

No.	Parameter	Name of parameter in model	Distribution type	Minimum	Most likely	Maximum	Sources
Population characteristics (see Chapter 4, Methods of cost-effectiveness analysis)							
1	Cohort start age	startage	N/A		30		Assumption
2	Proportion of cohort male	pmale			0.5		Health Hospital Episode Statistics (see Chapter 4, <i>Methods of cost-effectiveness analysis</i>)
Rate of recurrence (see Chapter 4, Methods of cost-effectiveness analysis)							
3	Annual rate of recurrence of anaphylaxis due to drugs with SSS	dprecurdrugSS	Triangular	0	0.001	0.002	Expert opinion
4	Annual rate of recurrence of anaphylaxis due to food with SSS	dprecurfoodSS		0	0.01	0.02	Expert opinion and based on Ewan and Clark 2001 ³³ [p. 753 text: paragraph heading: 'Severity of follow-up reaction'. No one with a severe initial reaction ($n = 49$) had a further severe reaction]. Ewan and Clark 2005 ³⁴ [table 1, p. 112: Severe follow-up reaction grade 5 $r = 3$ (0.5%), $n = 567$ (100%)]
5	Annual rate of recurrence of anaphylaxis due to food with SC	drecurfood		0.05	0.11	0.16	Expert opinion and based on Mullins 2003 ⁷ (figure 1, p. 1037)
6	Annual rate of recurrence of idiopathic anaphylaxis with SC	drecuridio		0.05	0.28	0.51	Expert opinion and based on Mullins 2003 ⁷ (figure 1, p. 1037)
7	Annual rate of recurrence of anaphylaxis due to drugs with SC	drecurdrug		0.05	0.12	0.19	Expert opinion and based on Mullins 2003 ⁷ (figure 1, p. 1037)
8	Annual rate of recurrence of anaphylaxis due to insect sting with SC	drecurinsect		0.05	0.10	0.15	Expert opinion and based on Gonzalez-Perez 2010 ¹⁵ (pp. 1101–2. Last paragraph, p. 1101: 'Anaphylaxis is associated with high risk of recurrence but is highly unpredictable. Estimated rate: 0.06 to 0.11 episodes per year')
N/A, not applicable.							

No.	Parameter	Name parameter in model	Distribution type	r in categories	n	r	Sources
Trigger probability (see Chapter 4, Methods of cost-effectiveness analysis)							
9	Probability incidence due to idiopathic	didio	Beta		343	103	Gonzalez-Perez 2010 ¹⁵ (table V, p. 1104) = 30%
10	Probability incidence due to insect given not idiopathic	dinsect			240	46	Gonzalez-Perez 2010 ¹⁵ (table V, p. 1104) = 13.4%
11	Probability incidence due to drug given not idiopathic and not insect in child	ddrugchild			87	19	Capps <i>et al.</i> 2010 ³⁶ (table 1, p. 655) = 12.4%
12	Probability incidence due to drug given not idiopathic and not insect in adult	ddrugadult			303	236	Capps <i>et al.</i> 2010 ³⁶ (table 1, p. 655) = 44.1%
Mortality (see Chapter 4, Methods of cost-effectiveness analysis)							
13	Annual probability of dying given anaphylaxis and presence of emergency services and current AI use	ddieanaph	Beta		3517	20	Soar <i>et al.</i> 2008, ¹⁷ HES 2010 ³²
14	Time to die, food	dtimediefood	Dirichlet	r in categories (2.1–4.5, 4.6–9.9, 10–20 and >20 minutes) (0; 0; 9; 50)			Soar <i>et al.</i> 2008 ¹⁷
15	Time to die, drug	dtimediedrug		(0; 2; 4; 7)			Soar <i>et al.</i> 2008 ¹⁷
16	Time to die, insect	dtimedieinsect		(2; 420; 19)			Soar <i>et al.</i> 2008 ¹⁷
17	Ambulance response time, Category A	dtimeA	Dirichlet	r in categories (<8, 8–18 and >18 minutes) (1,442,519; 437,973; 60,160)		N/A	NHS Information Centre 2010 ⁴⁰
18	Ambulance response time, Category B	dtime19B	Beta		2,559,126	2,322,793	NHS Information Centre 2010 ⁴⁰
N/A, not applicable.							

