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Equity and Equality of Health Care Use Across Europe

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Motivation:

- Horizontal equity : People in equal need for health care should receive equal care irrespective of other non-need characteristics
  - ➢ *Equitable:* Differences in utilisation due to differences in morbidity
  - ➢ *Inequitable:* Differences in utilisation due to differences in socio-economic characteristics
- Income is a proxy of the individual socio-economic status (SES)
- Public importance for the debate on two-tier medicine in Germany

Research questions:

(i) Has horizontal equity been achieved by European Health Care Systems?
(ii) Which factors drive inequity?

Empirical approach:

- SHARE data from 2004 (Survey of Health, Ageing and Retirement in Europe)
- Inequity is captured by horizontal inequity (HI) indices which indicate whether utilisation favours the poor or the rich → 1
- Measurement of inequity requires standardisation for morbidity and related factors in order to identify differences in utilisation with respect to socio-economic status → 2
- HI indices are decomposed in order to account for heterogeneity of individual preferences with respect to health and health care → 3

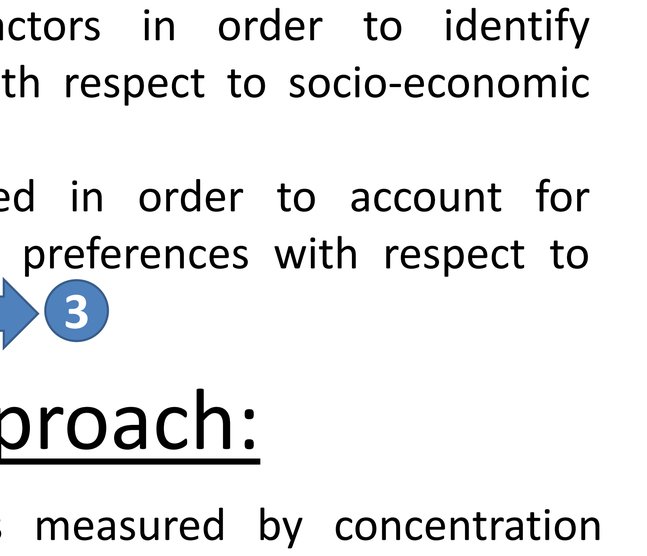
Econometric approach:

1 Inequality of utilisation is measured by concentration indices which are similar to Gini coefficients

- HI index results from the difference between the unstandardized and the standardized concentration index
  - ➢ Estimation: OLS regression where R indicates the degree of inequity

$$HI = CI - CI_X \Leftrightarrow \sigma_R^2\left[\frac{y_i}{\bar{y}} - \frac{y_i^X}{\bar{y}^X}\right] = \alpha + \beta R_i + \varepsilon_i$$

- Graphically it is a measure of the area between the distribution of actual utilisation and need expected utilisation by income



Source: Van Doorslaer et al. (2000, JHE)

2 Standardisation procedure: hurdle model

- ➢ Separates the initial decision to contact a physician (first hurdle: logit) from the decision concerning subsequent visits (second hurdle: negative binomial truncated at zero)
- ➢ Standardisation:

$$y_i^X = y_i - G\left(\hat{\alpha} + \sum_j \hat{\beta}_j x_{ji} + \sum_k \hat{\gamma}_k \bar{z}_k\right) + \frac{1}{n}\sum_i G\left(\hat{\alpha} + \sum_j \hat{\beta}_j x_{ji} + \sum_k \hat{\gamma}_k \bar{z}_k\right)$$

3 Decomposition procedure: micro-simulation based decomposition approach (Huber 2008, JHE)

- ➢ Imposes several restrictions on parameters and variables of the hurdle model
- ➢ Gradual relaxation of restrictions (i - vi) yields inequality indices which refer to the specific contribution of individual characteristics to inequality indices
  - **i. Baseline:** all individuals share the same characteristics
  - **ii. Morbidity:** individuals are allowed to differ in morbidity
  - **iii. Practices concerning participation:** morbidity parameters are allowed to vary by income quantile (logit)
  - **iv. Practices concerning conditional consumption:** morbidity parameters are allowed to vary by income quantile (negative binomial truncated at zero)
  - **v. SES indicators:** individuals are allowed to differ in their socio-economic characteristics
  - **vi. Impact of SES:** SES parameters are allowed to vary by income quantile (logit and negative binomial truncated at zero)
- ➢ Inequality due to all other factors than morbidity is supposed to be inequitable

Results:

- Common patterns:
  - Need is concentrated on the poor
  - HI concerning general practitioner (GP) visits is in favour of the poor
    - ➢ The poor visit GP more often than the rich although people in equal need are compared
  - HI concerning specialist visits is in favour of the rich
  - Heterogeneity in behaviours accounts for significant parts of inequity in Europe
- ➢ (i) In general horizontal equity has not been achieved in Europe (but results vary widely)
  - ➢ Germany: no evidence for HI
- ➢ (ii) Preferences do matter, not solely institutional characteristics
  - ➢ Institutional characteristics might channel individual preferences and thereby reduce inequity (gate keeping in the Netherlands)
  - ➢ Hypothesis: The rich directly seek specialist care in order to reduce opportunity costs; this might reduce total costs of medical care
  - ➢ Even if HI does not indicate inequity there are large opposing influences of different partial CIs