

Appendix E8. PersonEditor Smoking examples

Introduction:

The smoking microsimulation results show that for the SCS intervention, i) in most countries hypertension prevalence cases avoided is negative and ii) and in some countries, CHD prevalence gain/avoided is not significant.

Deterministic method

A deterministic method was used to understand the mentioned phenomena. The model can run a person editor using a deterministic method to calculate an individual's risk of getting a disease based on their age, sex, current disease state, medical history and risk factor level (Appendix B4). For stochastic transitions (microsimulation) this probability is compared to an application-generated random number to determine if the transition takes place. In the deterministic method this probability is included in the relevant life-disease table that both computes and lists the probabilities of being alive with no disease, within possible exclusive disease states and dead.

Input of the deterministic method:

A smoker (man aged 20 years old) was compared to a non-smoker (man aged 20 years old) to investigate the SCS intervention.

Outputs of the deterministic method:

The probability of getting the smoking related diseases versus age has been processed for all countries. Two countries have been chosen to represent the 8 countries of interest: Netherlands and Bulgaria.

Results

Figure 1 and Figure 2 are examples of the types of results obtained for Bulgaria where hypertension prevalence cases avoided are negative and for the Netherlands where CHD prevalence avoided is not significant.

These figures show that the intervention prevents an individual from dying from a disease (for example CHD) and as a result live longer, retaining the probability of developing another disease such as hypertension.

Conclusion

It is important to model a batch of disease together to have a full picture of the effect of the SCS intervention.

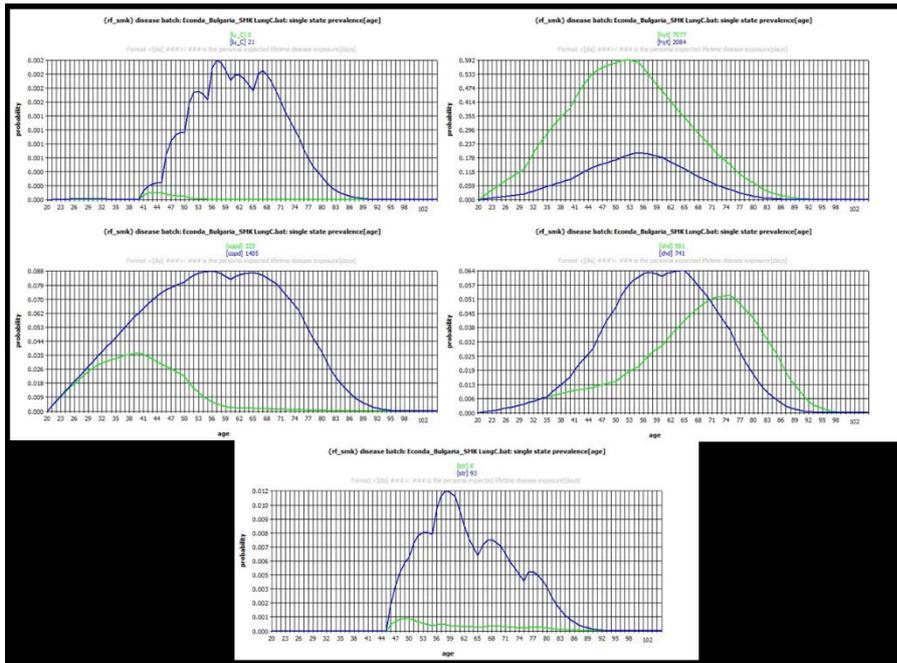


Figure 1 : Probability of getting the 5 smoking related diseases versus age in Bulgaria.

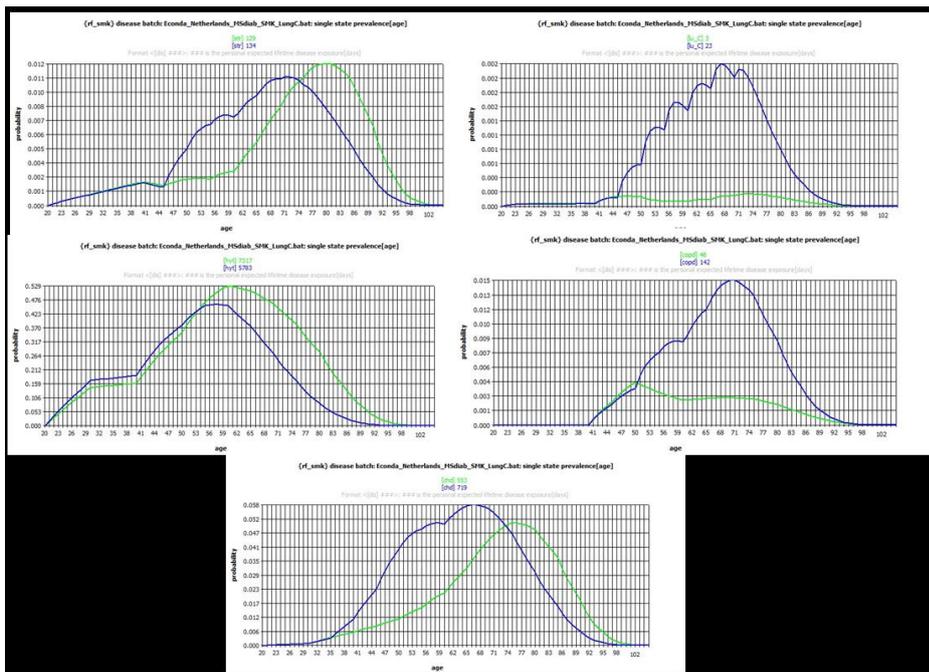


Figure 2 : Probability of getting the 5 smoking related diseases versus age in the Netherlands