

# Priority Setting Methods in Cancer: Bridging the Gap between Research and Policy, and Developing a Rational Model for Resource Allocation Decisions (Year 2)

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CAHSR 2009, Calgary, AB

# OVERVIEW

- Background
- Objective
- Methods
- Year 1 In review
- Year 2 Updates
- Challenges, Lessons Learned, Next Steps



# BACKGROUND

- **BC Cancer Agency:**
  - provides population-based cancer control for BC
  - mandate covers prevention and screening, diagnosis, treatment and rehabilitation
  - culture of evidence-based medicine
- **Cancer control & care in BC faces many challenges:**
  - the rising costs of innovation and technology
  - allocating resources across the spectrum of interventions
  - growth in all cancer control programs and the need for new programs with no defined funding
  - rising community expectations and demand

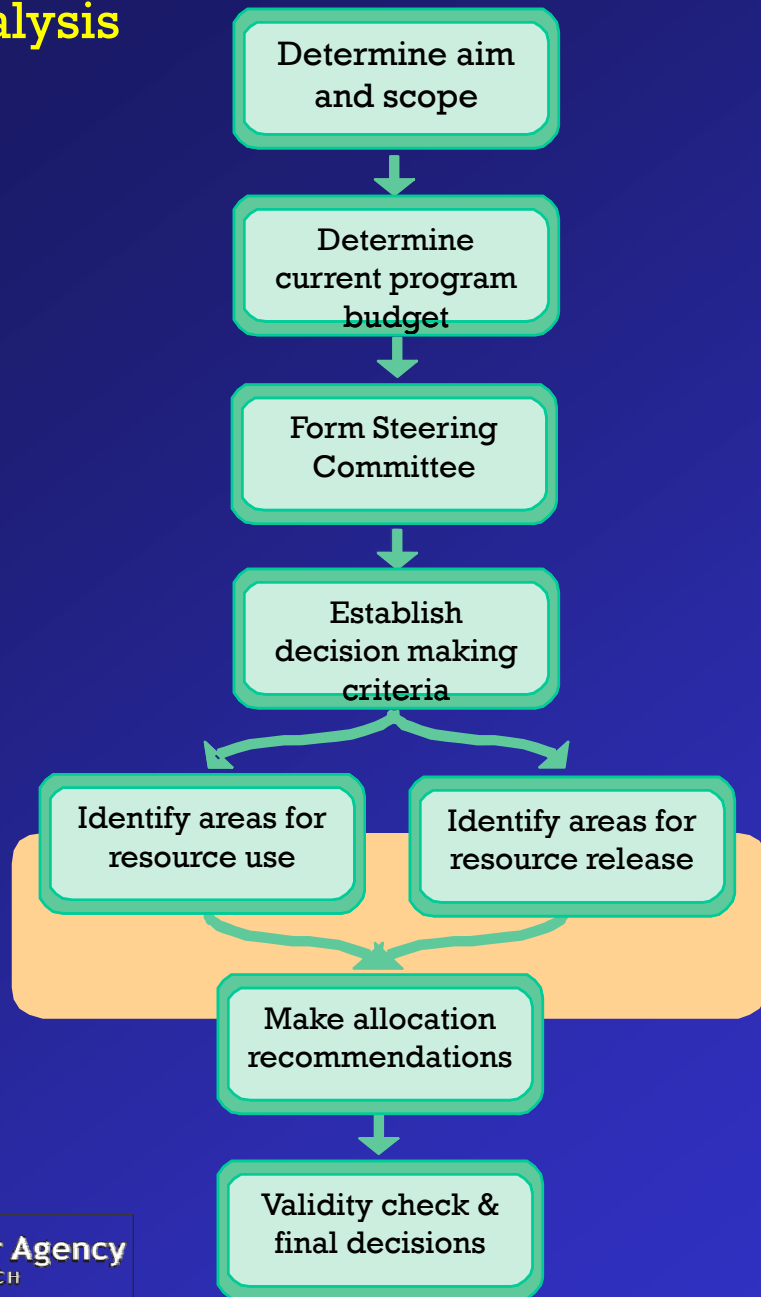


# OBJECTIVE

- The aim of the study is to develop and pilot novel evidence-based methods for priority setting within the context of cancer control and care in British Columbia
- The objectives are to
  - develop and pilot innovations in priority setting methods;
  - evaluate the effectiveness of priority setting decisions using utilization, mortality ,and quality of life data;
  - facilitate skill-building among decision-makers.

