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**Xenia Scheil-Adlung, Florence Bonnet, Thomas Wiechers  
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## **New approaches to measuring deficits in social health protection coverage in vulnerable countries**

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## *Summary*

Although countries statutorily might provide for universal health care coverage, in reality large proportions of the populations do not have access to health services. This situation is currently not sufficiently reflected in data available to policy makers that strive for universal coverage.

This paper proposes a concept of measuring effective access to health services. In the absence of a single indicator for the measurement, it refers to a set of indicators that reflect the most determining dimensions of effective access: legislation, availability, affordability, and quality of health services.

To reflect socio-economic challenges at country level that are beyond the health system, these indicators were applied using a framework of countries defined by vulnerability, an approach which combines the degree of poverty and informality of the labour market. This grouping of countries allows providing appropriate policy advice, comparison and monitoring of coverage and progress in countries of comparable degrees of vulnerability.

Although limited by availability of data, existing data from various databases was deployed for the analysis of each of these dimensions. It could be shown that the higher the level of vulnerability, the higher the deficits. Deficits due to the unavailability of health work force alone exceed one third of the global population that has no access to health care when in need. Preliminary results demonstrate that the concept permits providing more relevant information to policy makers than limited existing measurements and meaningful country comparison. With further refinement, the concept could be turned into a standard tool for assessment of effective access and coverage.

### ***1. Introduction***

At the global and national level, policy and decision makers are concerned about the fact that millions of people cannot obtain health care when in need or are pushed into poverty due to gaps in social health protection. Hence, achieving universal coverage ranges high among internationally and nationally agreed objectives: Health and social security are fundamental human rights and key for development and alleviating poverty. Therefore, global strategies<sup>1</sup> and national policies such as in Ghana and Thailand<sup>2</sup> strive for developing universal social health protection coverage.

However, despite agreements on overall objectives, there are no global agreements on measuring coverage. Existing approaches frequently remain conceptually limited and shed light on selected aspects only rather than focusing on more comprehensive analyses of effective access and underlying socio-economic challenges in achieving universal coverage. Further, definitions of coverage vary significantly and thus measurements cannot be easily compared at the international level.

Thus, policy and decision makers obtain only little practical guidance from existing data on coverage. This proves to be particularly important in times of social and economic crises when significant impacts on health and poverty have to be addressed<sup>3</sup> but public budget constraints result in declining health protection rather than in policies aiming at closing growing gaps in coverage<sup>4</sup>. Against this background, it is suggested to improve the quality of existing data by conceptualizing coverage in a way that informs the policy dialogue on a broader spectrum of relevant dimensions of coverage and explanations of gaps that allow meaningful international comparisons.

## 2. Operationalizing social health protection coverage

### a. The concept of coverage

In line with the International Labour Organization (ILO), it is suggested to define **social health protection** as a series of “public or publicly organized and mandated private measures against social distress and economic loss caused by the reduction of productivity, stoppage or reduction of earning or the cost of necessary treatment that can result from ill health”<sup>5</sup>. Related **coverage** refers to a broad concept that specifies the number of residents in a country that can access an essential benefit package of adequate quality if in equal need. ILO Convention 102 – deemed to embody an internationally accepted definition of the very principle of social security – sets minimum standards for sickness benefits that should be covered.<sup>6</sup>

Against this background, it is useful to distinguish between various dimensions of coverage with a view to effective access to health services. **Legal coverage** describes rights and formal entitlements whereas **effective access** involves the provision of services and their use. In fact, effective *access* is based on

- The physical **availability** of health care, health infrastructure, work force, medical goods and products, and timely provision of services
- **Affordability** of services is defined as the absence of financial barriers to needed health care aiming at avoiding health-related poverty or impoverishment. It refers to the maximum share of expenditure of total household income net of the cost of subsistence. Affordability of services for individuals or households differs from fiscal affordability
- The utilization and therefore access are influenced by the **quality** of services provided.
- **Financial protection** includes minimizing out-of-pocket payments and compensation for productivity loss due to illness. Financial protection addresses the risk of impoverishment due to catastrophic health events, out-of-pocket payments, transport costs to reach health care facilities particularly in rural areas.

Based on the above, it is suggested to define social health protection coverage as **effective access to affordable health services that are available at a specified level of quality and financial protection against the economic burden involved in ill health**.<sup>7</sup> The range of services covered should refer to maintaining, restoring or improving health, guaranteeing the ability to work and meeting personal health-care needs.<sup>8</sup>

### b. Measuring coverage at national level

Measuring coverage and progress towards universal coverage and access at national level should take the above considerations into account and reflect the complexity of the concept. Unfortunately, the various dimensions cannot be quantified using one single indicator. Therefore, it is suggested that the most important determinants of the concept be covered through a set of indicators that serve as proxies providing information on legal coverage, availability, affordability/financial protection and quality. Given the costs involved in data development at global and national level, it is suggested to use as far as possible existing databases.

