Redistributive effect of health care financing

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Introduction

Fundamental conditions of a good health systems

Care ensures:

- Availability
- Appropriateness
- Adequacy
- Affordability
- Good governance and accountability
- Equitable servicing and inclusiveness
- System efficiency
- Quality of care: choice, innovation, adaptability

Determinants of health care expenditure and health outcome

- Impact and effect of service
- Health care utilization and standardization
- Health care need and reciprocation
- Funding and allocation
- Payment modes
- Demographic characteristics

Determinants of health care expenditure and health outcome (contd.)

- Subsidies
- Partners and tiers
- Life style (prevention and promotion)
- Standard of living (income, asset, expenditure, consumptions, use value of resources)
- Location of consumer

Catastrophic illness

- Socio-economic consequences of the costs of illness for households are often referred to “catastrophic” costs of illness (O'Donnell et al. 2008: 203).
- The costs of illness are considered to be catastrophic when, costs of coping with an illness force households to spend less on other basic needs (such as food or school fees), to incur debts, or to sell productive resources (Russell 2004: 147).
- Household surveys show that on average, households spend between 3-5% of total income on health (Russell, 1996)

Catastrophic illness (contd.)

- The threshold values used in studies vary between 5% and 20% of the household income (Berki 1986, Wyszewianski 1986). A threshold of 10% of the household income is considered by many authors to be a suitable guide value (Ranson 2002, Russell 2004,)
- Gertler and van der Gaag (1990) suggest that, typically, the price elasticity of demand for healthcare services exceeds unity at prices higher than 5% of nonfood expenditure implying that at this level financing health care would become a heavy burden for a typical household.

Why universal health coverage (UHC)?

- Buying health care should not be determined by one's affordability, because of two reason's:
  - Justice and fairness considerations
  - Externality of the health outcomes
- This means that benefits of health care and payment for it should be equitable and should ensure financial protection against the cost of procuring health care, so that none is pauperized because of illness.
- This also needs that fund for popular health care needs to be collected, allocated and spent

Why universal health coverage (Contd.)?

- UHC aims at covering everyone, irrespective of whether a beneficiary can afford it or not.
- UHC aims at equity in providing health care services
- Health care financing may be efficient, if:
  - The service package is efficient
  - The management is efficient (which is based among others, on the mode of premiums and payments, i.e. skill in purchasing the services)
- UHC evoke camaraderie, which is a precondition among the payers

The Payment Issues

Source of health care financing

- Taxes
- Social insurance
- Private insurance
- Community financing
- Out of pocket

Modes of payment for health care

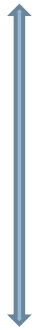
- Individual
- Employer
- State (100% by Govt. in UK)
- Mixed-state, individual and employer in Germany and France; medicare (federal) and medicaid (federal and state) for some in US
- Which one is good?

Which type of service provision is good?

- By the Govt. like in UK?
- Through contracted providers – Germany, Japan?
- Through market based private providers as in US?
- Publicly driven as in our countries?
- Which one is good?
  - Private system is expensive
  - In public system
    - Firm budget ceilings that limit the resources
    - Price limits on new treatments;
    - Profit caps;
    - Procurement of low priced medicines or equipment

The players and the interactive issues

- Service seeker
- Payer
- Provider
- Supplier or manager players?



Should be by Same or different

- Benefits of competition
- Pros and cons of market driven service
- Who decides? Service seeker? Payer? Provider? Supplier?
- How can service seeker decide? What if service seeker is the payer?

The players and the interactive issues(contd.)

- What is the package of services?
- Who are the beneficiaries?
- Who the services will be bought from?
- Who will buy and what will be the administrative cost for buying?
- What are the conditions that need to be considered on generating, allocating and paying for UHC?
- Who are the decision makers?

