384619.pdf

- increase in the severity of poverty when comparing changes in the poverty gap ratio: $P_{FGT}(hh\_expcapd^N; z, 1) - P_{FGT}(hh\_expcapd^G; z, 1)$

Where $hh\_expcapd^N = hh\_expcapd \quad - hh\_\boldsymbol{h}expcapd$ and $hh\_expcapd^G = hh\_expcapd$

Indicators G2, G3 and G4 provide an estimation of the scale of the impoverishing effect of household expenditure on health under the assumption that all out-of-pocket payments are non-discretionary and household resources are fixed.[5]

Distribution

The first equity dimension is expenditure quintile (or income quintile, where the denominator is income). Equivalence scales are not used for global indicators because there is no globally agreed standard. Instead, expenditure quintiles are based on household expenditure per person per day. Household weights should be used when grouping the population by quintile. The second equity dimension is rural/urban, where available. Countries may find it relevant to analyse other equity dimensions such as differences between regions, characteristics of the head of the household etc.

For further information on the global indicators, see:

World Health Organization and International Bank for Reconstruction and Development / The World Bank (2017). Tracking universal health coverage: 2017 global monitoring report.

Wagstaff A, Flores G, Hsu J, Smitz M-F, Chepynoga K, Buisman LR et al (2017). Progress on catastrophic health spending: results for 133 countries. A retrospective observational study. Lancet Global Health.

Wagstaff A, Flores G, Smitz M-F, Hsu J, Chepynoga K, Eozenou P (2017). Progress on impoverishing health spending: results for 122 countries. A retrospective observational study. Lancet Global Health.

[5] For further information on measuring out-of-pocket payments and poverty see: Chapter 19 in O'Donnell O, Doorslaer E, Wagstaff A, Lindelow M (2008) Analyzing health equity using household survey data: a guide to techniques and their implementation. Washington DC: World Bank

4 Regional indicators

WHO support to member states for monitoring financial protection in the European Region is underpinned by the Tallinn Charter, Health 2020 and resolution EUR/RC65/R5 on priorities for health systems strengthening in the WHO European Region 2015–2020, all of which include a commitment to work towards a Europe free of impoverishing out-of-pocket payments for health.

Resolution EUR/RC65/R5 calls on WHO to provide member states with tools and support for monitoring financial protection and for policy analysis, development, implementation and evaluation. In response, WHO/Europe is working closely with national experts to prepare estimates that are embedded in detailed country-level analysis. The aim of this work is to support policy development through context-specific analysis and carefully tailored policy recommendations at a country and regional level.

National reports on financial protection are being produced in the following countries: Albania, Austria, Croatia, Cyprus, the Czech Republic, Estonia, France, Georgia, Germany, Greece, Hungary, Kyrgyzstan, Latvia, Lithuania, the Netherlands, Poland, Portugal, the Republic of Moldova, Slovakia, Slovenia, Sweden, Turkey, Ukraine and the United Kingdom. Country-level analysis will be published in 2017 and 2018 and feed into a regional report by 2018.

The **regional indicators R1 and R2** were developed by the WHO Barcelona Office for Health Systems Strengthening, at the request of the Regional Director of WHO/Europe, to meet demand from member states for performance measures more suited to high- and middle-income countries and with a stronger focus on pro-poor policies, in line with Regional Committee resolutions.

The indicators are adapted from the approach set out in Xu K, D Evans, K Kawabata, R Zeramdini, J Klavus and C Murray (2003) Household catastrophic health expenditure: a multicountry analysis. *Lancet* 362: 111–17 and Xu K, D Evans, G Carrin, A Aguilar-Rivera, P Musgrove and T Evans (2007) Protecting households from catastrophic health spending. *Health Affairs* 26(4):972-983; they also draw on elements of the approach set out in Wagstaff A and P Eozenou (2014), *CATA Meets IMPOV: a unified approach to measuring financial protection in health*, Washington DC: World Bank.

