

# Survival Analysis - Sick-Sicker model

The DARTH workgroup

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Please cite our publications when using this code:

- Jalal H, Pechlivanoglou P, Krijkamp E, Alarid-Escudero F, Enns E, Hunink MG. An Overview of R in Health Decision Sciences. *Med Decis Making*. 2017; 37(3): 735-746. <https://journals.sagepub.com/doi/abs/10.1177/0272989X16686559>
- Krijkamp EM, Alarid-Escudero F, Enns EA, Jalal HJ, Hunink MGM, Pechlivanoglou P. Microsimulation modeling for health decision sciences using R: A tutorial. *Med Decis Making*. 2018;38(3):400–22. <https://journals.sagepub.com/doi/abs/10.1177/0272989X18754513>
- Krijkamp EM, Alarid-Escudero F, Enns E, Pechlivanoglou P, Hunink MM, Jalal H. A Multidimensional Array Representation of State-Transition Model Dynamics. *BioRxiv* 670612 2019.<https://www.biorxiv.org/content/10.1101/670612v1>

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Change `eval` to `TRUE` if you want to knit this document.

```
rm(list = ls())      # clear memory (removes all the variables from the workspace)
```

## 01 Load packages

```
if (!require('pacman')) install.packages('pacman'); library(pacman) # use this package to conveniently  
# load (install if required) packages from CRAN  
p_load("here", "dplyr", "devtools", "matrixStats", "scales", "ggplot2", "grid", "mgcv", "gridExtra", "g  
      "reshape2", "knitr", "dampack")  
# install_github("DARTH-git/darthtools", force = TRUE) Uncomment if there is a newer version  
p_load_gh("DARTH-git/darthtools")
```

## 02 Load functions

```
source(here("functions", "VOI_Functions.R"))  
source(here("functions", "GA_functions.R"))
```

## 03 Input model parameters

```
# your turn
```

## 04 Incremental NMB (INMB)

```
# your turn
```

## 05 Loss Matrix

```
# your turn
```

## 06 EVPI

```
# your turn
```

## 07 EVPPI

*# your turn*

Construct Spline metamodel.

*# your turn*

## 08 EVSI

*# your turn*