thresholds for reimbursement decisions, we describe a model for ensuring that opportunity cost is appropriately captured in the willingness-to-pay value. We then show how the modified model would impact upon coverage decisions which include an 'end-of-life premium'. **RESULTS:** We identify four broad categories of value premia. We characterise the importance of locating opportunity cost factors (including price and budget impact) outside the value framework. We then describe a structural process for ensuring that the value framework is applied equally to the identified beneficiaries of a technology and the frequently unidentified individuals who will bear the opportunity cost, in order to promote horizontal equity in HTA processes. Finally, we show how the conventional approach to incorporating value premia, such as the 'end-of-life premium', promotes inefficient and inequitable resource allocation decisions. **CONCLUSIONS:** The conventional HTA model does not adequately reflect the social value of health care. However, naïve modifications to the cost-effectiveness threshold lead to both inefficient and inequitable resource allocation decisions. It is important that modified value frameworks are applied equally to the identified beneficiaries of a technology and those individuals who bear the opportunity cost.

CP4
GUIDANCE FOR THE CONDUCT AND REPORTING OF MODELING AND SIMULATION IN THE CONTEXT OF HEALTH TECHNOLOGY ASSESSMENT
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OBJECTIVES: The U.S. Agency for Healthcare Research and Quality (AHRQ) solicited the development of guidance for modeling and simulation studies conducted in the context of health technology assessment. **METHODS:** We updated and expanded existing systematic reviews of recommendations for the conduct and reporting of modeling and simulation studies in healthcare. We also solicited input from a multidisciplinary team of clinical, policy, and decision analysis experts. The Results of the systematic review were then discussed in person with a panel of 28 stakeholders including patient representatives, providers and purchasers of care, payers, policy makers, and principal investigators. Stakeholders commented on existing recommendations and identified gaps, limitations, and areas for elaboration. We subsequently reviewed the websites of 126 health technology assessment organizations that provide guidance on the conduct and reporting of decision and simulation models. We sought additional input from senior researchers with experience in modeling and simulation within AHRQ and its Evidence-based Practice Centers, and from external reviewers. **RESULTS:** We developed principles and good practice recommendations for modeling and simulation studies conducted to enhance and contextualize the findings of systematic reviews. The guidance applies to structural mathematical models and simulation experiments based on such models. The recommendations address model identification, estimation, and evaluation, as well as the use of sensitivity, stability, and uncertainty analyses throughout model development and use. Recommendations are organized by whether they pertain to the model conceptualization and structure, data, consistency, or the interpretation and reporting of Results. We provide the rationale for each recommendation, with supporting evidence or, when adequate evidence was lacking, best judgment. **CONCLUSIONS:** We present systematically developed guidance for modeling and simulation in the context of health technology assessment. We are hopeful that this work will contribute to increased use of modeling and simulation in conjunction with systematic reviews.

RESEARCH ON COST STUDIES METHODS

CS1
US BASED DRUG COST PARAMETER ESTIMATES USING NATIONAL AVERAGE DRUG ACQUISITION COST
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OBJECTIVES: To explain the relevance of and provide guidance for using a new cost metric, the National Average Drug Acquisition Cost (NADAC) for US based economic evaluations. The key feature of NADAC is that a single cost is reported for a unit of all pharmaceutically equivalent drugs. The cost is an average of the per unit cost paid by the current month's national sample of retail pharmacies. **METHODS:** We propose a costing procedure and provide a detailed overview of costing for five diverse drugs and compare estimates to AWP, the current metric used as an estimate for acquisition cost. With data from 2014 and enumerated specific National Drug Codes (NDC) included in each estimate, we used the July cost as the base-case and the range observed over the year as a measure of uncertainty. For AWP we used its value on July 1. To eliminate the impact of obsolete NDCs we only considered the AWPs of NDCs that had an associated NADAC in 2014. The base-case was estimated as the average of AWP across equivalent NDCs and the range was the low and high AWP. **RESULTS:** In one example, 500mg cephalexin had a NADAC of $0.09662 in July. This cost was based on 22 NDCs and was updated 11 times throughout the year. The range was [$0.08877, $0.12138] per unit. By contrast the distribution of AWPs for the same 22 NDCs had an average of $1.35606 and range of [$1.2259, $1.376]. In other drugs the ratio of NADAC and AWP ranged from 7-89%. **CONCLUSIONS:** NADAC has limitations, but appears to provide a better estimate of true drug acquisition cost than AWP. Given the wide discrepancy observed between NADAC and AWP it appears using AWP, even discounted, may introduce bias in economic evaluations.