The following indicators (Table 1) seem to be suitable for measuring the dimensions mentioned and allow to globally comparing data: Deficits in legal/formal population coverage, the ILO Access Deficit Indicator based on the availability of health work force<sup>9</sup>, out-of-pocket payments as a share of total expenditure on health to indicate affordability/financial protection and per capita expenditure and maternal mortality as proxies for quality.

**Table 1: Set of indicators and data bases suggested for measuring coverage**

<b>Legal coverage</b>	<i>Deficit of legal/formal coverage</i> in percent of the population based on data from the ILO Social Health Protection data base <sup>10</sup>
<b>Availability</b>	<i>ILO access deficit indicator</i> using the availability of health work force based on data from ILO calculations on social health protection coverage using WHO databases
<b>Affordability and financial protection</b>	Share of <i>out-of-pocket payments</i> in percent of total health care expenditure and <i>Catastrophic health expenditure</i> as share of total health expenditure based on National Health Account data and data available from various sources using WHO data bases
<b>Quality</b>	<i>Deficit in health spending per capita</i> and <i>maternal mortality ratio</i> based on National health accounts and WHO data bases

Source: Authors

Deficits in legal/formal coverage are measured in comparison to the total population. The ILO Access Deficit indicator provides information on the shortfall of skilled health work force using the relative difference between the density of health professionals in a given country and its median value in countries with a low level of vulnerability (population access to services of medical professionals in countries with low vulnerability is thus used as a benchmark for other countries).. The deficits in health spending per capita are measured in comparison to the median of the country group of similarly vulnerable countries.

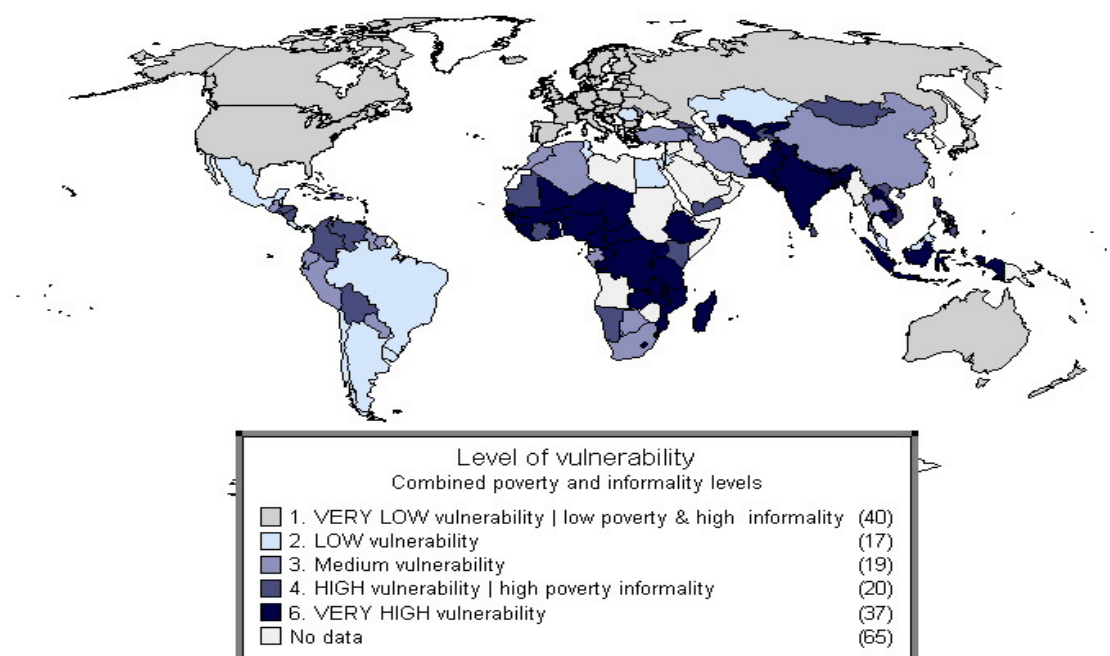
### ***c. Considering the vulnerability of countries at global level***

To allow comparing and monitoring access at global level, the above indicators should be observed in a framework of homogeneous groups of countries. For measuring coverage with a view to providing relevant policy advice it is most useful to refer to common challenges that countries face when striving for universal access. These challenges could be captured by grouping countries by poverty level and extent of the formal resp. informal economy<sup>11</sup>: Both impact on the potential to generate domestic revenue from taxes or payroll taxes for the health system and thus the availability of funds and the sustainability of financing. Further, both the extent of poverty and informal economy impact on the feasibility to reach out and extend social health protection to the whole population.

