

X. FAIRNESS IN FINANCIAL CONTRIBUTION

1. WHR 2000

WHO began its analysis of the fairness of household financial contributions to a health system by asking the question: Taking society's efforts to redistribute income as a given, what are fair contributions by households to the health system? As a normative claim, WHO proposed that the sacrifice created by contributing to the health system should be equalized across households independent of their health status or their utilization of health services. This 'equal sacrifice' was interpreted as an equal share of each household's capacity to pay. The goal of the health system was not seen to involve the redistribution of income, but was based on the notion that a health system should be financed in a fair manner.

Household payments to the health system included all financial contributions attributable to the household through taxes, social-security contributions, private insurance, and direct out-of-pocket payments. Household capacity-to-pay was defined as household effective income net of subsistence expenditure, where effective income was taken to be the level of consumption of the household (or 'permanent income' in a life-cycle perspective). Subsistence expenditure typically includes spending on food, basic shelter and minimal clothing, but not on health. However, in WHR 2000, it was not possible to obtain estimates of spending for basic shelter and minimal clothing, so capacity-to-pay was measured simply as total consumption expenditure minus food consumption, and a household's financial contribution (HFC_i) was measured as its total payments to the health system divided by its capacity-to-pay (CTP_i).

A fairness of financial contribution index was constructed to measure inequality in the distribution of household financial contributions. As catastrophic spending was considered to be the first concern of the health-financing system, WHO argued that households with catastrophic health expenditure should be given more weight in the index of inequality. The index should take into account catastrophic expenditure (extreme horizontal inequality) as well as moderate horizontal inequality, and incorporate people's expectations that the rich should pay more in absolute terms than the poor.

The formula used to calculate the Fairness of Financial Contribution Index was

$$FFC = 1 - 4 \left(\frac{\sum_{i=1}^n |HFC_i - \overline{HFC}|^3}{0.125n} \right)$$

where

$$\overline{HFC} = \frac{\sum HFC_i}{n}$$

This is an index of individual-mean differences rather than an index of inter-individual differences, and was built on the assumption that people care about their place in relation to the average contribution and judge inequality accordingly. The alternative would be that people care about their place relative to other individuals, and not to the average. The choice of the former index was made after conducting an internet survey of over 1,600 people in which a majority of people appeared to care more about the difference between their contribution and the average for the population than the difference between their contribution and that of every other individual in the population.

The index was estimated for 21 countries which had recently conducted household income and expenditure surveys. The results for these countries were used in a regression analysis to identify critical covariates of the FFC index, and this regression was used to estimate FFC for the remaining 170 countries.

2. Main commentaries and criticisms

The commentaries and criticisms covered three general areas: technical questions about the index used in WHR 2000; problems with data availability; and the policy relevance of the FFC index.

The FFC index

The first technical question raised about the FFC index used in WHR 2000 was that it could penalize countries with very progressive payment systems because perfect fairness was defined as the situation in which all households contribute an equal share of their capacity-to-pay. Countries with very progressive payments where the rich pay a higher proportion of their capacity-to-pay than the poor would then be shown as having an unfair health system (Shaw 2001; Wagstaff 2001; Ministry of Health, Vietnam 2001; Wagstaff and Van Doorslaer 2001; Travassos 2001; Ugá et al. 2001; WHO Regional Office for the Americas 2001; World Health Organization 2001).

Secondly, the FFC Index is found to be relatively insensitive to vertical inequality (Ammar and Kasperian 2001), an aspect that policy makers can target – as opposed to horizontal inequality, which they cannot so easily target.

Thirdly, measuring capacity-to-pay as total expenditure minus food consumption was criticized because much of the food consumption of the rich is not subsistence spending (Klavus 2000; Navarro 2000). Subtracting food consumption from total expenditure may underestimate the capacity-to-pay of rich households (Ammar and Kasperian 2001).

Fourthly, the technical consultation and some of the regional consultations suggested that the interval-scaling properties of the FFC Index had not been established and that the units of the index were not interpretable (Szwarcwald 2002).