For further information, see:

WHO Regional Office for Europe (2019). Can people afford to pay for health care? New evidence on financial protection in Europe. Copenhagen: WHO Regional Office for Europe.

Cylus J, Thomson S, Evetovits T (2018). Catastrophic health spending in Europe: equity and policy implications of different calculation methods. Bull World Health Organ. 96:599–609.

Data sources and requirements

To prepare country-level estimates for indicators R1 and R2 requires nationally representative household survey data.

The following variables are required at household level:

- total household consumption expenditure
- food expenditure (excluding tobacco and alcohol if possible)
- housing expenditure, disaggregated by rent and utilities (such as water, gas, electricity and heating)
- health expenditure (out-of-pocket payments), disaggregated by type of health care goods and services[6]
- household size and the number of children (under 13 years of age) in the household

If the survey includes a household sampling weight variable, calculations should consider the weight in all instances.

Information on household or individual-level characteristics such as age, sex, education and location are useful for additional equity analysis.

Defining household consumption expenditure variables

Survey data come in various time units, often depending on whether the reporting period is 7 days, 2 weeks, 1 month, 3 months, 6 months or 1 year. It is important to convert all variables related to household consumption expenditure to a common time unit. To facilitate comparison with other national-level indicators it may be most useful to annualise all survey data.[7]

Total household consumption expenditure not including imputed rent: Household consumption expenditure comprises both monetary and in-kind payment for all goods and services (including out-of-pocket payments) and the money value of the consumption of home-made products. Because many household budget surveys do not calculate imputed rent, to maintain cross-country comparability, if the household budget survey does include imputed rent (COICOP section 4.2), this value should be subtracted from total consumption.

[6] The level of detail and sequencing of questions in household surveys have a significant impact on reported levels of consumption and out-of-pocket payments. Efforts should be made to use standardised surveys with well-sequenced and detailed questions on consumption and out-of-pocket payments. It is important to document the quality of the survey.

[7] If annualising survey data, it is important not to report the average level of out-of-pocket payments only among households with out-of-pocket payments, as this will produce inaccurate figures.

Food expenditure: Household food expenditure is the amount spent on all foodstuffs by the household plus the value of the family's own food production consumed within the household. It should exclude expenditure on alcoholic beverages and tobacco. Food expenditure corresponds to COICOP section 1.

Housing expenditure on rent and utilities: Expenditure on rent and utilities is the amount spent by households on rent (only among households who report paying rent) and on utilities (only among households who report paying utilities) including electricity, heating and water.

These data should be disaggregated to correspond to COICOP sections 4.1 (for rent) and 4.4 and 4.5 (for utilities). Care should be taken to exclude spending on secondary dwellings. Imputed rent (COICOP section 4.2) is not available in all household budget surveys and should not be used in this analysis.

Health expenditure (out-of-pocket payments): Out-of-pocket payments refer to formal and informal payments made by people at the time of using any health service provided by any type of provider (COICOP section 6).

Health services are any good or service delivered in the health system. These typically include consultation fees, payment for medications and other medical supplies, payment for diagnostic and laboratory tests and payments occurring during hospitalisation. The latter may include a number of distinct payments such as to the hospital, to health workers (doctors, nurses, anaesthesiologists etc) and for tests. Both cash and in-kind payments should be included if the latter are quantified in monetary value. Both formal and informal payments should also be included.

Although out-of-pocket payments include spending on alternative or traditional medicine, they do not include spending on health-related transportation and special nutrition.

It is also important to note that out-of-pocket payments are net of any reimbursement from the government, health insurance funds or private insurance companies.

Estimating basic needs expenditure and capacity to pay

Basic needs expenditure is a socially recognised minimum level of spending considered necessary to ensure sustenance and other basic personal needs. We calculate household-specific levels of basic needs expenditure to estimate a household's capacity to pay for health services. Households whose total consumption expenditure is less than the basic needs expenditure level generated by the basic needs line are deemed to be poor.

