

METHODS:

For this study, data were used from the World Health Organization and the World Bank on 177 countries. The following variable groups were chosen: total density of medical imaging technologies, surgical workforce distribution, number of surgical procedures, and risk of catastrophic surgical care expenditures. The *k*-means clustering algorithm was used to classify countries according to the surgical indicators. The optimal number of clusters was determined with a within-cluster sum of squares and a scree plot. A Silhouette index was used to examine clustering performance, and a random forest decision tree approach was used to determine risk predictors of catastrophic surgical care expenditures.

RESULTS:

The surgical care indicator results delineated the countries into four groups according to each country's income level. The cluster plot indicated that most high-income countries (for example, United States, United Kingdom, Norway) are in the first cluster. The second cluster consisted of four countries: Japan, San Marino, Marshall Islands, and Monaco. Low-income countries (for example, Ethiopia, Guatemala, Kenya) and middle-income countries (for example, Brazil, Turkey, Hungary) are represented in the third and fourth clusters, respectively. The third cluster had a high Silhouette index value (.75). The densities of both surgeons and medical imaging technology were risk determiners of catastrophic surgical care expenditures (Area Under Curve = .82).

CONCLUSIONS:

Our results demonstrate a need for more effective health plans if the differences between countries surgical care indicators are to be overcome. We recommend that health policymakers reconsider distribution strategies for the surgical workforce and medical imaging technology in the interest of accessibility and equality.

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VP136 The Impact Of Hospital Costing Methods On Economic Evaluations

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INTRODUCTION:

There are several methods to cost hospital contacts when estimating the cost effectiveness of a new intervention. In England, the National Institute for Health and Care Excellence (NICE) recommends the use of diagnosis-related group (DRG)-based costs as a valuable way of costing hospital resource use. There are three main sources of unit costs of a DRG: (i) tariffs as used for reimbursement purposes, (ii) benchmarking finished consultant episode (FCE)-level reference costs and (iii) benchmarking spell-level reference costs.

The purpose of this work is to compare the implications of choosing a particular source of DRG-based unit costs when conducting an economic evaluation.

METHODS:

As a case study, we used a cost-utility model developed to compare secondary fracture prevention models of care for hip fracture patients (1). A Markov model was derived from large primary and hospital care administrative datasets in England. Utilities were informed by a meta-regression of thirty-two studies. Hospital resource use (inpatient, outpatient, critical care and emergency care) was valued using the three different 2014–15 DRG-based unit costs and regression-based costing models were derived from 33,000 hip fracture patients to inform the health states of the model (2). For each source of DRG-based costs, we calculated mean life years, Quality-Adjusted Life Years (QALYs) and costs for a representative male and female associated with three models of care: (i) orthogeriatrician (OG)-led, (ii) nurse-led fracture liaison services and (iii) usual care.

RESULTS:

Using the benchmarking FCE-level DRG-based costs, the OG-led model was estimated to be the most effective model of care (1.77 QALYs, 95 percent Confidence Interval, CI 1.56-1.98) at a threshold of GBP30,000/QALY. However, it also resulted in the highest costs per patient. We will report the cost-effectiveness results using the two remaining DRG-based costs.

CONCLUSIONS:

Choosing a particular hospital costing method may have an impact on economic evaluations. We will reflect on the implications for the estimated hospital costs, decision uncertainty and adoption of models of care.

REFERENCES:

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VP137 Why We Should Not Meet Unmet Needs!

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INTRODUCTION:

In formulating criteria for Health Technology Assessment (HTA) and priority setting a number of such criteria have been suggested and are used, for example in multi-criteria decision making. Besides taking central aspects like severity of disease, effectiveness, cost-effectiveness and patient safety into account, we also find references to criteria like unmet needs, and lack of alternative treatment. Often these criteria are treated as on par with each other, only given different weights in decision making. However, it seems like there

is a conceptual overlap between some of these criteria and if that remains unnoticed, there is a risk of taking the same criteria into account twice. One such example is the relationship between severity of disease and unmet need. The aim of this presentation is to present a tentative analysis of the relationship between severity of disease and unmet need.

METHODS:

The presentation is based on a conceptual and normative analysis.

RESULTS:

First it will be argued that we have reason to clarify what is meant by unmet needs, whether it is a need which is not met to any degree or if it is a need for which there is no treatment with curative intent or for which there is only palliative treatment, for example. Second, analyzing unmet needs in relation to severity, a number of different scenarios will be examined, showing that unmet needs can be captured in terms of severity of disease (to some extent dependent upon how we operationalize severity of disease).

CONCLUSIONS:

The general conclusion of the study is that we have reason to carefully analyze criteria used for decision making in HTA from a conceptual and normative perspective in order to uncover logical relationships and avoid overlapping criteria. In relation to the specific question of unmet needs versus severity of disease, the conclusion is that in most cases unmet need will be redundant in relation to severity and we should be careful using both of them in decision making unless we can provide reasons for why it is an exceptional case.

VP138 Integration Of Ethics In Health Technology Assessment

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