Reasons of inequality in health care inputs/ payment/outcome

Inequality may be due to variations in:

- availability of care
- strength of health systems and quality of care
- socio-religious **(**e.g., education, ethnicity, culture, taboos, housing**)**
- **economic conditions (income, payment, consumption)**
- valuation of health
- **insurance coverage/ price of service**
- **mode and source of financing (e.g., subsidy, taxation, OOP)**
- demography (e.g., sex, age group)
- environment
- distance to health facilities or **location**
- **living standards and life style** (e.g., smoking, sanitation, cooking)

The Equity Issues

Analysis of redistributive effect of health care financing: basics

- Health care financing should redistribute disposable income.
- Redistribution occurs when payment for health is compulsory, not voluntary (e.g., OOP) and independent of utilization, most effectively when health care is partly financed from govt tax. If tax liability rises disproportionately with gross incomes, then the post-tax distribution of income will be more equal than the pre-tax distribution.
- Health care financing should have social welfare/ standard of living enhancing effect, which is reduced if out of pocket expenditure is voluntary.
- It should also reduce Gini coefficient gap (the lower the post-payment Gini coefficient gap the more the

Analysis of redistributive effect of health care financing: basic (contd.)

- Redistribution may be horizontal and vertical
- Horizontal redistribution occurs when persons with equal ability to pay contribute unequally to health care payments.
- The notion of horizontal and vertical equity may be best measured by the post-payment equity or Gini coefficient.
- Horizontal equity increases redistributive effect, but only if the health care payment rate is proportional to prepayment income and if post payment equity is also taken into consideration

Analysis of redistributive effect of health care financing: basic (contd.)

- Horizontal (within the same economic status) and vertical (between the various economic status) categorization in effect may be arbitrary, e.g., what should be the interval of income level for bracketing incomes within a horizontal group. If the horizontal bracketing is big, inequity will be larger, since people with widely varying income will be bracketed into the same class for payment and benefit purposes.
- As arbitrary as these are, vertical and horizontal classifications for fixing premium should be set in a way that it ensures post-payment equity

Analysis of redistributive effect of health care financing: basic (contd.)

- If horizontal inequity is reduced vertical redistribution may be attained relatively easily. However, the more the vertical equity is the more is the redistributive effect.

- Horizontal equity is equal treatment of equals and vertical equity is proportionate unequal treatment of

Analysis of redistributive effect of health care financing : the concentration curves

- The Lorenz concentration curve is drawn based on the variable of interest, e.g., cumulative proportion of people able to pay (ATP) for health care against which other variables are matched, e.g., taxes, insurance payment.

- Lorenz curves are plotted, e.g., for the cumulative %age of a variable of interest, e.g., health expenditure or ATP for health care (y axis) against the cumulative percentage of the population, ranked by other variables, e.g., living standards, taxes, income etc. beginning with the poorest and ending in the richest

Analysis of redistributive effect of health care financing : concentration curves (contd.)

- Income share concentration curve plots the cumulative proportions of population (ranked according to pre-tax income) against the cumulative proportion of income.
- The payment concentration curve plots cumulative proportions of population (ranked according to pre-tax income) against cumulative proportions of payment for health care.
- If the payment is proportional to income, payment concentration curve and pre-tax income share curve coincide. If financing system is progressive (payment rate rises faster than income) payment concentration curve lies outside income share curve (Lorenz curve). In a regressive system the locations of these curves will be inside in the Lorenz curve.
- If a curve lies sometimes above and sometimes below the Lorenz curve then a statistical test is applied to find out if these differences are significant or the inequality is assessed

Analysis of redistributive effect of health care financing : concentration curves (contd.)

Lorenz (concentration) dominance test rejects the null (of non-dominance) in favor of dominance if there is at least one significant difference between curves (or a curve and the 45^0 line) in one direction and no significant difference in the other, e.g., if there is at least one quintile point at which curve of one variable lies significantly above the curve of another variable and there is no quintile point at which the latter curve lies above the former curve, then it is concluded that the former curve

Analysis of redistributive effect of health care financing : concentration curves (contd.)

- Concentration curves can be used to identify whether SES inequality in some health variable exists and whether it is more pronounced at one point in time than another or in one country than another.