Defining a basic needs line: Basic needs can be defined in different ways. In the European Region we consider food, utilities and rent to be basic needs and distinguish between:

- households that do not report any utilities or rent expenses, so that their basic needs include food only

- households that do not report rent expenses (households that own their home outright or make mortgage payments, which are not included in consumption expenditure data), but do report utilities expenses, so that their basic needs include food and utilities only[8]

- households that pay rent, but do not report utilities expenditure (for example, if the reporting period is so short that it does not overlap with billing for utilities and there is no alternative reporting of irregular purchases), so that their basic needs include food and rent

- households that report paying both utilities and rent, so that their basic needs include food, utilities and rent

To estimate standard (normative) levels of basic needs expenditure, we first rank all households based on their per (equivalent) person total consumption expenditure. Households between the 25th to 35th percentiles of the total sample are referred to as the representative sample to estimate basic needs expenditure. It is assumed that they are able to meet, but not necessarily exceed, basic needs for food, utilities and rent.[9]

Calculating the basic needs line: To begin to calculate basic needs, a household equivalence scale should be used to reflect the economy scale of household consumption. We use the OECD equivalence scale to generate the equivalent household size for each household:

> equivalent household size = 1 + 0.7*(number of adults-1) + 0.5*(number of children under 13 years of age)

Each household's total consumption expenditure (less imputed rent), food expenditure, utilities expenditure and rent expenditure is divided by the equivalent household size to get respective equivalised expenditure levels.

[8] Adjusting households' capacity to pay for rent (among renters) is particularly important. Mortgages are considered as investments, not consumption expenditure, in household budget surveys, and for this reason household spending on mortgages is often not collected. This means that without subtracting some measure of rent expenditure from those who rent, renters will appear systematically wealthier (and have greater capacity to pay) than identical households with mortgages.

[9] In some countries it is common to finance out-of-pocket payments from savings or borrowing, which might artificially inflate a household's consumption and affect household ranking. Where this is an issue, it may be preferable to rank households by per equivalent person non- out-of-pocket payment consumption expenditure.

Households whose equivalised total consumption expenditure is between the 25th and 35th percentile across the whole weighted sample are the representative households used to calculate normative basic needs levels. Using survey weights, the weighted average of expenditure for food, utilities and rent among these representative households that report positive values for food,[10] utilities and rent expenditure, respectively, gives the basic needs expenditure per (equivalent) person for food, utilities and rent.

Note that for households that do not report any rent or utilities expenses, we use only the sample-weighted food basic needs expenditure to represent total basic needs expenditure per (equivalent) person.

For households that report utilities expenditures but do not report any rent expenses, we sum the two basic needs expenditure sample-weighted averages for food and utilities to calculate total basic needs expenditure per (equivalent) person.

For households that report rent expenditures but do not report any utilities expenses, we sum the two basic needs expenditure sample-weighted averages for food and rent to calculate total basic needs expenditure per (equivalent) person.

For households that report both rent and utilities, we sum the three basic needs expenditure sample-weighted averages for food, utilities and rent to calculate total basic needs expenditure per (equivalent) person.

Calculating basic needs expenditure levels for each household: Calculate the basic needs expenditure specific to each household by multiplying the total basic needs expenditure per (equivalent) person level calculated above by each household's equivalence scale. Note that a household is regarded as being poor when its total consumption expenditure is less than the basic needs level.

Capacity to pay: A household's capacity to pay is defined as non-basic needs consumption expenditure. Some households may report total consumption expenditure that is lower than the basic needs level, which defines them as being poor. Note that if a household is poor, capacity to pay will be negative after subtracting the basic needs level.

[10] Note again that we exclude households that do not report food expenditure as this may reflect reporting errors.

Estimating impoverishing out-of-pocket payments (indicator R2)

Measures of impoverishing health spending aim to quantify the impact of out-of-pocket payments on poverty. For indicator R2, we divide households into five mutually exclusive categories based on their level of out-of-pocket payments in relation to the basic needs line, as shown in Figure 1.