No.	Parameter	Name parameter in model	Distribution type	<i>n</i>	<i>r</i>	Minimum	Most likely	Maximum	Sources
19	Probability of correct use of injector with SC	dpinjector	Beta	116	53				Capps <i>et al.</i> 2010 ³⁶ (<i>n</i> = table 3, p. 655 at any time <i>r</i> = before ambulance arrived)
20	Probability use injector correctly with SC in child	dinjectorchild		15	10				Capps <i>et al.</i> 2010 ³⁶ [<i>n</i> = table 3, p. 655, at any time <i>r</i> = before ambulance arrived (child)]
21	Probability use injector correctly with SC in adult	dinjectoradult		101	43				Capps <i>et al.</i> 2010 ³⁶ [<i>n</i> = table 3, p. 655, <i>r</i> = before ambulance arrived (adult)]
22	Probability use injector correctly with SSS	dpinjectorSS	Triangular			1			Assumption
Idiopathic treatment (see Chapter 4, Methods of cost-effectiveness analysis)									
23	Median time to remission in frequent idiopathic	dmedianfreq	Triangular		2	4	6		Based on data from Krasnick <i>et al.</i> 1996 ¹⁰
24	Median time to remission in infrequent idiopathic	dmedianinfreq			1	1.5	2		Based on data from Krasnick <i>et al.</i> 1996 ¹⁰
25	Proportion of idiopathic that are frequent	dfreqidio	Beta	56	28				Krasnick <i>et al.</i> 1996 ¹⁰
Venom immunotherapy (see Chapter 4, Methods of cost-effectiveness analysis)									
26	Effectiveness of VIT	dpeffectVIT	Triangular		0.75	0.85	0.95		Based on Krishna <i>et al.</i> 2010 ⁴²
27	Dropout of VIT	dropout			0.1	0.2	0.3		Based on Goldberg <i>et al.</i> 2000 ⁴³
28	Uptake of VIT	duptakeVIT			0.4	0.6	0.8		Based on Cox <i>et al.</i> 2011 ²⁵
Utility (see Chapter 4, Methods of cost-effectiveness analysis)									
29	Utility decrement due to at risk	duatrisk	Triangular		0.06	0.08	0.1		Based on Voordouw <i>et al.</i> 2010 ⁴⁵
30	Duration of recurrence	ddurationrecur	Uniform		1	N/A	9		Based on Neuner <i>et al.</i> 2003 ⁴⁶
31	Utility factor with SSS	duSSimprove	Triangular		0	0.25	0.5		Assumption based on expert opinion
32	Utility factor with AI	duAlimprove			0	0.25	0.5		Assumption based on expert opinion
N/A, not applicable.									

No.	Parameter	Name of parameter in model	Distribution type	Mean	Standard error ^a	Minimum	Most likely	Maximum	Sources
Costs (see Chapter 4, Methods of cost-effectiveness analysis)									
33	Mean cost of inpatient care	dcostrecur	Normal	£469.88	£37.585				HES 2010 ³²
34	Mean cost of AI	cinjector	N/A	£28.97	N/A				BNF 61 ¹⁸
35	Costs of two SS sessions (each about £200)	cSS	N/A	£400	N/A				Expert opinion (Commissioner in UK)
36	Duration of VIT (years)	ddurationVIT	Triangular			2	3	4	Based on Diwaker et al. 2008 ⁴⁸
37	Induction phase of VIT (build-up) (weeks) average cost for bee and wasp extract	dbuildupVIT	Triangular			8	10	12	Based on Cox et al. 2011 ²⁵ Expert opinion
38	For VIT maintenance treatment average cost for bee and wasp extract	cVITmaintenance	N/A	£60	N/A				BNF 61 ¹⁸
39	For VIT induction treatment	cVITinitial	N/A	£70	N/A				BNF 61 ¹⁸
40	Number of weeks between VIT maintenance doses	nVITmaintenance	Triangular			4	6	8	Expert opinion and Cox et al. 2011 ²⁵
41	Cost of prednisolone per mg	cpred	N/A	£0.02	N/A				BNF 61 ¹⁸
42	Duration of prednisolone course in months	ddurationpred	Uniform			2	N/A	3	Simons et al. 2010 ²⁷
43	Start dose of prednisolone in mg	dstartdosepred	Uniform			60	N/A	100	Simons et al. 2010, ²⁷ Lieberman et al. 2010 ²⁴
44	Duration of start dose of prednisolone	dstartduration	Uniform			1	N/A	2	Simons et al. 2010, ²⁷ Lieberman et al. 2010 ²⁴

N/A, not applicable.