R-HTA-Workshop Model Inputs Tables

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1 Introduction

The following sections present tables from the Chemotherapy model introduced in Value of Information for Healthcare Decision-Making book (Heath et al., 2024), illustrating the probability distributions for model inputs. Each table is placed on its own page to enhance clarity and focus. Detailed descriptions accompany each table to guide the reader through the data presented.

2 Table 1: Model Input Distributions from Literature

Table 1: The probability distributions for the model inputs for the Chemotherapy model. This table reports the definition, the distribution family, and the published estimate and standard error. These are transformed into parameters of the distributions in the chemotherapy model's definition in R code.

Parameter	Definition	Distribution	Estimate	Standard Error
$\log(\rho)$	Log odds ratio of side effects	Normal	log(0.54)	0.3
r	Rate of death for individuals who have recovered or not experienced side effects	Gamma	0.0475	0.0316
λ_1	Probability of recovery in a given week for someone treated at home who does not transition to hospital care	Beta	0.21	0.03
λ_2	Probability of recovery in a given week for someone treated in hospital who does not die	Beta	0.03	0.0065
q	Quality of life for recovered patients	Beta	0.98	0.0283
q_{HC}	Quality of life for home care patients	Beta	0.7	0.141
q_H	Quality of life for hospitalised patients	Beta	0.03	0.173
c_{death}	One-off cost of death	Log-normal	1710	27.57
c_{HC}	Yearly cost of treatment at home	Log-normal	830	12.25
c_H	Yearly cost of treatment in hospital	Log-normal	2400	43.36

3 Table 2: Primary Data-Informed Probability Distributions

Table 2: The prior specification and data used to determine the probability distributions for the model inputs informed by primary data sources for the Chemotherapy model. These distributions are derived as the Beta posteriors under the given Beta priors and data.

Parameter	Definition	Prior Distribution	Prior Parameters	Data
π_0	Probability of side effects under standard care	Beta	(1, 1)	N: 111; Side Effects: 52
Γ_1	1-year probability of hospitalisation, given the patient had side effects	Beta	(1, 1)	Side Effects: 52; Hospitalisations: 43
Γ_2	1-year probability of death	Beta	(1, 1)	Hospitalisations: 43; Death: 8

4 Reference

Heath, A., Kunst, N., Jackson, C. (2024). Value of Information for Healthcare Decision Making. CRC Press. Chapter 2: "A Case Study: A Novel Chemotherapy Treatment".