1 **No out-of-pocket payments:** those that report no health expenditure.

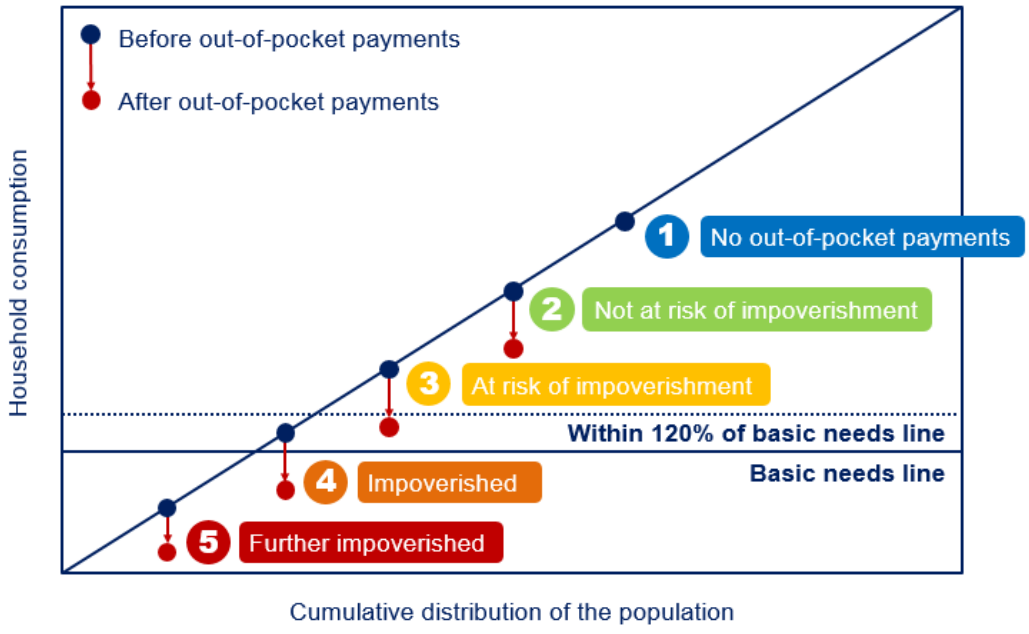
2 **Not at risk of impoverishment after out-of-pocket payments:** non-poor households with out-of-pocket payments that do not push them below the multiple of the basic needs line.

3 **At risk of impoverishment after out-of-pocket payments:** non-poor households with out-of-pocket payments that push them below a multiple of the basic needs line. The multiple we report is 120%, but we also estimate 105% and 110%.

4 **Impoverished after out-of-pocket payments:** non-poor households that are pushed into poverty after paying out of pocket for health services. For them, the ratio of out-of-pocket payments to capacity to pay is greater than 1.[11]

5 **Further impoverished after out-of-pocket payments:** households already below the basic needs line with out-of-pocket payments. Any household whose ratio of out-of-pocket payments to capacity to pay is less than zero (that is, negative) is pushed further into poverty by out-of-pocket payments.

Figure 1 Impoverishing out-of-pocket payments



Note: OOPs = out-of-pocket payments

[11] In the exceptional case that capacity to pay is zero and out-of-pocket payments are greater than zero, a household would be considered to be impoverished by out-of-pocket payments.

