Creation of a Novel Canadian Policy Model for Bladder Cancer

Conclusion: The CPM is a novel decision modelling platform reflecting the trajectory of bladder cancer care. We are currently finalizing and validating disease modules after completing the prospective utility study and literature reviews.

Once complete, this model will serve as a Canadian-based reference for decision modelling agencies and policy makers.

Introduction

Many promising, yet expensive, therapies have recently been approved in the diagnosis and treatment of bladder cancer (BCa) patients. Our goal is to create a unified single-platform Canadian Policy Model (CPM) that can evaluate the cost-effectiveness of new and emerging therapies.

Methods

The CPM is a patient-level state-transition model developed in R

Three modules represent the natural history of BCa: non-muscle invasive, muscle invasive, and metastatic disease

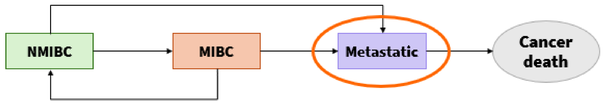
- Simulated patients move through component health states within these modules including diagnosis, localized treatment, surgical, radiation, and systemic treatment, surveillance, and best supportive care

<u>Model Inputs</u>

- Transition probabilities: Unique input sets to represent clinical trial/meta-analysis data (literature review) as well as real-world administrative data
- Utilities: Validated questionnaires at three Canadian tertiary-care centres
- Costs: Real-world administrative data and literature review

Results

- After identifying 17 health states, model structure and transitions were refined through iterative review
- Model inputs were obtained for utilities (prospective evaluation of 430 BCa patients from three Canadian centres), costs (Ontario ICES administrative data algorithms), and transition probabilities (literature review and administrative data)
- In addition to face and clinical validity, the model was externally validated in a sequential fashion starting with systemic treatment in metastatic disease (bottom-up approach) against existing models
- The CPM has been successively presented and revised based on feedback from bi-annual iKT and stakeholder meetings with patient advocates, decision modellers, health economists, and members of provincial and national health agencies



Metastatic module

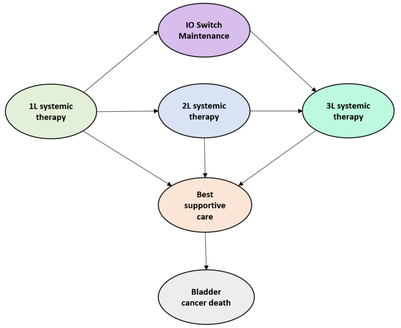


Figure: Modular Approach (e.g. Metastatic)

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