

Characteristic	FHCC	Erasmus	UMICH	UCL
Model type	State-transition Microsimulation	State-transition Microsimulation	State-transition Analytic	State-transition Microsimulation
Natural history				
Main states	Healthy, preclinical, clinical	Healthy, preclinical, clinical	Healthy, preclinical, clinical	Healthy, preclinical, clinical
PSA	Mixed effects model • PSA velocity increases at onset	Mixed effects model • PSA velocity increases at onset	PSA not currently modeled	PSA not currently modeled
Onset	Risk increases with age Min age of onset 35	Risk increases with age Min age of onset 40	Risk increases with age Min age of onset 35	Risk increases with age Min age of onset 40
Stages	Localized, metastatic Progression risk ↑ with PSA	Localized, regional, distant Progression not linked to PSA	Localized, metastatic	Stage not currently modeled Grade not currently modeled
Grades	Low, moderate, high Grade ↑ with age at onset No grade progression	Low, moderate, high Grade progression	Low, moderate, high Grade progression	
Calibration				
Target	US incidence 1975-2000 by age, year, stage, grade	ERSPC-Rotterdam and then US incidence 1980-2000 by age, stage, year, grade	US incidence 1975-2000 by age, year, stage, grade	PLCO trial incidence on screen/control arms
Method	Simulated Poisson maximum likelihood	Nelder-Mead least squares optimization	Maximum likelihood	Hidden Markov model maximum likelihood
Survival				
Baseline	SEER diagnoses 1983-1986	SEER diagnoses 1983-1986	SEER diagnoses 1983-1986	Not currently modeled
Intermediate states post diagnosis	Not currently modeled	Not currently modeled	Metastasis	
Screening benefit				
Mechanism	Stage shift, cure rate, hazard ratio	Stage shift, cure rate, hazard ratio	Stage shift, cure rate, hazard ratio	Not currently modeled
When applied	Post lead time	Post lead time	Post lead time	
Treatment benefit				
Primary treatment	Hazard ratio based on clinical trials/comparative effectiveness studies	Hazard ratio based on clinical trials/comparative effectiveness studies	Hazard ratio based on clinical trials/comparative effectiveness studies	Not currently modeled
Salvage treatment	No	No	No	