OBJECTIVES: Personalized medicine is characterized by an increasing number of tests and payer scrutiny over their value. Depending on the use of a test, health care costs may vary with the threshold for entering in predictive uses. In our uses of tests, matching each with value hypotheses and a generic decision tree framework that may be used to study test cost-effectiveness. We make distinctions between screening (to identify those in a population likely to have or develop a disease) and diagnostic (to diagnose, predictive (to predict response to or to target a particular treatment, often referred to as a companion diagnostic), prognostic (to identify patients at risk for a specific outcome, regardless of the choice of treatment), surveillance (for patients with no sign of disease at completion of treatment to identify those at risk of recurrence), and monitoring (to detect response to treatment after completion of treatment). We specify how each test is expected to affect health care costs and/or outcomes, followed by the nature and direction of the effects. We also show the importance of properly modeling the distinction between these tests. For example, by identifying earlier or more accurately patients at higher risk, a new screening test may lead to diagnosis at lower levels of disease severity, resulting from treatments in improved life expectancy (LE) and quality-adjusted LE. Also, by identifying patients at lower risk, a new screening test may reduce costs associated with unnecessary future testing. Comparatively, we find that salient elements of a general model structure for a new screening test include assessing the risk, establishing the probability of condition, matching each with value hypotheses, and a generic decision tree framework that may be used to study test cost-effectiveness.

CONCLUSIONS: To discuss the different methods of multi-criteria decision analysis (MCDA) that could be used in health technology assessment (HTA) and their relative merits. METHODS: The current practice of health technology appraisals is based on the incremental cost-effectiveness ratio (ICER) i.e., the incremental cost per quality adjusted life-year (QALY) saved. Threshold pricing models are used to estimate the maximum value-based price assuming a new drug or technology is cost-effective. Assuming a payer-cost-effectiveness threshold, threshold pricing models are used to estimate the maximum value-based price assuming a new drug achieves its TPP, and to estimate minimum value-based efficacy, safety, and tolerability required to support a target price. To assess the effects of uncertainty, one-way sensitivity analysis and probabilistic sensitivity analysis are performed. Comparatively, we find that salient elements of a general model structure for a new screening test include assessing the risk, establishing the probability of condition, matching each with value hypotheses, and a generic decision tree framework that may be used to study test cost-effectiveness.

METHODS: We describe six uses of tests, matching each with value hypotheses and a generic decision tree framework that may be used to study test cost-effectiveness. We make distinctions between screening (to identify those in a population likely to have or develop a disease) and diagnostic (to diagnose, predictive (to predict response to or to target a particular treatment, often referred to as a companion diagnostic), prognostic (to identify patients at risk for a specific outcome, regardless of the choice of treatment), surveillance (for patients with no sign of disease at completion of treatment to identify those at risk of recurrence), and monitoring (to detect response to treatment after completion of treatment). We specify how each test is expected to affect health care costs and/or outcomes, followed by the nature and direction of the effects. We also show the importance of properly modeling the distinction between these tests. For example, by identifying earlier or more accurately patients at higher risk, a new screening test may lead to diagnosis at lower levels of disease severity, resulting from treatments in improved life expectancy (LE) and quality-adjusted LE. Also, by identifying patients at lower risk, a new screening test may reduce costs associated with unnecessary future testing. Comparatively, we find that salient elements of a general model structure for a new screening test include assessing the risk, establishing the probability of condition, matching each with value hypotheses, and a generic decision tree framework that may be used to study test cost-effectiveness.

RESULTS: A potential MCDA approach for HTA is to calculate "weighted" QALYs from the QALY weights which reflect the broader value of the product’s benefits and compare against the updated "basic threshold" value. CONCLUSIONS: There are general practical issues that might arise from using this MCDA approach in the HTA process and further research is needed to be performed to resolve the issues identified in order to ensure the success of this MCDA technique in the appraisal process.

