Supplementary data 1 The questions in the questionnaire of NHSS employed to calculate indicators

Food consumption expenditure in each household was measured by the question, "How much did your household spend in food consumption expenditure during the last one year?"

The question, "How much did your household spend in living expenditure during the last one year?" was chosen to measure the total living expenditure in each household. Actual household size was measured by the question, "How many people have a long-term residence at your household?"

The question, "How much did your household spend in medical expenses (without compensations from a third party) during the last one year" was chosen to measure the out-of-pocket health expenditure payment in each household.

Supplementary data 2
Table 1 Determinants of catastrophic health expenditure.

Determinant	β (95%CI)	SE	Z	P
Gender of householder (male vs female)	-0.51(-0.62--0.40)	0.06	-8.94	<.0001
Age of householder	0.28(0.11-0.46)	0.09	3.12	0.0018
Educational level of householder				
Elementary school vs Illiterate	-0.35(-0.48--0.22)	0.07	-5.31	<.0001
Junior high school vs Illiterate	-0.49(-0.64--0.35)	0.07	-6.84	<.0001
Senior high school or above vs Illiterate	-0.90(-1.11--0.70)	0.11	-8.56	<.0001
One or more members older than 60 years (yes vs no)	0.39(0.21-0.56)	0.09	4.35	<.0001
One or more members younger than 5 years (yes vs no)	0.03(-0.11-0.17)	0.07	0.37	0.7104
Number of household members	-0.27(-0.31--0.24)	0.02	-14.3	<.0001
Employment (employed vs others)	-0.81(-0.97--0.65)	0.08	-7.58	<.0001
Marital status (married vs others)	-0.63(-0.78--0.48)	0.08	-7.24	<.0001

Supplementary data 3 The definition of poverty line

The poverty line is defined as the average food expenditure of the household whose food expenditure share of total household expenditure is within the 45th and 55th percentile of the total sample.[1] Considering the economy scale of household consumption, the household equivalence scale is used rather than actual household

size. The equivalence scale is:

$$eqsize_h = hhsize_h^{\beta}$$

where $hhsize_h$ is the household size. β equals 0.56.

The poverty line can be calculated as follows:

1. Generate the food expenditure share ($foodexp_h$) for each household by dividing the household's food expenditure by its total expenditure

$$foodexp_h = \frac{food_h}{exp_h}$$

2. Generate the equivalent household size for each household as

$$eqsize_h = hhsize_h^{0.56}$$

3. Divide each household food expenditure by the equivalent household size to get equivalized food expenditures ($eqfood_h$)

$$eqfood_h = \frac{food_h}{eqsize_h}$$

4. Identify the food expenditure shares of total household expenditure that are at the 45th and 55th percentile across the whole sample, name these two variables as $food45$ and $food55$. If the survey includes a household weighting variable, the percentile calculation should consider the weight.

5. Calculate the weighted average of food expenditure in the 45th to 55th percentile range. This is exactly the poverty line (pl)

$$pl = \frac{\sum w_h * eqfood_h}{\sum w_h} \quad \text{where} \quad food45 < foodexp_h < food55$$

References

1.   Xu K. Distribution of health payments and catastrophic expenditures methodology. Geneva: Department of Health System Financing, WHO; 2005.