- A concentration curve however, does not give a measure of the magnitude of inequality

- The degree of progressivity may be depicted by the size of the area between the Lorenz (income share) concentration curve and the matching (payment) concentration curve (Kawkani's concentation index)

Analysis of redistributive effect of health care financing: concentration index (contd.)

Kawkani's concentration index (KI) is a weighted measurement of the extent to which the burden borne by different groups depart from proportionality by magnitude of inequality, e.g., by a health indicator (e.g., health practice, health outcome) and **SES**, that can be compared conveniently across many time periods, countries, regions, or whatever is chosen for comparison. KI is $\pi K = C - G$, where C is the concentration index (e.g., health payments) and G is the Gini coefficient (e.g.,

Analysis of redistributive effect of health care financing: concentration index (contd.)

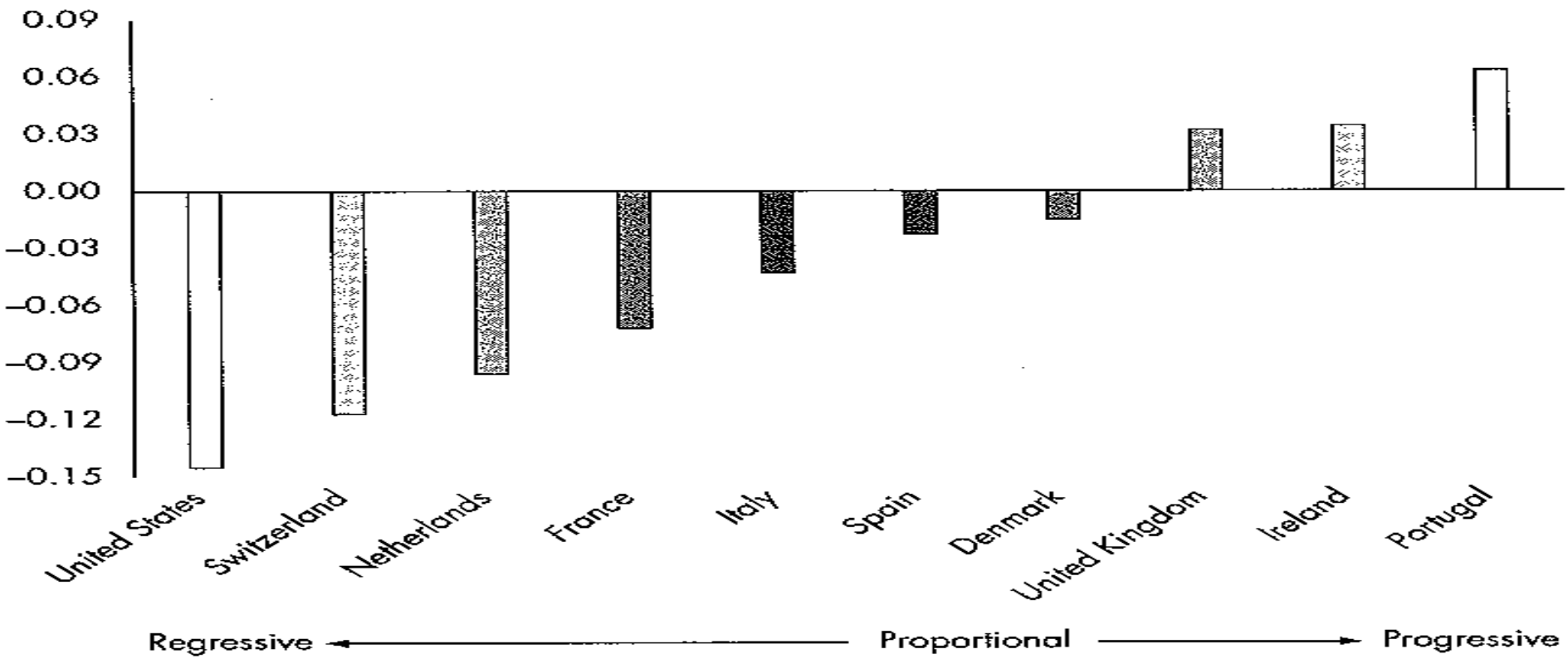
- The index takes a negative value when the curve lies above the line of equality, indicating disproportionate concentration of the health variable among the poor, and a positive value when it lies below the line of equality.
- The properties of the concentration index however, depend on the measurement of the variable of interest.
- If the health variable is “bad” such as ill health, a negative value of the concentration index means ill health is higher among the poor.
- KI is negative (positive) if the concentration curve dominates (is dominated by) the Lorenz curve. In case