This concept of vulnerability allows grouping countries according to their socio-economic development rather than their macro-economic performance. Compared with other frameworks, the concept reflects inequalities existing *within* countries that impact on access to health services: in fact, both poverty and employment status are key factors when striving for universal coverage and access to health services.

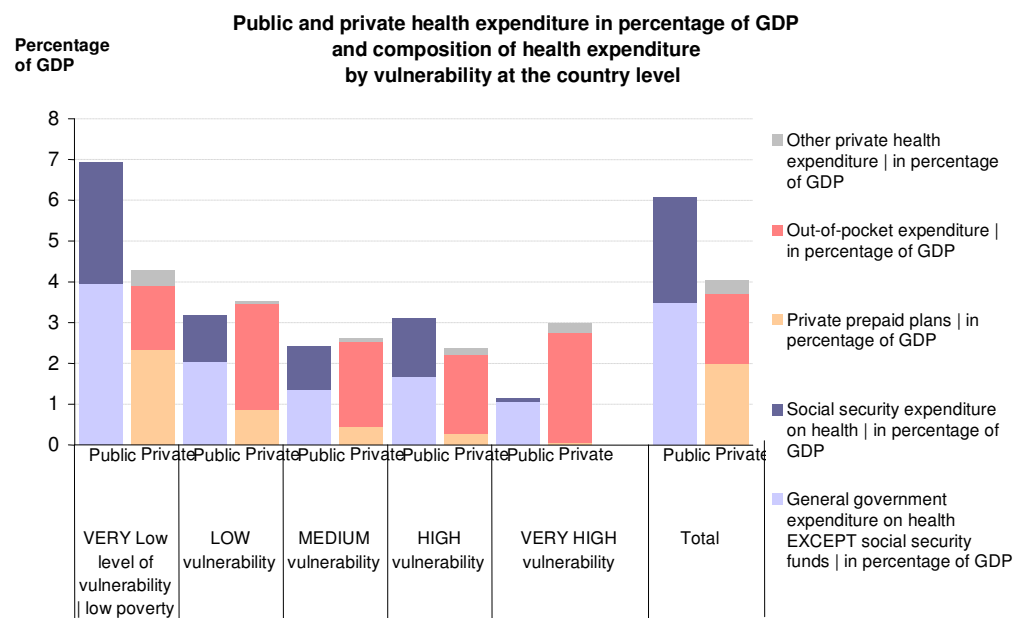
It is suggested to combine the poverty rate below \$2/day and the share of the informal labour market as a composite indicator to reflect the vulnerability of countries.<sup>12</sup> Figure 1 shows the distribution of vulnerable countries using these criteria at the global level: About a third (57 countries) of countries assessed are experiencing high or very high vulnerability. Most of these countries are in Africa and Asia.

Figure 1: Global distribution of vulnerable countries



Sources: For informality (non-wage workers as a proportion of total employment as a proxy of informality level): ILO, LABORSTA and KILM, and national statistical offices; for poverty incidence (below US\$2 per day), World Bank. Numbers in brackets give the number of countries included in each group. See also ILO, GESS.<sup>13</sup>

Figure 2: Vulnerability of countries and sources of funds



Source: WHO, National Health Accounts, 2006

The important link between vulnerability of countries and sources of funds for health are shown in Figure 2. While public expenditure ranges around 1% of GDP and is lowest in the most vulnerable countries, it amounts to about 2% of GDP in all other countries except the least vulnerable where it is about 4% of GDP. The remainder is shared between compulsory social health insurance and private payments including OOP.

### **3. Preliminary results: Estimated deficits in social health protection coverage in vulnerable countries**

In the following, we present preliminary results on the suggested indicators in groups of countries that are comparable by level of vulnerability in terms of poverty and extent of informal economy. We distinguish between deficits regarding the legislation, affordability/financial protection, availability and quality that define effective access.

#### ***a. Deficits in the extent of legal coverage and affordability of health services***

Indicators used to assess deficits in legal coverage and affordability are

- Existence of legislation and extent of formal coverage
- Out-of-pocket payments in percent of total/private health care expenditure
- Catastrophic health expenditure as share of total health expenditure

At the global level, no group of countries provides coverage to more than 95 percent of the population and there is a significant number of countries, particularly in Africa and Asia, that provide coverage to less than 10 percent of their population.