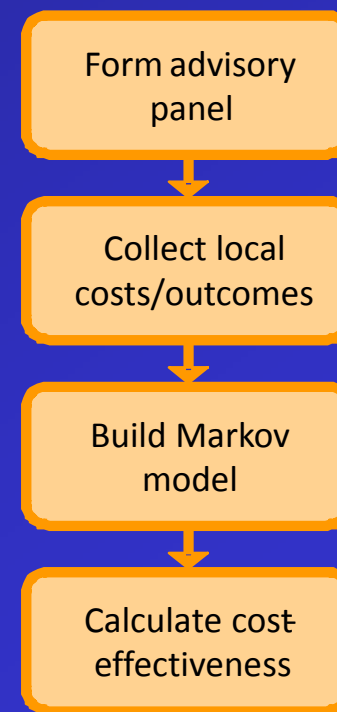


# Program Budgeting and Marginal Analysis



## Evidence-Based Marginal Analysis

For each area identified:



# YEAR ONE REVIEW

## STEERING COMMITTEE

- Established and refined decision criteria
- Identified three areas for potential resource reallocation
- Reviewed results of cost-effectiveness analyses
- Made recommendations for resource reallocation

## PROGRAM AREAS

- 1. Adjuvant Trastuzumab: saves \$1.2M/year; reinvested in renal cancer drugs
- 2. Screening Mammography: annual (vs biennial) screening for women with dense breasts not cost-effective
- 3. PET/CT: for non-small cell lung cancer staging cost-effective; not cost-effective for diagnostic purposes