Analysis of redistributive effect of health care financing: concentration index (contd.)

- A negative value of πK indicates regressivity, i.e., LH(p)- concentration curve for health payments, lies inside L(p)- the Lorenz curve for ATP. A positive number indicates progressivity- LH(p), lies outside L(p).
- The index could also be zero if the curves were to cross and positive and negative differences between them cancel. Given this, it is important to use the πK, or any summary measure of progressivity, as a supplement to, and not a replacement of, the more general graphical analysis.

Progressivity of payment in some countries

Kakwani's index of equity in health care spending in selected high-income countries



Note: The data refer to various years between 1980 and 1987.
Source: Wagstaff and van Doorslaer 1993.

Analysis of redistributive effect of health care financing: concentration index (contd.)

- If a health variable of interest (e.g., mortality) takes higher values, its corresponding concentration curve will lie above the line of equality. The farther the curve is above the line of equality, the more unequal is the distribution of the characteristics. If a concentration curve is drawn for the cumulative percentage of health subsidies accruing to the poorest percent of the population and if everyone, irrespective of their living standards, has exactly the same value of the health variable

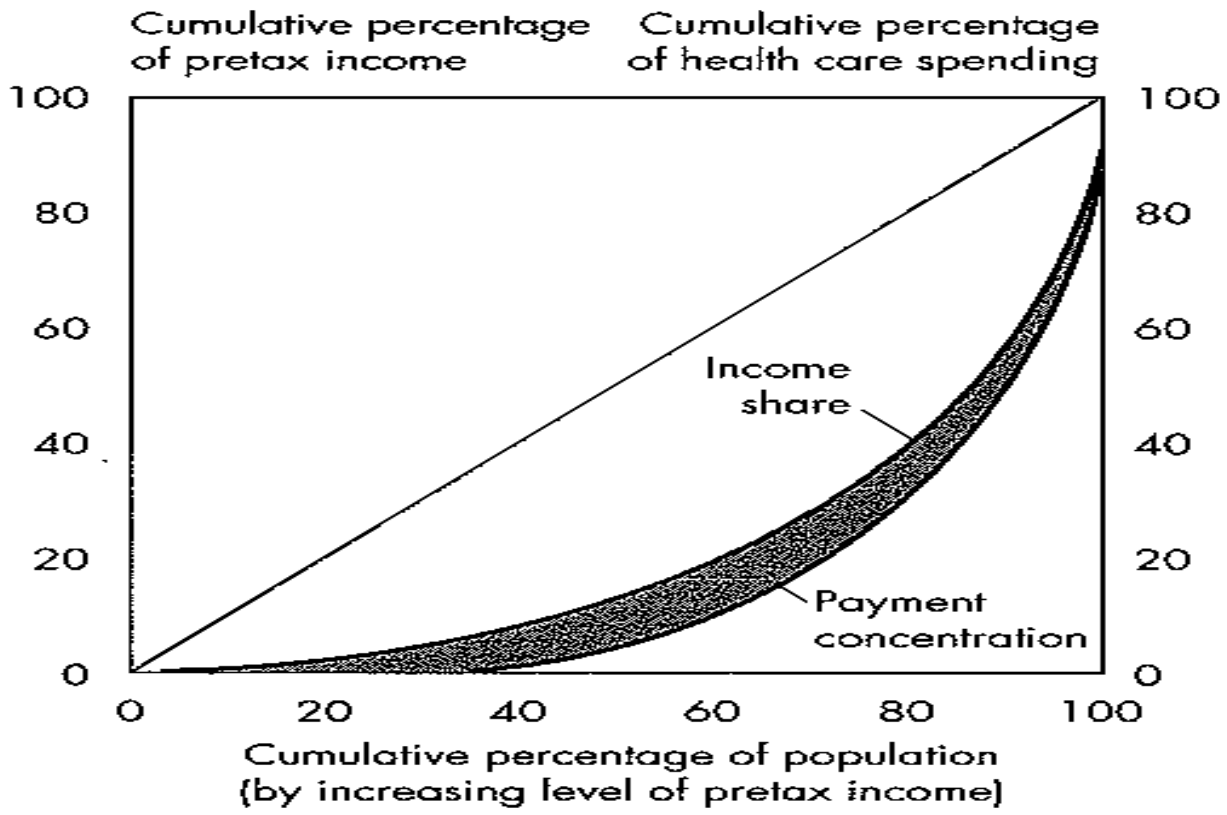
Analysis of redistributive effect of health care financing: concentration index (contd.)