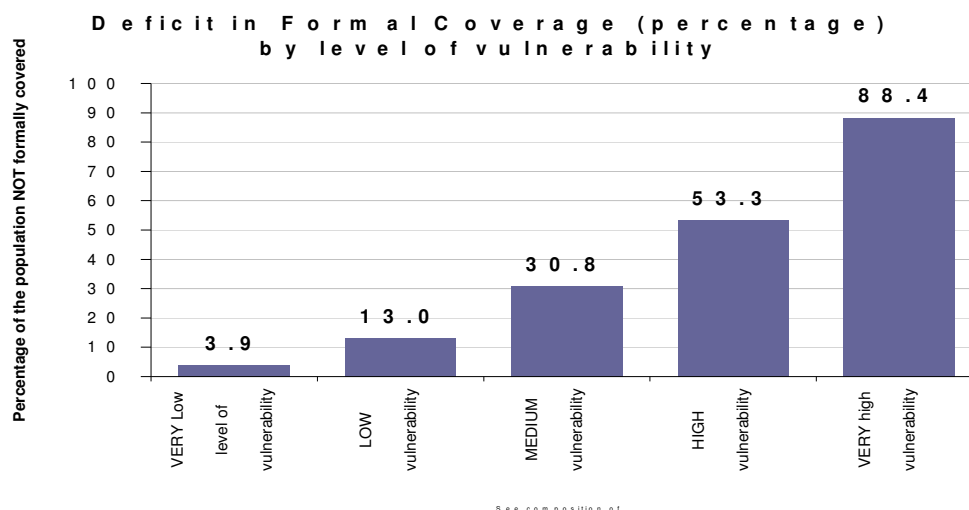
The deficit in *formal/legal coverage* of the populations at global level is visible in countries at all levels of vulnerability: 88.4 percent of people living in the most vulnerable countries are not covered formally by any scheme or system as compared to less than 4 percent in the least vulnerable countries (Figure 3).

If formal coverage is provided, specific groups of the population might be included or excluded from social health protection and access to health services e.g. those working in specific economic sectors such as civil servants or labour market segments like the informal economy or those that are not in a position to work such as the disabled or pensioners. Coverage might also involve differences in the provision of medical benefits and cash benefits among groups and countries and varying qualifying conditions such as waiting periods. Further, it might refer to one or different social health protection schemes requiring contributions, co-payments or income support in case of inability to work during sickness.<sup>14</sup>

Those that are often not legally covered by social health protection and have overcome financial and geographical barriers to access health services are frequently the poor – particularly women –, people living in rural areas with low density and quality of services, and those working in the informal economy.<sup>15</sup>



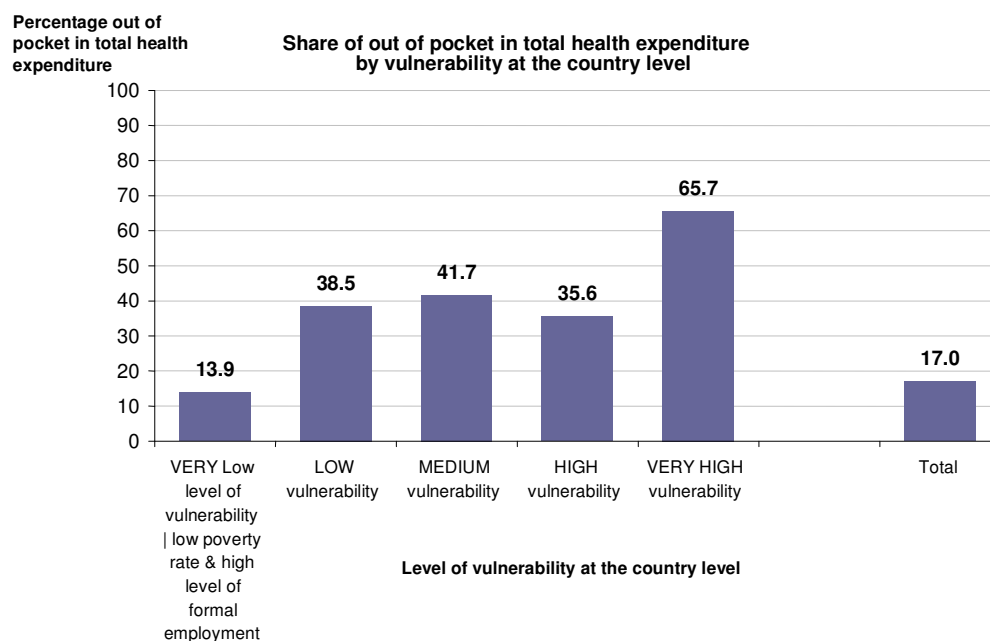
Figure 3: Deficits in formal coverage by level of vulnerability



Sources: For informality (non-wage workers as a proportion of total employment as a proxy of informality level): ILO, LABORSTA and KILM, and national statistical offices; for poverty incidence (below US\$2 per day), World Bank. Numbers in brackets give the number of countries included in each group. See also ILO, GESS.<sup>16</sup>

In Figure 4 the share of out-of-pocket (OOP) expenditure in total health expenditure is shown by level of country vulnerability. It can be observed that – with one exception - the higher the vulnerability, the higher the share of OOP. OOP amounts to more than 65 % in the most vulnerable countries.

