

were discussed and validated by the committee members who helped reframe two levels in one of the attributes and delete one attribute. The final seven attributes were: treatment modality, pain reduction, onset of treatment efficacy, duration of efficacy, difficulty in daily living activities, sleep problem, and knowledge about their body and pain.

**Conclusions.** This study is one of the few to comprehensively describe the selection process of attributes and levels for a DCE. This may help ensure transparency and judge the quality of the decision-making process. In the context of a HB-HTA unit, this strengthens the legitimacy to perform a DCE to better inform decision-makers in a patient-centered care approach.

## OP33 Treatment Of Mitral Insufficiency And Multicriteria Decision-Making

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**Introduction.** Controversy regarding the efficacy of transcatheter mitral valve repair with a clip (TMVRc) in reducing the mitral regurgitation is related to the lack of solid scientific evidence. Worldwide, refusal or conditional acceptance for implementation of TMVRc, reflect ongoing uncertainty. We sought to apply a systematic multicriteria framework to ensure a fair and reasonable decision regarding the use of TMVRc in Quebec.

**Methods.** The framework included the following domains: context, quality of evidence concerning safety, efficacy and effectiveness, unmet patient needs, expected volume of patients, and impact on the health system including costs. Each domain within the framework was examined by a review of the literature and through consultations with a scientific advisory committee, a TMVRc clinical expert committee, TMVRc clinical teams, industry representatives and the Institut national d'excellence en santé et en services sociaux (INESSS) clinical excellence committee.

**Results.** The literature review indicated that uncertainty about the efficacy and effectiveness of TMVRc persists, particularly in the real world context, and this view was supported by scientific experts. The TMVRc clinical teams provided insight into the burden of mitral insufficiency on patients and the health system and their belief in the promise of TMVRc. They also highlighted the challenges of patient selection and organizational issues related to the introduction of TMVRc within their institutions. The advisory committee stressed the need for further evaluation prior to wide diffusion.

**Conclusions.** Using a multicriteria framework facilitated a more standardized and transparent approach to our literature review and consultations as well as to the development of the proposed recommendations. This was especially important in the context of an evaluation of a promising new approach to treat mitral valve disease with many important uncertainties. This multicriteria approach will facilitate a more standardized process for deliberation on how new health technologies should be implemented into the Quebec health system.

## OP34 One-Way Sensitivity Analysis For Cost Effectiveness Analysis

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**Introduction.** Although stochastic analysis has become the accepted standard for decision analytic cost effectiveness models, deterministic one-way sensitivity analysis continues to be used to meet the needs of decision makers to understand the impact that changing the value taken by one specific parameter has on the results of the analysis. However, there are a number of problems with this approach.

**Methods.** We review the reasons why deterministic one-way sensitivity analysis will provide decision makers with biased and incomplete information. We then describe a new method - stochastic one-way sensitivity analysis (SOWSA), and apply this to a previously published cost effectiveness analysis, to produce a stochastic tornado diagram and conditional incremental net benefit curve. We then discuss how these outputs should be interpreted and the potential barriers to the implementation of SOWSA.

**Results.** The results illustrate the shortcomings of the current approaches to deterministic one-way sensitivity analysis. For SOWSA, the expected costs and outcomes are captured, along with the sampled value of the parameter and these are linked to the probability that the parameter takes that value - which can be read off the probability distribution for the parameter used in the stochastic analysis. From these results it is possible to gain insights into probability that a parameter will take a value that will change a decision.

**Conclusions.** Although a well-used technique, one-way deterministic sensitivity analysis has a number of shortcomings that may contribute to incorrect conclusions being drawn about the importance of certain parameter values on model results. By providing fuller information on uncertainty in model results, it is hoped that the methods here will lead to more informed decision making. Although, as with all developments in the presentation of analytic results to decision makers, care will be required to ensure that the decision makers understand the information provided to them.

## OP37 Impact On Uncertainty Of Disaggregating Cost Data

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**Introduction.** Economic models contain several parameters ordinarily subject to uncertainty. Unlike most other model parameters, costs can constitute numerous distinct components. For example, a surgical intervention can require a variety of disposable and reusable equipment. A micro-costing output may be disaggregated or presented as a total cost. Uncertainty could be applied to individual cost components or to total cost. We aimed to explore how disaggregation of cost data may impact on uncertainty using a case study.