- The progressivity of health financing can be measured by a weighted average of the Kakwani indices for the sources of finance, where weights are equal to the proportion of total payments accounted for by each source. Thus, overall progressivity depends both on the progressivity of the different sources of finance and on the proportion of revenue collected from each of these sources.
- If health care payment is proportional to income, payment concentration curve and the pre-tax income share curve coincide, i.e. in the case in which there is no socioeconomic-related inequality, the

Analysis of redistributive effect of health care financing: concentration index (contd.)

Payment progressivity is given by the area between the payment concentration and income share curves. The Kawkani index shows the payment is proportionate to income

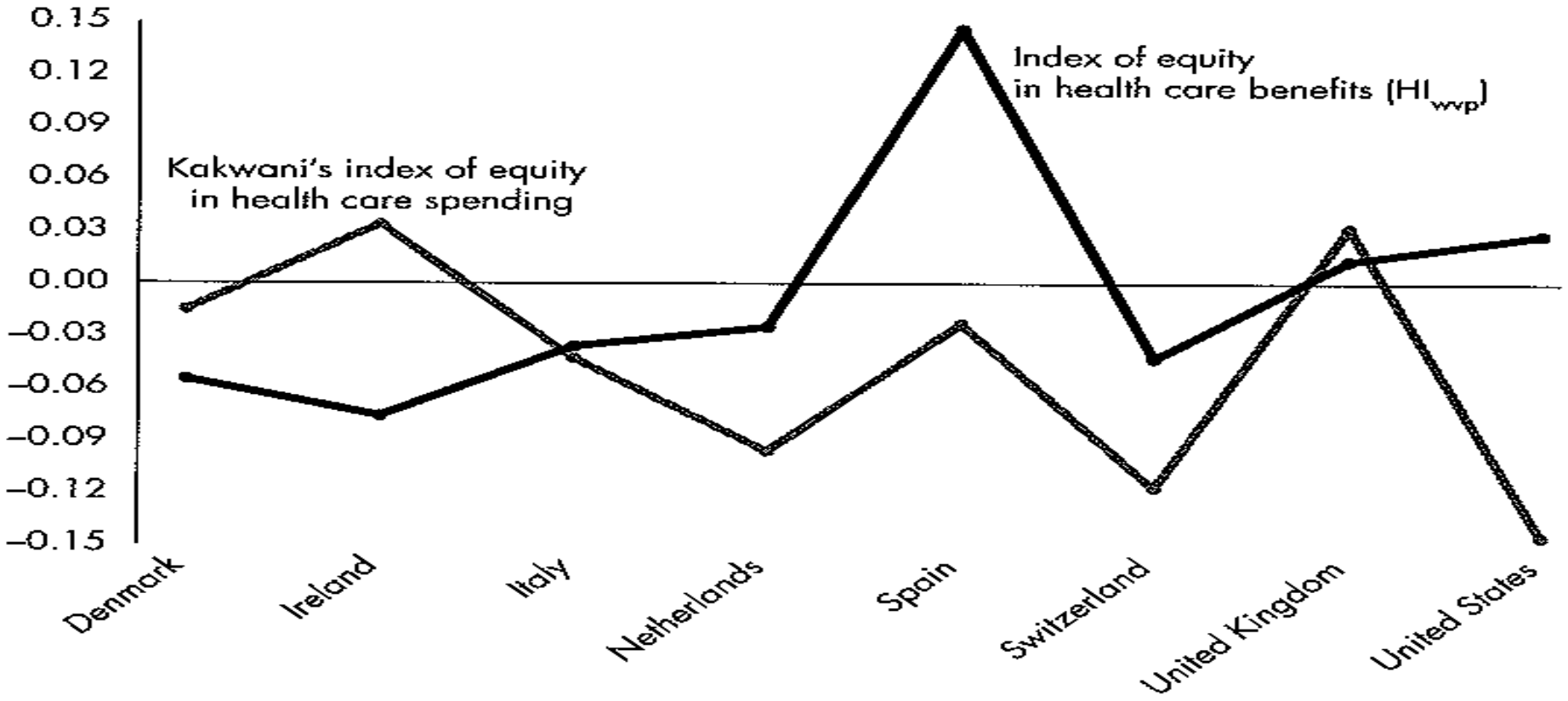
[redacted] Kakwani's index of equity in health care spending



