

**S5 Table. Summary statistics of the marginal posterior distributions for parameters of model (7) based on the analysis of the Besançon data.**

Parameter	Symbol	Median (95% credibility interval)*			
		ICU A		ICU B	
Background coefficient	$\alpha$	0.011	(0.008, 0.014)	0.008	(0.006, 0.011)
Cross-transmission coefficient	$\beta$	0.027	(0.013, 0.041)	0.036	(0.023, 0.048)
Prior bed occupant coefficient	$p$	0.004	(0, 0.007)	0.003	(0, 0.006)
Sensitivity	$\phi$ (%)	50.6	(48.0, 53.1)	60.5	(58.9, 62.1)
Importation probability	$f$ (%)	5.5	(4.5, 6.6)	7.5	(6.6, 8.4)
Fraction colonized	$p_{\text{col}}$ (%)	22.2	(21.3, 23.1)	23.2	(22.7, 23.6)
<b>Contributions</b>					
Background	$R_{\text{background}}$ (%)	65.1	(48.8, 81.7)	50.4	(35.7, 66.6)
Cross-transmission	$R_{\text{crossT}}$ (%)	31.8	(14.6, 47.2)	46.8	(31.3, 62.1)
Prior bed occupants discharge	$R_{\text{prior}}$ (%)	3.1	(0, 6)	2.6	(0, 5.6)

\*Highest posterior density interval