Data availability

Household income and expenditure surveys that had appropriate information for the construction of the index were available for only 21 countries. This was not seen as sufficient for estimating an FFC Index for all 191 Member States – there was simply too much missing data (Williams 2000; Nord 2002).

Policy relevance of the FFC index

Some commentators at the regional consultations suggested that policy makers needed to have the ability to drill down to the components of the index and to identify the impact on vertical inequality, horizontal inequality and catastrophic payments separately. A second issue was whether policy makers might be interested in the income redistributive effects of health payments in addition to inequality in the financial burden of payments (Wagstaff 2001).

Thirdly, the FFC Index does not take account of the utilization of health services (Travassos 2001). A system in which all people pay the same low proportion of their capacity-to-pay would be fair according to the index, but would give no indication about whether people were unable to obtain the care they needed because of its cost.

3. WHO responses and proposals

Since publication of WHR 2000, WHO has undertaken a considerable body of analytical work to explore the implications of the commentaries, criticisms and suggestions made at the consultations, in the literature, and by SPRG members. This has led to a number of background documents being prepared for SPRG and the following proposals have been put to SPRG for the next round of performance assessment.

WHO proposes to report routinely on four indicators of the fairness of financial contributions. The FFC Index focuses on the impact of payments on a household's financial burden – in what is referred to as the 'burden space'. In addition to the FFC Index, which summarizes inequality in the distribution of financial burdens, a threshold measure – the proportion of households facing catastrophic expenditures due to health payments – will also be reported. Because of interest expressed by policy makers and researchers since WHR 2000, WHO also proposes to estimate and report the impact of health payments in the 'income space'. Two indicators would be used – the impact of health payments on the overall income distribution, and the percentage of households who fall below the poverty line due to health payments. WHO background documents prepared for SPRG showed that it is feasible to use both indicators with the available data, although the different indicators do attempt to capture different concepts.

For the FFC Index, WHO proposes to change the mathematical formula by using a cube root function to transform the index back into natural units, thereby improving its interpretability.

$$FFC = 1 - \sqrt[3]{\frac{\sum_{i=1}^n |HFC_i - HFC_o|^3}{n}} \quad \text{where} \quad HFC_o = \frac{\sum HE_i}{\sum CTP_i}$$

This index still belongs to the individual-mean family and it is an absolute measure of inequality. It retains the property of the earlier FFC index in that it places a larger weight on households with catastrophic expenditure.

WHO also proposes to change the measure of household capacity-to-pay (CTP) in response to the criticism that food expenditure is not a good indicator of subsistence expenditure. CTP will be redefined as total household expenditure minus the level of expenditure corresponding to the international poverty line (in local currency), as long as total expenditure exceeds this poverty line. In households where total expenditure is less than the estimated poverty line, CTP will be taken to be total expenditure minus the actual food expenditure of the household. The poverty line estimate of 'subsistence' is lower for rich households than the total food expenditure that was used in WHR 2000 to define 'subsistence', which increases the apparent capacity-to-pay of the rich.

Perfect fairness is still defined as each household contributing an equal share of its (redefined) CTP. Although it is theoretically possible that countries with very progressive tax systems may depart from total fairness according to this definition, preliminary empirical results from 55 countries suggest that this does not happen in practice.

WHO also reported to SPRG the results of decomposition of the FFC Index into different components – those due to extreme horizontal inequality related to catastrophic health expenditure, to mild horizontal inequality, and to vertical inequality. Vertical inequality has a small measured component relative to horizontal inequality. For countries with a low value of the FFC Index, inequality is primarily attributable to household catastrophic spending.

Since the publication of WHR 2000, intensive efforts have been made in collaboration with countries to identify new data sources. Currently 104 surveys from 80 countries are available and WHO proposes to continue to seek new sources of data. This will be in addition to questions included in the World Health Survey on assets.