Note: The area of the shaded region is the level of Kakwani's index.
Source: Adapted from Wagstaff and van Doorslaer 1993.

Analysis of redistributive effect of health care financing: concentration index (contd.)

Comparing equity in health care finance and benefits



Note: For the index of equity in benefits, a negative value indicates a more progressive outcome; for Kakwani's index of equity in spending, a negative value indicates a more regressive outcome.
Source: Wagstaff and van Doorslaer 1993.

Problems with concentration curve

- Inequality measurement is not the only goal that should be measured to assess real situation. What if the average level (e.g., of health) is already good?

- Wagstaff measures the achievement index, which is the average level and the inequality in health between the poor and the better-off. It is a weighted average of the health levels of the various people in the sample, in which higher weights are attached to poorer people's health

Problems with Kawkani index

- A concentration index can be measured based on ratio measures but not from categorical data. Transformations are subject to the means of the transformation type
- Caution therefore is needed in using the concentration index to compare inequality, e.g. In child mortality and immunization rates with substantial differences in means of these variables. An additional step is to normalize the concentration index by dividing through by 1.0-u

Problems with Kawkani index (Contd.) and other assessments

- If the health variable of interest takes negative as well as positive values, then its concentration index is not bounded within the range of (–1 to +1). If mean of the variable is 0, the concentration index would not be definable.
- Inequity can be measured by the concentration index once health care use has been standardized for need. This standardization is also required for assessing horizontal equity (of utilizing

Assaying the determinants of inequity

Oaxaca decomposition explains the gap in the means of an outcome variable between two groups (e.g., between the poor and the non-poor). The gap is decomposed into the part that is due to group differences in the magnitudes of the determinants of the outcome, and group differences in the effects of these determinants, e.g., due to the differences in educational attainment *and the* effects of educational attainment. Using group differences for explaining the outcome is a limitation of this

Measures of changes in outcome and determinants of health

- Techniques to assay changes in the outcome as well as the determinants of health and the degree of inequality in the mutual changes are also available

- How these variables act on each other – directly or indirectly is also assayable.

Recommendations

- Emphasize on prevention of disease and promotion of health in the service package
- Use generic medicines for efficiency
- Look into the equity issues in-depth, including the determinants. Equity in payment, in itself, has not been found to provide equity in benefit.
- Equity assessment should aim at post payment equity or equity in post payment income or change in living standard

Recommendations (Contd.)

- Reduce administrative cost
- Pay attention to conflict of interest and transparency in service procurement and payment
- The public sector needs to facilitate more vertical redistributive effect, if necessary from public fund, which is the most progressive and also easily attainable.