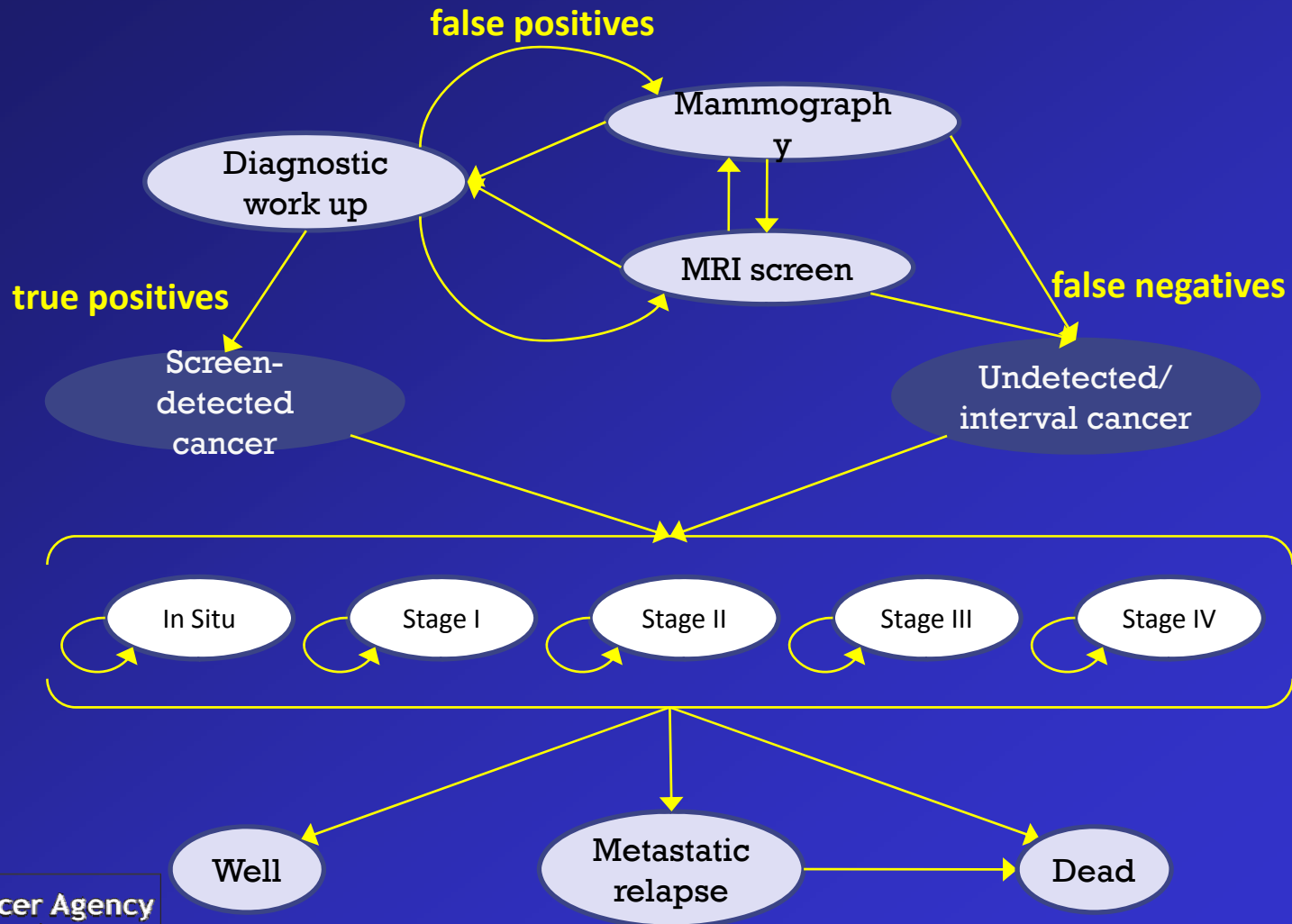


# YEAR TWO PROJECTS: BREAST MRI SCREENING

- Objective:
  - To measure the cost effectiveness of MRI and mammography for breast cancer screening in BRCA1/2 mutation carriers
- Current practice:
  - 6 mo. alternating MRI and mammography for confirmed BRCA1/2 carriers (& family)
    - High-risk screening clinic run by BCCA Hereditary Cancer Program
  - Annual mammography for others at high hereditary risk
- Rationale:
  - MRI is more sensitive than mammography (75% vs. 32%), but less specific (96.1% vs. 98.5%) and more expensive



# YEAR TWO PROJECTS: BREAST MRI SCREENING



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## Data Sources for Model:

Model input	Source
Cancer Incidence	Literature (meta-analysis)
Screening Sens. & Spec.	Literature (meta-analysis)
Cancer Survival	BCCA Surveillance and Outcomes data
Treatment Procedures	BCCA records for BRCA1/2 population
Treatment Costs	BCCA Pharmacy, Radiation Therapy and Administration; BC Medical Services Commission
Utilities	Literature

