Descriptive Event Simulation (DES) Model

1) The DES model structure has advantages over Markov models:
   a) In DES models, we assume that no transition can occur before the next time step.
   b) DES models allow for the use of random variables to simulate the variability of the data.
   c) DES models can handle complex patient flow by using a discrete-event approach.
   d) DES models can model the interactions between patients and the healthcare system.

2) These health state transitions are different than those of the MM. DES model outcome was compared to MM outcome for the same scenarios.

3) Similar cost estimates are derived from MM and DES. Both models were shown to be effective in predicting long-term outcomes.

4) The capacity of DES for additional data capture beyond the information required for decision-making provides an opportunity for future research.

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6) Due to the limitations of the Markov model, decision-makers may lack confidence in the long-term outcomes.

7) DES can better handle the problem of modeling immediate clinical effects of small, but important differences in clinical data.

References


