Should Rarity Matter?
Results of a Social Willingness-to-Pay Study using the Discrete Choice Experiment (DCE) Method in Switzerland

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Methods in Brief

Objectives

To investigate how Swiss citizens value selected attributes of health care interventions, with special emphasis on rarity, from a social willingness-to-pay perspective – i.e., using incremental compulsory health insurance (OPK) premiums resulting from the addition of a new treatment as the cost attribute.

To assess the sensitivity of valuation to the level of information and reflection (on the implications of rarity) offered to respondents and to the impact of information about the implied cost per patient.

To assess the feasibility of a relatively complex discrete choice experiment (DCE) design with a view towards subsequent study extensions with the objective to identify international similarities and differences with regard to the valuation of the attributes tested.

Survey Design

1. Initial Preference Formation Phase (IPF)
   - 25 open questions to stimulate reflection by respondents
   - Random assignment to 3 specific questions related rarity

2. Discrete Choice Experiment (DCE)
   - Decision cards with or without information on cost per patient (random assignment)
   - Efficient design; econometric analysis, linear conditional logit as base model; testing for interactions and nonlinearities of attributes; analyzing subsamples; preference heterogeneity, random coefficient and latent class models

   Attributes tested in Swiss study:
   1. Effectiveness of new intervention: life expectancy gained
   2. Effectiveness of new intervention: health-related quality of life gained
   3. Age of patients (or “fair innings”)
   4. Rarity of disorder (i.e., prevalence)
   5. Incremental Cost of new intervention

3. General Questionnaire
   - Health state and health insurance of respondents
   - Socioeconomic information and specific feedback

Methods in Brief

Background

Rarity (or lower prevalence) of a disease has been found to be associated with higher treatment costs per patient. Some orphan medicinal products (OMPs) rank among the most expensive drugs, which has led to concern with regard to the affordability of this success. Recent technological advances (e.g., “personalized medicine”), and the trend that more prevalent diseases may become collections of orphan diseases, raise the need to thoroughly assess the “value for money” offered by OMPs.

Conventional economic evaluation paradigms focus on cost benefit ratios at the level of patient (group). In the context of HIFAs, health-related costs and benefits are often analyzed and reported as incremental cost effectiveness ratios (ICERs). It is broadly recognized that the number of patients (as a component of both numerator and denominator) cancels out in the calculation of ICERs. By design, a focus on individual health gains only (including their subsequent additive aggregation or averaging) will mask any impact of the size of a program (or, for that matter, the number of patients concerned) on its social valuation, since it implies a linearity assumption. Accordingly, studies to measure selfish consumer preferences for health gains did not reveal a role for “rarity,” thus failing to support the case in favor of expensive technologies for orphan diseases.

It has, however, been argued that the majority of stated preference or contingent valuation studies in health care have been misspecified, because they did not capture significant elements of the value of the good in question. These are – beyond use value (the consumer perspective) – option value (uncertainty; risk averseness) and externalities (altruistic behavior; caring externalities; the will of citizens to share resources with those in need).

In order to capture option value and externalities, the payment perspective needs to reflect the social willingness-to-pay (SWTP) extra compulsory health insurance fees, which implies a shift of the payment vehicle from cost per patient to cost per citizen, i.e., incremental budget impact of a new program divided by the size of the population covered by a health scheme. Against this background, we designed the European Social Preference Measurement (ESPM) project. Here we report key results of the Swiss pilot (“SoftPI”). Social Preferences for Health Care interventions study with respect to the role of rarity.

Key Results

Preference Formation Phase: Stated Attitudes towards Rarity (Subsample, n = 749)

Flexible Specification of Attributes with Dummy Variables: Functional Form

Implications

- All attributes investigated in the Swiss pilot study had an impact on choice probability and citizens’ (social) willingness-to-pay.
- The variables with the highest impact on choice probability were change in remaining life years, quality of life, and extra insurance premium per year.
- The small observed impact of prevalence translates into a profoundly in-creasing implied (social) willingness-to-pay per patient (and per life year gained) with decreasing prevalence (or increasing “rarity”).
- The results pass tests of internal consistency, rationality, and theoretical validity.
- The observed impact of rarity on implied (or social) willingness-to-pay per patient (and per life year gained, with or without quality adjustment) needs to be confirmed considering numerous questions, including but not limited to (a) deontological preferences (“Should the numbers count?”), (b) a potential role of an availability heuristics in the subgroup randomized to more reflection on rarity, (c) respondents’ comprehension of the math behind the numbers, (d) any impact of “insensitivity of WTP to size of the good,” (e) the international consistency of observed social preferences.