Figure 4: Share of OOP as percentage of total health expenditure by vulnerability of countries



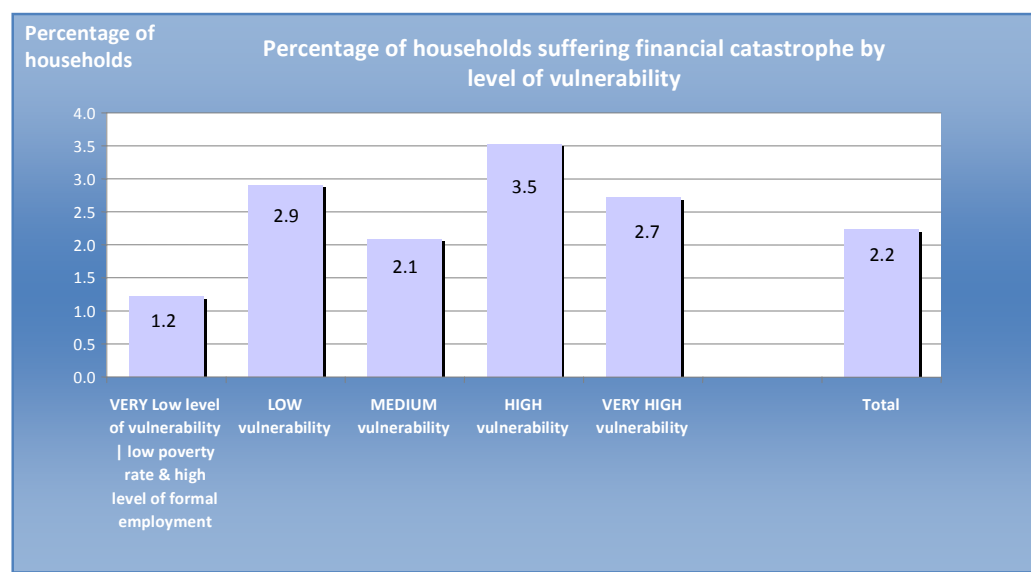
Sources: For informality (non-wage workers as a proportion of total employment as a proxy of informality level): ILO, LABORSTA and KILM, and national statistical offices; for poverty incidence (below US\$2 per day), World Bank. WHO, National Health Accounts, 2006. See also ILO, GESS.<sup>17</sup>

The increase of OOP in medium vulnerable as compared to high vulnerable countries can be explained by the increased availability of health services and financial means that permit better access to health services. It should also be mentioned that these figures underestimate the extent of private financial burden because they do not take into account indirect costs e.g. for transportation and lost income.

The situation changes when looking at the percentage of households suffering financial catastrophe (Figure 5). The figure reveals that independently of the level of vulnerability, catastrophic health expenditure defined as > 40% of income net of subsistence plays an important role.<sup>18</sup> It is interesting to note that the incidence of catastrophic expenditure ranges from 0 up to 10% e.g. in Brazil (low vulnerability) and Vietnam (high vulnerability). Globally, it is high in countries with high vulnerability although the proportion has also been observed to be high in countries with very low vulnerability.<sup>19</sup> This may be due to better information on availability of health services and therefore higher levels of use; higher beliefs in the functioning of formal health care; and the price structure of services and drugs.

While the data shown seems to be low, it should be taken into account that the number of people affected by financial catastrophe amounts to more than 150 million in total (2.2 % of households).