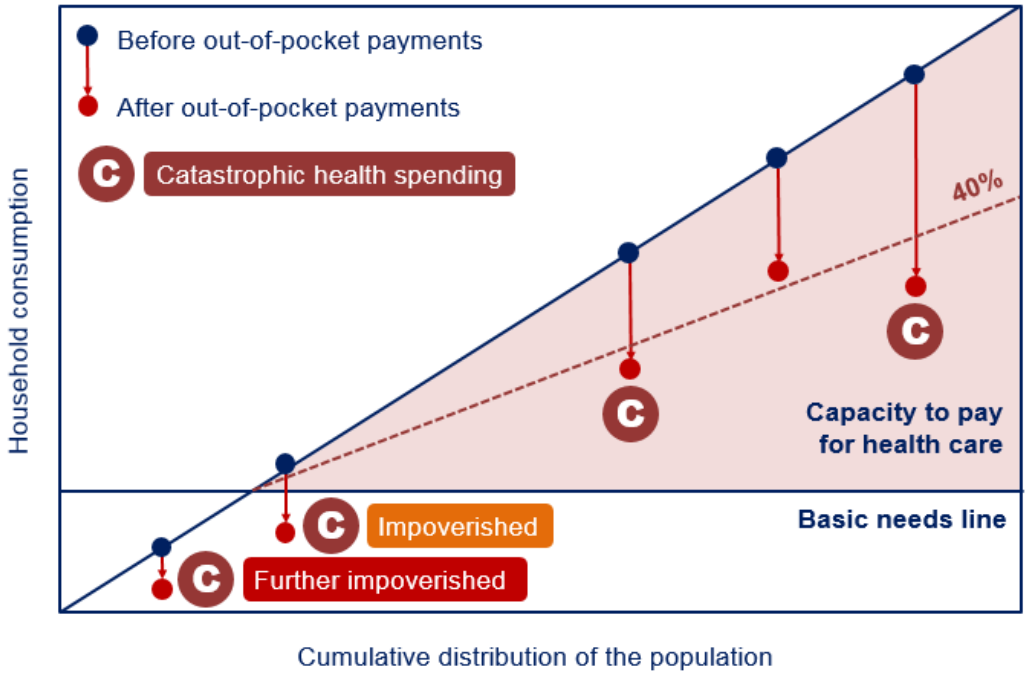
Estimating catastrophic out-of-pocket payments (indicator R1)

Catastrophic out-of-pocket payments occur when a household's out-of-pocket payments equal or exceed some threshold of a household's capacity to pay. Thresholds are arbitrary. The threshold used most often in capacity to pay measures is 40%. We use 40% for reporting purposes, but also prepare estimates using thresholds of 20%, 25% and 30%.

Households with catastrophic out-of-pocket payments are defined as those with out-of-pocket payments greater than 40% of their capacity to pay. This includes all households who are impoverished, because their out-of-pocket payments are greater than their capacity to pay. It also includes all households who are further impoverished, because they do not have any capacity to pay.

Households with non-catastrophic out-of-pocket payments are defined as those with out-of-pocket payments that are less than the pre-defined catastrophic spending threshold, as shown in Figure 2.

Figure 2 Catastrophic out-of-pocket payments



Note: OOPs = out-of-pocket payments

For policy purposes it is useful to identify which groups of people are more or less affected by catastrophic out-of-pocket payments (equity) and which health services are more or less responsible for catastrophic out-of-pocket payments.

Distribution: The first equity dimension is expenditure quintile. Expenditure quintiles are determined based on equivalised per person household expenditure.[12] Household weights should be used when grouping the population by quintile. Countries may find it relevant to analyse other equity dimensions such as differences between urban and rural populations, regions, men and women, age groups and types of household.

Structure: For households in each financial protection category, the percentage of out-of-pocket payments on different types of health goods and services should be reported, if the sample size allows. We recommend the following categories, with their corresponding COICOP categorisation: medicines[13] (6.1.1), medical products (6.1.2 and 6.1.3), outpatient care (6.2.1), dental care (6.2.2), diagnostic tests (6.2.3) and inpatient care (6.3). Given that sample sizes may be very small for some categories, it would be good to report 95% confidence intervals.

[12] In some countries it is common to finance out-of-pocket payments from savings or borrowing, which might artificially inflate a household's consumption and affect household ranking. Where this is an issue, it may be preferable to calculate quintiles based on non-health equivalised per person household expenditure.

[13] If possible, a distinction should be made between prescription and over-the-counter medicines.