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The German Example (IQWiG): “The Efficiency Frontier Approach”

According to current law in Germany the Institut fuer Qualitaet und Wirtschaftlichkeit (IQWiG) may be commissioned by Federal Joint Committee (FJC, Gemeinsamer Bundesausschuss, G-BA) to perform health economic evaluations for the Statutory Health Insurance (SHI). These evaluations should address the appropriateness of prices of health technologies and provide information to the National Association of Statutory Health Insurance Funds (Spitzenverband der Gesetzlichen Krankenversicherung, GKV-Spitzenverband) for setting a maximum reimbursable price for these technologies. The evaluations are carried out after the intervention has been approved and accessed market (i.e. *ex post and already fully reimbursed*).

To present the information clearly and comprehensively, an “efficiency frontier” plot is created. Each intervention is plotted on a coordinate system as follows: net cost per patient generated by the application of the intervention on the horizontal axis (x-axis) and the health benefit (or, where applicable, harm) provided by the application of the intervention on the vertical axis (y-axis). The resulting figure shows decision makers how much benefit can be obtained from the resources used in the specific therapeutic area by the application of a specific intervention. At a glance, the decision maker gains an impression of both the comparative cost-effectiveness ratios of and the degree of variation in treatment options. Yet the recommended maximum reimbursable price cannot be directly read off the cost axis on the graph; it is derived from the average net cost per patient that include all relevant cost components from the perspective chosen.

There are basically three different scenarios resulting from the efficiency frontier approach:

- i. If a new intervention is more efficient (i.e. above and to the left of the efficiency frontier), this scenario suggests that the intervention’s current price is reasonable (more efficient than current practice).
- ii. If a new intervention is less efficient (i.e. below and to the right of the efficiency frontier), this scenario suggests that the intervention’s current price is not reasonable and should be adjusted down.

- iii. If a new intervention has a cost-effectiveness ratio comparable to efficient existing interventions, then its current price may be reasonable. However, this requires further evaluation (e.g. by means of a budget impact analysis), particularly for those interventions to be assessed which exceed the corresponding alternative intervention in benefit as well as in costs.

Decision makers can use the efficiency frontier as a guideline by looking at the position of a new intervention in relation to the position of established interventions. If there are various efficiency frontiers, the statement applies solely specific to each outcome. If different outcomes have been aggregated into a single unit, the statement applies without restriction. The effective market price of health care goods does not necessarily correspond to the SHI insurants' willingness to pay for the relevant benefit. This results from the fact that there is no complete market for the health care services of the SHI. If a certain willingness to pay for particular services were to be identified in the future, it could be included on the chart. This would form an additional criterion for the decision makers to set a maximum reimbursable price based on a recommendation.

The efficiency frontier plot may be used for other purposes as well. The diagram, for instance, shows inefficient interventions for specific endpoints (i.e. those that are both more costly and less beneficial than other existing options).

Subsequently, a budget impact analysis will be performed which will serve as an aid for the decision makers as it gives estimates of the possible consequences on health care expenditure. In this way, the reasonableness of the coverage of costs by the insurants may be judged.