*Figure 5: Vulnerability and financial catastrophe 2006*



Source: Data bases WHO 2006 / ILO World Social Security Report 2010, Geneva 2010

#### ***b. Gaps in availability and quality of services***

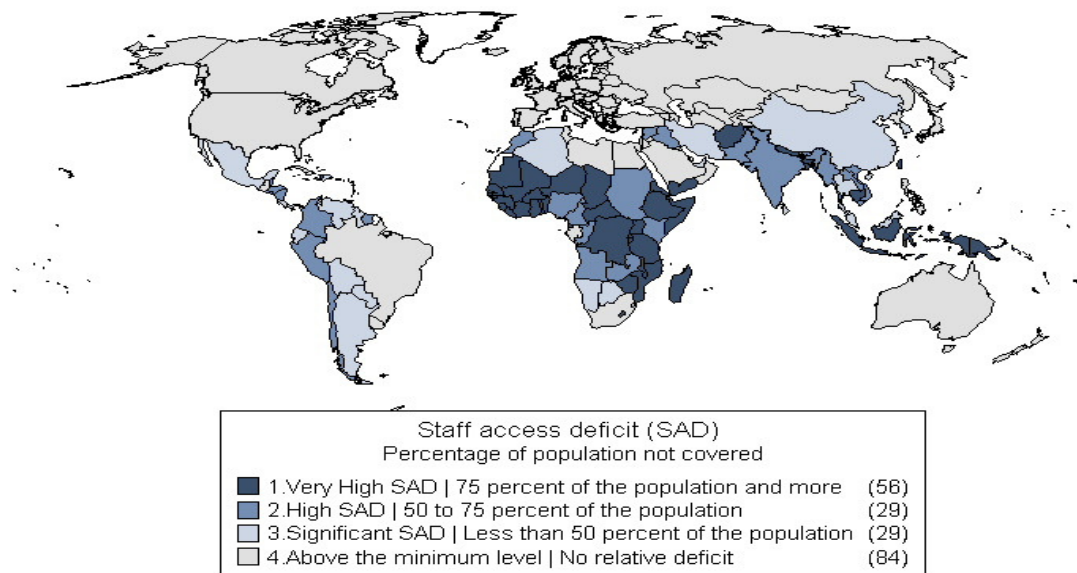
The gaps in availability and quality of services will be measured by the following indicators:

- The ILO Access Deficit Indicator
- Health spending per capita
- Maternal mortality ratio

The ILO access deficit indicator estimates the dimension of availability of health services based on the availability of health professionals as a proxy. It uses the relative difference between the national density of health professionals and the median value in the low vulnerability group of countries as a

benchmark for developing countries.<sup>20</sup> A global overview of the staff-related access deficit by country vulnerability is presented in Figure 6.

*Figure 6: Global results of the ILO Access Deficit Indicator measuring gaps in access to health services based on density of health professionals*



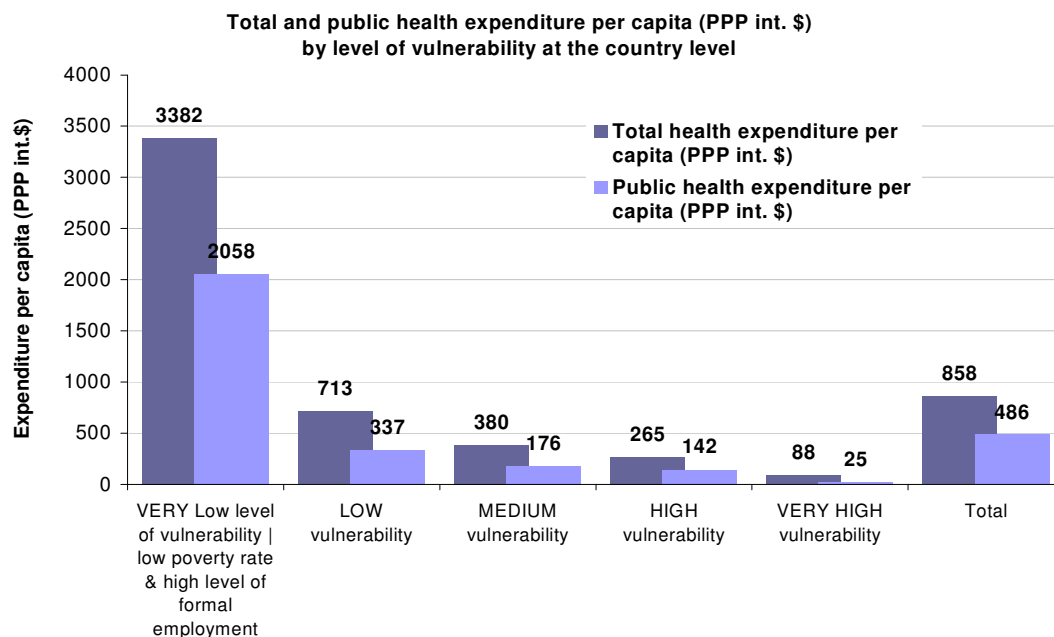
Source: ILO, Social Health Protection, Geneva 2008

The ILO Global Staff Related Access Indicator suggests that 30-36% of the world's population has no access to health care (using Thailand as a benchmark). Countries in Africa and Asia have highest levels of access deficit.

Quality of services depends to a large extent on the funds available per capita. Figure 7 shows that countries with the lowest per capita expenditure are found in the group of highest vulnerability where public health expenditure is around \$25 per capita (compared with \$2058 in the least vulnerable countries). Even the most basic benefit package would cost in excess of \$25 per person per year. Therefore, it will be necessary to increase these funds significantly when striving for universality and equity in access.