IF YOU HAVE 2 WATCHES THEN WHAT TIME IS IT ? SELECTING A DEFINITIVE SOCIAL VALUE SET FOR MEASURING HEALTH GAINS Kind L1, Chuang LH2

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Regulatory authorities in many countries require that societal preferences are used when health (dis)benefits are reported in terms of quality-adjusted life-years (QALYs). In the United Kingdom the NICE reference case, as set out in its published technical guidance, cites EQ-5D as the requisite health-related quality of life (HRQoL) system and Time-Trade-Off (TTO) as the preferred method for eliciting societal values. This stipulation is simple to assert, but virtually impossible to implement. Operationalising TTO to predict life-expectancy, for example, is dependent on the socioeconomic position for many position and has established a de facto national "norm". These issues, however, are global in nature and common to economic evaluation of healthcare in all countries. The UK "preference" for TTO is no more than that, for no scientific case has been made for rejecting Standard Gamble (SG), commonly acknowledged to yield systematically different estimates of utility. Both methods cannot be correct - one (at least) must be in error. It is patently absurd to consider them as commensurable equivalents in QALY calculations. In principle, a similar argument arises as new value sets are published, as will be the case in respect of the s-level version of EQ-5D. Cost-utility analysis reported in the literature reveals a 10-fold difference in incremental benefits (change from baseline) when EQ-5D/HEU/ SF-6D are used to compute QALYs, sufficient to reverse the location of an ICER with respect to any threshold. Nevertheless, the principal issue is that of updating the choice of a definitive value set for reference case analysis. This paper argues for a decision-centric approach in which a new metric may only be adopted if its use in measuring incremental effectiveness yields results that are consistent with those based on the existing reference standard. The argument is exemplified through the analysis of EQ-5D in published studies.

PRM62 VISUAL ASSESSMENT OF FIT OF EQUATIONS TO PREDICT TIME-TO-EVENT OUTCOMES

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Graphical tests are very useful for assessing the fit of statistical models. In linear regression models, for instance, a plot of predicted means against observed values can reveal systematic over- or under-prediction. Comparatively, we find that salient elements of a general model structure for a new screening test include assessing the risk, establishing the probability of condition, matching each with value hypotheses, and a generic decision tree framework that may be used to study test cost-effectiveness.

PRM58 TURNING THE IMPLAUSIBLE TO THE PLAUSIBLE: TOWARDS A BETTER CONTROL OF OVER THE COUNTER DISPENSING OF ANTIBIOTICS IN EGYPT

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As a developing country, Egypt has long suffered negative outcomes from irrational drug dispensing practices. This affected healthcare economically adversely and increased the burden of diseases. With limited awareness among the public, in Egypt, it becomes imperative to guide the researchers to potential adverse effects of over-the-counter dispensing on antibiotic resistance prevalence. This research aims to define the flaws in antibiotic dispensing in Egypt and its impact on the antibiotic tenders. Specializing on pharmacies and pharmacies in Egypt contribute the total healthcare spending. The Ministry of Health and Population has enforced several laws prohibiting the-counter dispensing of drugs. However, there is limited evidence on the effectiveness of these regulations on inappropriate dispensing. Literature review revealed that only one report that dates back to 1998 addresses the issue. Analysis of 1174 predictions representing products in 22 different districted pharmacies in Alexandria showed that 60% of medications dispensed were without a prescription or a pharmacist recommendation. Among those products, there were 98 different antibiotic products of which 42% were dispensed without a prescription. Over all, Egypt suffers a high percentage of over-the-counter dispensing of drugs with little studies paying attention to this aspect in terms of antibiotic resistance patterns. Despite enforced laws prohibiting over-the-counter dispensing of drugs, further interventions are required. More strict laws must be applied to pharmacists who do not comply with the official regulations of drug dispensing. Regulating campaigns for patients to increase their level of awareness are crucial to reduce wasteful drug spending and ensure approximate containment of newly emerging antibiotic resistance in the near future.