## Project Status:

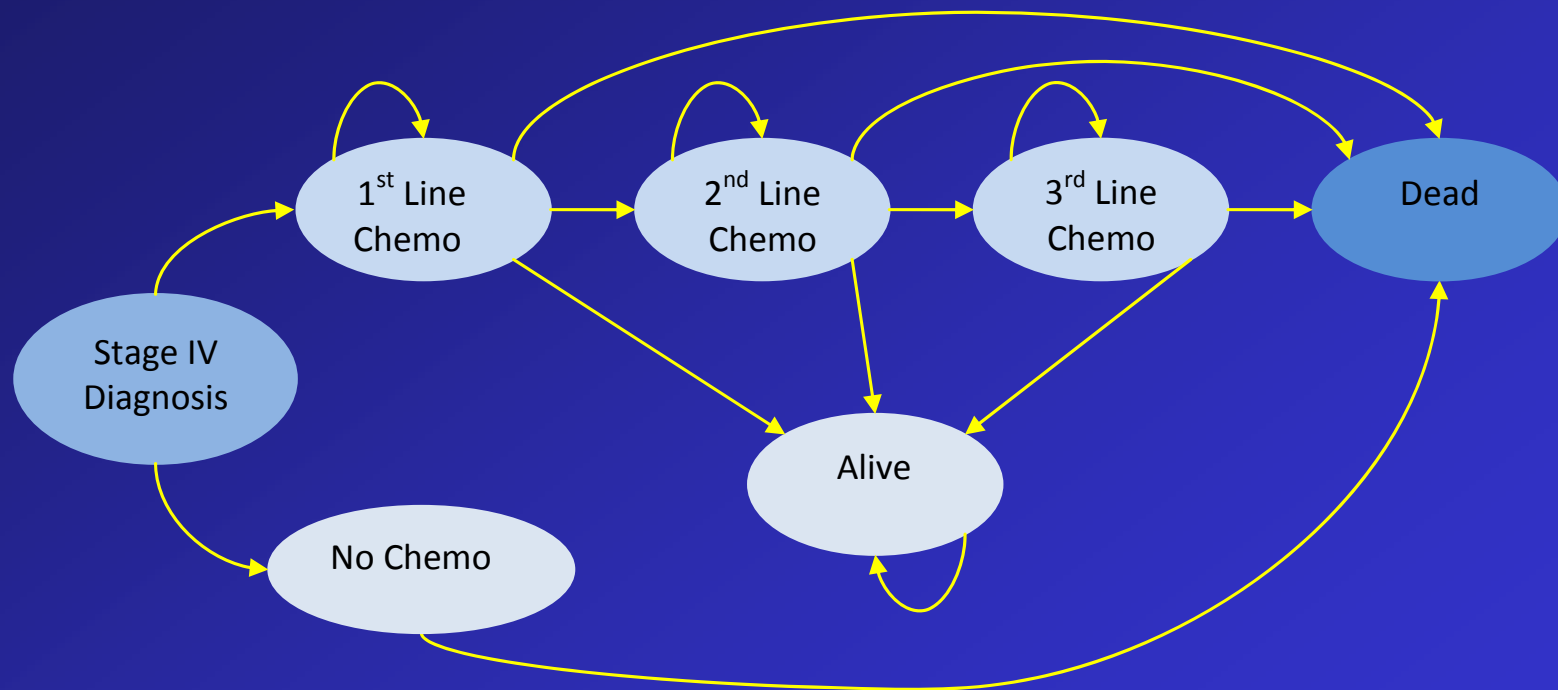
- Costing is ongoing for diagnostic procedures and chemotherapy
- Key gap in literature is stage distribution for MRI- vs. mammogram-detected cancers

# YEAR TWO PROJECTS: PRE- VS. POST-BEVACIZUMAB

- Objective:
  - To measure the clinical and cost effectiveness of Bevacizumab (Avastin) when it is administered with chemotherapy for the treatment of metastatic colorectal cancer in British Columbia
- Rationale:
  - To evaluate the BCCA's decision to include this medicine in its systemic therapy program