The maternal mortality ratio (MMR) is a commonly used indicator of access and quality of health service delivery. It refers to the annual number of deaths in women from pregnancy-related causes per 100,000 live births.<sup>21</sup> It is assumed that pregnancy should not be a cause of death therefore this ratio reflects the quality of obstetric services and can be used as a proxy indicator. The MMR ratio is observed to be highest in very low and low vulnerability countries respectively while it is very low or almost non-existent in the least vulnerable countries.

Figure 7: Total and public health expenditure per capita (PPP int. \$) by level of vulnerability at the country level

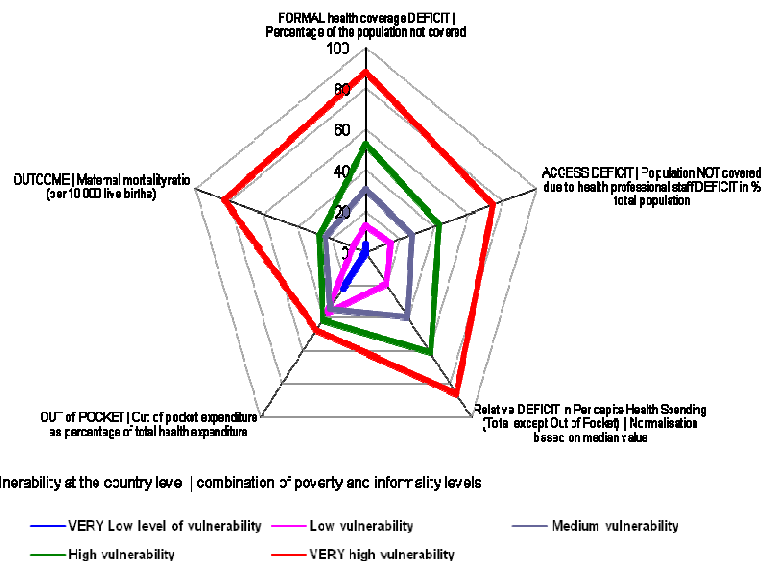


Sources: For informality (non-wage workers as a proportion of total employment as a proxy of informality level): ILO, LABORSTA and KILM, and national statistical offices; for poverty incidence (below US\$2 per day), World Bank. WHO, National Health Accounts, 2006. See also ILO, GESS. <sup>22</sup>

### c. Estimated coverage deficits by vulnerability of countries

An overview of global deficits in coverage by vulnerability of groups of countries is provided in Figures 8 and 9.

Figure 8: Health coverage deficit: Overview by level of vulnerability | Global estimates

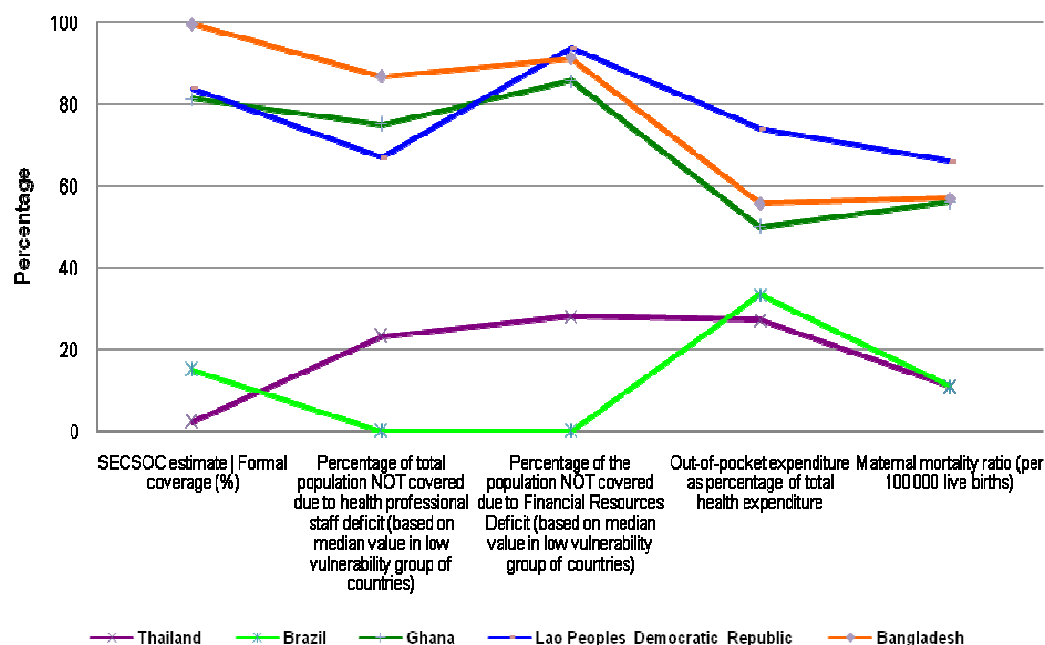


Source: Authors

As expected, vulnerability plays a significant role regarding differences in coverage and access. Decreasing vulnerability translates into relatively constant enlargement of coverage and access. An exception relates to OOP and maternal mortality as indicators for affordability, availability and quality of the social health protection scheme and quality of service delivery. OOP plays an important role in all levels of vulnerability including the least vulnerable countries. Deficits in availability and quality are particularly visible in countries with low, high and very high vulnerability.

