Using the Cancer Risk Management Model to Predict the Long-Term Impact of Colorectal Cancer Screening: A Study Protocol

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OBJECTIVES

- Use model simulation to:
  - Create ‘what if scenarios’ to explore the impact of FOBT and FIT
  - Describe the learning process as a new user

BACKGROUND

- Ontario (ON) has amongst the highest rates of colorectal cancer (CRC) incidence and mortality in the world.  
- Increasing age is the largest risk factor for CRC screening:
  - FOBT: Fecal Occult Blood Test
  - FIT: Fecal Immunochemical Test

CRC screening tests:
- FOBT: Fecal Occult Blood Test
- FIT: Fecal Immunochemical Test

Which test is best for decreasing ONs CRC problem? FOBT, FIT, or Neither

METHODS

- Obtain Permission to use the Canadian Cancer Risk Management Model (CRMM-CRC 2.1)
- User Learning Principles: Read User Guide, Learning by Doing
- Design: Monte Carlo Micro Model Simulation Applied Case Study
- CRMM-CRC 2.1 Input Parameters: Risk Factors, Screening, Treatment, as well as CRC Incidence and Progression
- Create Scenarios
  - Base Case Scenario
  - Modify Parameters
- Outcome: Projections
  - Clinical
  - Cost

Figure 1. Process: From Start to Estimates

Figure 2. Concept: CRMM-CRC 2.1 Uses Monte Carlo Micro Model Simulation

CRMM-CRC 2.1 Input Parameters: Risk Factors, Screening, Treatment, as well as CRC Incidence and Progression

How the CRMM-CRC 2.1 Uses Monte Carlo Micro Model Simulation

- Dynamic Web-Based Micro Simulation Platform
- Can Project Health and Economic Impact of Various Interventions
- Simulates Individual Lives from Birth to Death
- Uses Probability Distributions to Simulate Various Transitions

Figure 3. Concept: Illustration of User Modified Model Parameters

Figure 4. Useful Tools for Learning to use the CRMM-CRC 2.1

CONCLUSION: KEY MESSAGES

- The FIT is estimated to be best
- The CRMM-CRC 2.1 is a useful model for exploring parameters and projections

REFERENCES


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