

Table A2.1. Values and sources of all parameters

Parameter type	Parameters	Estimate	Source and method
Population parameters	Prevalence on admission (proportion colonised on admission)	0.05 Sensitivity analyses: 0.02, 0.10	[2-7]: representative high medium and low values taken from range found in literature
	Relative prevalence on admission in high risk group	2.4 × prevalence on admission	[8-9]: mean of prevalence in high risk group/ overall prevalence
	Proportion in high risk group	0.18 Sensitivity analysis: 0.36	[8-9]: mean of studies and mean × 2 for sensitivity analysis
	Ward size	10 beds Sensitivity analyses: 5, 20	Data from Intensive Care National Audit and Research Centre (ICNARC): mean and range (chosen between min and lower quartile, upper quartile and max)
Transmission parameters	Daily probability of colonisation	Normal (0.0037, 0.00043)	[10]: analysis of individual level data
	Daily probability of infection	Normal (0.0006, 0.00023)	[10]: analysis of individual level data
	Probability of progression from colonisation to infection	Normal (0.047, 0.0094)	[10]: analysis of individual level data
	Infectivity of a colonised or infected individual	1	Assumption (other variables estimated according to this)
Screening parameters	Conventional Culture (MS-Oxacillin):		
	Sensitivity (%)	Normal (68.15, 19.39)	[11-13]: mean and SD (truncated at 100% if values >100% drawn)
	Specificity (%)	Normal (88.23, 6.33)	
	Turn-around Time (days)	4	[14, 15] mean, adjusted using adjustment factor from [16]
	Chromogenic Agar 48 hour (MRSA-ID):		
	Sensitivity (%)	Normal (82.55, 4.27)	[17-21]: mean and SD (truncated at 100% if values >100% drawn)
	Specificity (%)	Normal (83.05, 17.72)	
	Turn-around Time (days)	3	[14, 17, 19] mean, adjusted using adjustment factor from [16]
	Chromogenic Agar early result – 24 hour (MRSA-ID):		
	Sensitivity (%)	Normal (62.17, 12.49)	[12, 17, 19, 20, 21] mean and SD
	Specificity (%)	Normal (97.13, 4.17)	
	Turn-around Time (days)	2	Using adjustment from [16]
	Polymerase Chain Reaction (IDI-MRSA):		
	Sensitivity (%)	Normal (88.40, 5.10)	[15, 18, 21-28]: mean and SD
	Specificity (%)	Normal (83.8, 4.74)	
Turn-around Time (days)	1	[15, 16, 18, 23, 25] mean	
Isolation parameters	Isolation effect (contact precautions) - reduction in transmissibility of patient undergoing isolation precautions	Normal (0.365, 0.622)	[29]
	Isolation Capacity	Ward size	Assumed contact precautions

			could be applied to all patients
Decolonisation parameters	Proportion of decolonised patients who are successfully decolonised (i.e. revert to an MRSA negative state)	53% Sensitivity analysis: 0% and 100%	[30] Assumption
	Decolonisation effect on susceptibility to colonisation (percentage reduction)		
	Bodywash (chlorhexidine)	Normal (65%, 7%)	Analysis of individual data
	Topical therapy (mupirocin)	0% Sensitivity analysis: 33%	Assumption (effect through reduction of progression probability only) Expert opinion
	Decolonisation effect on susceptibility to infection (percentage reduction)		
	Bodywash (chlorhexidine)	Normal (66%, 21%)	Analysis of individual data
	Topical therapy (mupirocin)	0% Sensitivity analysis: 10%	Assumption (effect through reduction of progression probability) Expert opinion
	Effect on transmissibility of an infectious patient (percentage reduction)		
	Bodywash (chlorhexidine)	0%	Assumption (effect through susceptibility variables)
	Topical therapy (mupirocin)	0% Sensitivity analysis: 12.5%	Assumption (effect through reduction of progression probability) Expert opinion
	Effect on probability of progression /self-infection (percentage reduction)		
	Bodywash (chlorhexidine)	Normal (31%, 18%)	Analysis of individual data
	Topical therapy (mupirocin)	Normal (33%,12%) Sensitivity analysis: 47%	Cochrane review [31] Expert opinion

Normal distributions are Normal (mean, standard deviation).