Interesting results are also to be found at the country level (Figure 9): for instance, where formal coverage reaches high values, significant problems remain in terms of affordability (OOP) even in countries with low vulnerability such as in Brazil. Thailand – with medium vulnerability comparatively higher challenged in reaching universal coverage - is achieving similar outcomes in terms of maternal mortality as Brazil, however, at lower levels of OOP and with lower levels of financial resources than the median value in the low vulnerability group.

Figure 9: Health coverage deficit: Overview by level of vulnerability | Selection of countries



Source: Authors

#### 4. Conclusions

Countries striving for universal coverage should focus on effective access to health services. Most relevant are the dimension of legislation, affordability/financial protection, availability and quality of services. Meaningful country comparisons should refer to the vulnerability of countries in terms of poverty and informalities of labour markets.

88.4% of the population in the most vulnerable countries does not have any formal coverage. The majority of these countries is in Africa and Asia. Using the ILO's global staff-related deficit as a proxy for availability of services, it was observed that 30-36% of the population have no access to health care. Affordability and financial protection can be estimated in terms of catastrophic health

expenditure and OOP. The data presented suggest that even the most essential benefit package is currently not secured by public funds in the most vulnerable countries. This leads to high rates of catastrophic spending. As a result increased impoverishment is to be expected. The availability and quality of services is key to achieving universal coverage. However, it needs to be complemented by financial protection in order to be efficient and effective.

The above figures reflect the degree of inequity in access to health services. It is thus imperative that policy makers around the world lead efforts to strive for equitable access to health services.

Public sources of funding for health services are lowest in highly vulnerable countries. This implies that people have to pay privately or out-of-pocket for health services. This method of payment has been found to be inefficient and inequitable. Paying for health through prepayment and pooling of funds is efficient and helps to protect against the risk of paying for care. Prepayment should therefore be the target of policy makers as the predominant method of paying for care. It is also important that equity based on the ability to pay is ensured.

High out-of-pocket expenditure often leads to catastrophic expenditures. Catastrophic expenditures do not only occur as a result of paying providers but may be consequence of transportation cost, reduced productivity and income loss due to illness. It is therefore important to institute financial protection mechanisms to reduce the financial impacts of seeking health care.

The quality of available health care services is important. The better the quality, the more frequently will services be accessed. Quality has been shown to be related to the level of public funding per capita. Lower quality health services were observed in countries with the least public funds per capita. The consequence of diverting funds from the health sector may be reduction in the quality of services provided with grim consequences for population health. Therefore in a time of crisis, rather than shifting funds away from the health sector, it may be more efficient to ensure that funds are made available to maintain the quality of service.

The way and manner in which the health system is financed and organized poses enormous implications for the health of the people. To attain universal coverage, legal coverage should translate into effective coverage through ensuring the affordability, accessibility, availability and quality of services. It is also important that there is adequate protection against the financial risks of accessing care.

The above results demonstrate that the suggested concept of measuring effective access to health services allows providing more relevant information to policy makers and meaningful country comparison. With further refinement, the concept could be turned into a standard tool for assessment of effective access and coverage.

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- <sup>8</sup> "The medical care referred to in Article 8 [i.e. medical care of a curative or preventive nature] shall be afforded with a view to maintaining, restoring or improving the health of the person protected and his ability to work and to attend to his personal needs."(*Medical Care and Sickness Benefits Convention (ILO Convention 130, Article 9)*)
- <sup>9</sup> Detailed descriptions of the ILO Access Deficit Indicator can be found in ILO. Social health protection: An ILO strategy towards universal access to health care. Geneva: International Labour Organisation; 2008.
- <sup>10</sup> ILO. Social health protection: An ILO strategy towards universal access to health care. Geneva: International Labour Organisation; 2008.
- <sup>11</sup> Due to a lack of data, informal employment is measured by as proxy which is the proportion of those who are not employees (in wage/salary employment) in the total number of employed, which is an underestimate as it does not take into account the proportion of informal employment among employees in developing countries as well as developed countries.
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