**Methods.** A set of simulations using hypothetical scenarios were developed with uncertainty set at  $\pm 20$  percent. The simulations investigated the impact of number of cost components, balance between components, and correlation between them. A cost-utility model from an assessment of robot-assisted radical prostatectomy was analyzed; procedure cost was divided into 32 individual cost components or treated as a total cost.

**Results.** Based on five equal cost components, uncertainty reduces from  $\pm 20$  percent for correlated variables to  $\pm 9$  percent for uncorrelated variables. With increasing numbers of uncorrelated cost components, the uncertainty in the total cost decreases markedly. The uncertainty around total robot-assisted surgery procedure equipment costs was  $\pm 19.7$  percent when components were correlated and  $\pm 9.4$  percent when uncorrelated. The impact on uncertainty in the incremental cost effectiveness ratio (ICER) was negligible but the ranking of parameters in the univariate sensitivity analysis changed.

**Conclusions.** Analyzing uncertainty by aggregated or disaggregated costs can have implications for presenting uncertainty in costs to decision makers. Applying uncertainty to aggregated costs essentially implies that variation in the cost of individual components is perfectly correlated. By disaggregating cost components they are being treated as uncorrelated, which can substantially reduce uncertainty in the total cost. In this case study we found that although the reduction in uncertainty could be clearly seen in the cost parameter, it had a negligible impact on uncertainty in the ICER.

## OP38 Implementing Social Innovations: From Evidence-Based To Theory-Driven

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**Introduction.** For the last decades, health technology assessment has been strongly promoted in order to provide evidence-based rather than eminence-based healthcare. However, when it comes to implementing interventions that are based on processes and behavior rather than products, importing evidence-based interventions is likely to fail because it ignores the strong influence of contextual factors. In a recently started research project, an alternative approach is tested.

**Methods.** The project aims at improving identification and support of children who have parents with a mental illness in an Austrian region (Tyrol). A theory- and stakeholder-driven approach has been designed in order to co-develop, implement and evaluate practice approaches for improving the situation for children. The former addresses the questions whether, how and why suggested practices may work and the later brings together evidence and practice to develop interventions that are feasible and take the regional context and service settings into account.

**Results.** Based on evidence from various sources (literature, international and local stakeholder interviews), theories that describe the key mechanisms of action to influence outcomes for children have been developed. A regional and interdisciplinary group of practitioners and people with lived experience has been established to facilitate the development of the theory of change and practice approaches for the region and local service settings.

The final practice model is then monitored in the respective organizations with implementation support from the research team.

**Conclusions.** Theory-driven and co-designed-based approaches are a feasible alternative to 'off-the-shelf' evidence-based practices for supporting decision makers in implementing complex interventions. However, they require a broad variety of skills within the research team as well as willingness to accept uncertainties of the final outcomes produced, which can also be of risk to funders. The ongoing project will demonstrate whether the developed practices will be implemented successfully and result in benefits for the affected children.

## OP39 Adapting HTA To Suit Emerging Needs - An Australian Experience

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**Introduction.** Australia has a well-developed HTA system for approving, funding and disinvesting in medical services, but how does it cope when it assesses new or existing services when health system frameworks, policy and legislation do not keep pace? This presentation will present a number of case studies where HTA methods have adapted to suit emerging health needs of the Australian community.

**Methods.** Australia's HTA system has been adapted over recent years to allow it to perform HTA on novel services that do not fit into its standard HTA pathway to public funding. There has also been an increasing number of assessments where HTA has been unusually sponsored by the funder to assess priority health care needs.

**Results.** More Medicare funding for addiction and sexual health consultation services are an example of a novel HTA which led to more public funding for these services. Limited evidence for these services was available and there was difficulty in demonstrating that increased public funding would lead to better outcomes for patients. A range of techniques, such as examining real world data and stakeholder views were partnered with HTA to assess these services. Currently, HTA is being utilised to assess a novel medical treatment known as the anti-CD19 chimeric antigen receptor T cell (CAR-T) therapeutic process. This is a complex, non-standard HTA which encompasses aspects of the Australian hospital funding system, Medicare and the Pharmaceutical Benefits Scheme and requires an adapted HTA process to assess evidence across a range of funder systems.

**Conclusions.** Australia's well established HTA system has adapted to become more agile to suit emerging health care needs for a range of interest groups, the government, sponsors and consumers. Consultation with stakeholders and the community have assisted in developing and refining these new processes.

## OP40 Criminal Justice Costs And Benefits Of Mental Health Interventions

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