

Assignment 2

Due: Wednesday, February 8th, by start of class

The purpose of this assignment is to identify and begin to sketch a model-based decision analysis project. The project should address a realistic health problem (broadly defined, including public health, medical, environmental, etc), and propose specific interventions to be evaluated using a Markov model.

The entire assignment **should not exceed two pages** (reasonable font and margins, please!) and must include the information indicated below. Discussion of projects among peers is encouraged, but each student must propose an independent project.

Motivation (no more than 100 words)

Provide the background and context for the health problem you are addressing: Why is this problem important? Why should this study be undertaken?

Statement of the question (single statement)

State your specific study objective.

Population (single statement)

Define your target population, indicating cohort start age, gender, other important characteristics.

Health states (bubble diagram)

Show the relevant health states (include any “history” states) that represent your health problem, including the arrows indicating allowable transitions.

Cycle length (one or two sentences)

Indicate the cycle length, and provide a simple justification for your chosen cycle length.

Interventions (list)

Indicate all competing interventions you wish to evaluate, including a baseline (e.g., current or no) intervention if relevant. Provide enough detail to convey what these interventions are.

Main model parameters (list)

Name all of the main parameters needed in your model, including transition probabilities for natural history of disease, important properties of interventions (e.g., test sensitivity, test specificity, efficacy), quality of life indicators, other population-level attributes (e.g., coverage or uptake, compliance or adherence, loss-to-follow-up). Clearly define “efficacy” and indicate which probabilities would vary by intervention(s). Note: you do not have to provide any estimates or sources for these parameters; this is simply a wish-list to have you think about what types of data your study would require.

Outcomes (list)

Indicate what metrics you would like to project using the model to compare your interventions. You may indicate intermediate outcomes and/or long-term outcomes. Over what time period would you evaluate these outcomes?