# YEAR TWO PROJECTS: PRE- VS. POST-BEVACIZUMAB



# YEAR TWO PROJECTS: PRE- VS. POST-BEVACIZUMAB

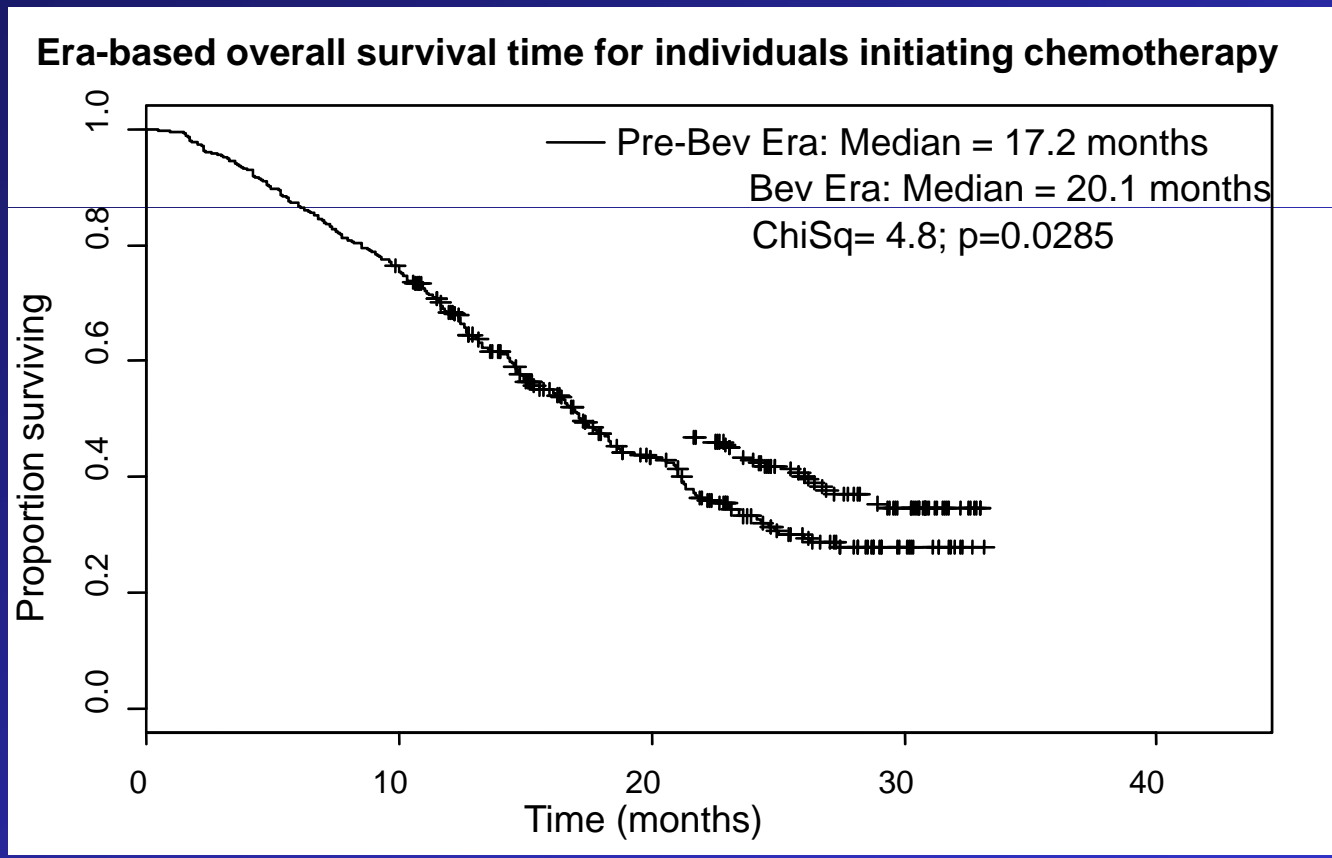
## Data Sources for Model:

Model Input	Source
Disease Progression	BCCA patient records
Cancer Survival	BCCA patient records
Treatment and procedures	BCCA patient records, pharmacy, radiation therapy
Costs: chemotherapy and radiotherapy	BCCA pharmacy, radiation therapy
Costs: diagnosis, staging, in-patient etc.	Statistics Canada, Ontario Case Costing Initiative

## Model Descriptors:

- » Era-based Markov Approach, 1-month cycle length, 28-year time horizon, 5% discount rate
- » Clinical/costing data from the BCCA supplemented by literature
- » Primary outcome: bev-era versus pre-bev era incremental cost-effectiveness ratio, with associated probabilistic and one-way sensitivity analyses

# YEAR TWO PROJECTS: PRE- VS. POST-BEVACIZUMAB



- \$ 62,500 / Quality Adjusted Life Year Gained from the pre-bev to bev era

# CHALLENGES, LESSONS, NEXT STEPS

- **Data**
  - Do they exist? Who has them? Where are they?
- **Workload**
  - Model building requires expertise and significant time investment
- **Inertia of resources**
  - difficult to move resources between budgetary silos
- **Sustaining engagement of senior management**
  - project is bottom-up driven but requires top-down investment



# CHALLENGES, LESSONS, NEXT STEPS

- EBMA is a transparent and systematic process
  - includes multi-disciplinary stakeholders in decision-making
  - driven by a variety of evidence
  - well received by decision-makers at the BCCA
- Decision-makers and clinicians were engaged in model development and felt resulting cost-effectiveness evidence was of great value
- Ability to justify decisions to public and government



BC Cancer Agency  
CARE & RESEARCH

• Has potential to improve patient outcomes by  
(re)allocating resources to more effective

# CHALLENGES, LESSONS, NEXT STEPS

- Qualitative interviews with decision-makers
- Multi-attribute utility vs. deliberative models of multi-criteria decision-making
- Suite of cancer control decision analysis models



# ACKNOWLEDGEMENTS

- **Co-authors**
  - Dr. Stuart Peacock, Reka Pataky, Elena Papadakis
- **Decision-makers and content experts**
  - EBMA Steering Committee
  - EMBA Screening Mammography, Trastuzumab, PET, MRI, and Bevacizumab Advisory Panels
- **Funding agencies**
  - Canadian Institutes of Health Research
  - Michael Smith Foundation for Health Research