Finally, it is possible that two health systems have the same FFC score – for example, in one system everyone can afford health services, but in the other system a part of the population cannot. WHO proposes, however, that in the second case the population will show poorer levels of health and greater inequalities in health, *ceteris paribus*, than in the first. Hence the problem of poor access will be reflected in poorer health outcomes and in lower overall goal attainment. To try to account for non-use of services because of inability to pay would be double counting in the FFC Index.

4. SPRG comments and recommendations

SPRG endorses the suggestion of routinely reporting on four types of measures of the impact of household financial payments – two in the burden space, and two in the income space. This provides information that is useful to policy makers for different questions that they might wish to address. SPRG also accepts that the new mathematical formulation of the FFC Index is an improvement on the original formulation. The need to obtain household survey data from many more datasets was a common and valid source of criticism of WHR 2000. SPRG emphasizes the need for WHO to reduce the estimation of 'missing data' to the minimum.

SPRG members noted that the cubing formula for the FFC Index in WHR 2000 may have been responsible in large measure for the finding that horizontal inequality accounted for most of the inequality in financial burdens. Another factor responsible for the relatively small component of vertical inequality (compared with horizontal inequality) was that progressivity had already been built into the index through the definition of capacity-to-pay. SPRG members hypothesized that the greater the degree of progressivity that is built into capacity-to-pay, the smaller will be vertical inequality relative to horizontal inequality in the decomposition of the FFC Index.

Some members were concerned about non-utilization of health services by the poor because it was unaffordable. This would lead to the poor making zero financial contributions compared with rich users making significant contributions, and result in an overestimate of measured progressivity (Ammar and Kasperian 2001).

Although the WHO proposal to take the cube root of the differences in the original formula (to transform it back into natural units) might yield better interval-scale properties for the FFC Index, it would make decomposition into various components more difficult to undertake. The decomposition of the FFC Index would no longer be additively separable into identifiable and easily interpretable components of inequality.

SPRG has the following further comments and recommendations.

- (i) WHO should explore ways of controlling for differences in reference periods over which households are asked to report their expenditures. For any given pattern of health expenditures and income flows, the financial burden (or ratio) will be very sensitive to the time frame over which expenditures in the numerator and denominator are measured. An expenditure that is deemed to be catastrophic for a one-week reference period may not be considered catastrophic over a one-month (or longer) reference period. As reference periods differ among the country surveys that are used for the analysis of fairness of financial contributions, cross-country comparisons cannot be made without controlling for these differences.
- (ii) Independently of the empirical problems involved in comparing the incidence of catastrophic health expenditures and inequality in FFC across countries, there is a prior conceptual question as to the appropriate time period for assessing financial burden. WHO needs to elaborate and justify the concept of burden with respect to which the fairness of financial contributions should be assessed.
- (iii) SPRG supports the use of the poverty line to define capacity-to-pay, and encourages WHO to explore the use of variable poverty lines across different regions.
- (iv) The burden need not be defined simply in terms of capacity-to-pay measured as the ratio of expenditure flows over the appropriate time period. An alternative definition might include stock variables in the denominator such as financial and other assets. WHO should explore ways – methodological and empirical – of introducing household assets into the calculation of capacity-to-pay.
- (v) In different health insurance systems, there are differences in time-lags between incurring a health expenditure and receiving

reimbursement. This can affect the comparability of FFC across different settings.

- (vi) Some SPRG members noted that inequality in out-of-pocket payments has different policy implications compared to inequality in overall health financing. They also wished to see an assessment of the financial barriers to fair usage of health services.
- (vii) Inequality in financial contributions is affected by utilization of health services when these are paid for out-of-pocket. In predominantly private health-care systems, the poor may not use services because they cannot afford them. WHO should explore the biases that result from comparing measured inequality of financial burdens when there are different degrees of use and non-use of the system. The present WHO measure of FFC compares systems where financial contributions and utilization are independent with systems where they are endogenous and one depends on the other.

5. References

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