CS2
ECONOMIC MODELLING IN RANDOMIZED CONTROLLED TRIAL (RCT)-BASED ECONOMIC EVALUATIONS: EMPIRICAL EXAMPLES OF ITS EFFECT ON THE PRECISION OF ECONOMIC AND DECISION OUTCOMES
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OBJECTIVES: In randomized controlled trials, differences in prognostic factors – whether statistically significant or not – contribute to absolute differences in outcomes. Absolute differences are at the heart of economic evaluation. Economic modelling may help increase precision of incremental differences, despite randomization. The objective of the present study was to describe the effect of economic modelling techniques on the magnitude and precision of economic and decision outcomes using a RCT-based economic evaluation. **METHODS:** An economic evaluation was conducted alongside a RCT (n=350) in diagnostic interventional cardiology. Raw unadjusted total costs and QALYs were assembled at the individual level using resource use and EQ5D responses. For economic modelling, outcomes were then conditioned according to the diagnosis and fit with generalized linear models, adjusting for baseline characteristics. Total costs and QALYs were then estimated using marginal prediction with the fitted models. Family and link functions were selected using the Modified Park's and Pregibon Link test, respectively. Uncertainty in GLM coefficients, unit cost parameters and sampling were incorporated using bootstrapping and Monte Carlo methods. **RESULTS:** The magnitude and direction of incremental costs were comparable between the raw vs. modelled results (-£132 vs. -£204). However, precision increased considerably; the 95%CI reduced by 44% ([-£1772 to £817] vs. [-£1437 to £30]). Incremental QALYs also showed comparable magnitudes (0.013 vs -0.005), though the direction reversed, albeit by a non-important magnitude. As well, the 95%CI of incremental QALYs reduced by 83% ([-0.033 to 0.060] vs. [-0.015 to 0.001]). Reduction in joint incremental cost-effect uncertainty was also apparent upon visual inspection of the cost-effectiveness plane. Decision (cost-effectiveness) uncertainty was comparable across the common willingness-to-pay thresholds (~70% at £0-£30,000/QALY). **CONCLUSIONS:** Economic modelling can increase precision in economic outcomes and reduce uncertainty in decision making, supporting the results and decision arising from a raw unadjusted economic evaluation alongside a RCT.

CS3
CURE MODELS: ACCOUNTING FOR CURED PATIENTS IN ECONOMIC EVALUATIONS
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OBJECTIVES: Economic evaluations of competing interventions often estimate mean overall survival (OS) as a measure of intervention effect. New treatments offer some patients the possibility of being "cured" of their disease, in that they become long-term survivors whose risk of death is the same as a disease-free person. Grouping cured and non-cured patients together and reporting one mean value for OS may provide a biased assessment of a therapy that cures a proportion of patients. In this study, we compared standard survival analysis versus an approach that accounts for the fraction of patients cured. **METHODS:** We used clinical trial data from advanced melanoma patients treated with ipilimumab (n=137) versus gp100 (n=136) and applied statistical methodology for mixture cure models. We used logistic regression to model the probability that a patient was cured and a Weibull regression model to estimate the excess mortality for non-cured patients. Both cured and non-cured patients were subject to background mortality not related to cancer; we calculated this using age- and gender-matched mortality data from US Social Security life tables. **RESULTS:** Ignoring a cured proportion, ipilimumab had an estimated mean OS that was 8 months longer than gp100. Cure model analysis showed that the proportion of cured patients drove this difference, with 20% cured on ipilimumab compared to 6% with gp100. The mean OS among non-cured patients was 5 months on ipilimumab versus 4 months on gp100. The mean OS among cured patients was 26 years on both arms. After adjusting for covariates, ipilimumab had an improved cure proportion compared to gp100 (OR=2.01, 95% CI (1.00, 4.06)), but there were no significant differences in survival among non-cured patients (HR=1.05, 95% CI (0.80, 1.38)). **CONCLUSIONS:** This analysis supports using cure modeling in health economic evaluation in advanced melanoma, since it may reduce bias in OS estimates.

CS4
A REVIEW AND UPDATE TO THE GUIDANCE DOCUMENT FOR THE COSTING PROCESS IN THE CANADIAN HEALTH CARE SETTING
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OBJECTIVES: Methodologies and information systems associated with health intervention costs in Canada have evolved since the Guidance Document for the Costing Process was published in 1996. This document was produced to assist researchers undertaking economic studies of health interventions in Canada. To ensure this document is useful to researchers the Canadian Agency for Drugs and Technologies in Health (CADTH) is undertaking a major update of the document. This presentation will provide an overview of the key changes to the document, based on the availability of new information sources and methodologies. **METHODS:** A literature review of Canadian economic evaluations published between 2011 to 2014 was conducted by CADTH to understand how cost information is currently being used by researchers. In addition, CADTH conducted a scan of the various costing and resource use methodologies used in health care in Canada, and undertook discussions with researchers in health costing. Based on the information obtained, required revisions and additions to the Guidance Document were identified. **RESULTS:** The updated Guidance Document consists of eight sections: Pharmaceuticals, Physician Services, Hospital Services, Diagnostic and Investigational Services, Non-Physician Professional Services, Community Based Services, Informal Caregiver Costs, and Other Information. These categories give way to targeted subsections, for which, detailed descriptions of cost components are provided, along with relevant data sources and guidance as to how and when researchers can apply the data. Key additions to this update include: the inclusion of newer methodologies (e.g., CMG+ costing,