Corrections to the Novartis economic model

Table 1. Model error corrections

Issue	Correction
In the “Tx QALYs” and “Comp QALYs” worksheet, disutility was being added instead of subtracted. The formula in column F was corrected.	Previous formula: *SUM(D11:E11)/((1+'Set-Up'!$D$17)^(C11/12))* New formula: *(M11-E11)/((1+'Set-Up'!$D$17)^(C11/12))*
In the “Tx Costs” and “Comp Costs” worksheets, the formula in column F (SAE costs) was corrected. Originally, the monthly maintenance cost of an adverse event was dependent on whether the event happened in the next cycle instead of the previous cycle	Previous formula*: IF(Treatment!AJ11=1,'Resource use (2)'!$E$19,0) + IF(Treatment!AK11=1,'Resource use (2)'!$E$20,0) + IF(Treatment!AL11=1,'Resource use (2)'!$E$21,0) + IF(Treatment!AM11=1,'Resource use (2)'!$E$22,0) + IF(Treatment!AN11=1,'Resource use (2)'!$E$23,0) + IF(Treatment!AO11=1,'Resource use (2)'!$E$24,0) + IF(Treatment!W12="yes", 'Resource use (2)'!$D$19,0) + IF(Treatment!Y12="yes", 'Resource use (2)'!$D$20,0) + IF(Treatment!AA12="yes",' Resource use (2)'!$D$21,0) + IF(Treatment!AC12="Yes", 'Resource use (2)'!$D$22,0) + IF(Treatment!AE12="yes", 'Resource use (2)'!$D$23,0) + IF(Treatment!AF12="yes", 'Resource use (2)'!$D$24,0)* New formula*: IF(Treatment!AJ11=1, 'Resource use (2)'!$E$20,0) + IF(Treatment!AK11=1, 'Resource use (2)'!$E$21,0) + IF(Treatment!AL11=1, 'Resource use (2)'!$E$22,0) + IF(Treatment!AM11=1, 'Resource use (2)'!$E$23,0) + IF(Treatment!AN11=1,'Resource use (2)'!$E$24,0) + IF(Treatment!AO11=1,'Resource use (2)'!$E$25,0) + IF(Treatment!W11="yes", 'Resource use (2)'!$D$20,0) + IF(Treatment!Y11="yes", 'Resource use (2)'!$D$21,0) + IF(Treatment!AA11="yes", 'Resource use (2)'!$D$22,0) + IF(Treatment!AC11="Yes", 'Resource use (2)'!$D$23,0) + IF(Treatment!AE11="yes", 'Resource use (2)'!$D$24,0) + IF(Treatment!AG11="yes", 'Resource use (2)'!$D$25,0)*
The patient’s graft in the current cycle becomes functioning if the patient received a re-transplantation in the previous cycle. Formulas were corrected in the “Treatment” and “Comparator” sheets	Previous formulas: *Q12 = IF(J12="Yes", "Died", IF(Q11="No", "No", IF(P12>LIVE!$C$42, "Yes", "No")))* *R12 = IF(J12="Yes","Died",IF(S11="Yes","No",IF(Q12="Yes","No","Yes")))* *AR12 = IF(R12="No",0,1)* *AS12 = AR12+AS11* *AV12 = AS12+AT11*

	New formulas: *Q12 = IF(J12="Yes", "Died", IF(P12>LIVE!$C$42,"Yes","No"))* *Q13 = IF(J13="Yes", "Died", IF(AND(Q12="No", (T12-T11)=0), "No", IF(P13>LIVE!$C$42, "Yes", "No")))* *R12 = IF(J12="Yes","Died",IF(Q12="Yes","No","Yes"))* *AT12 = IF(J12="Yes",0,IF(R12="No",0,1)) (corresponds to AR12 in old model)* *AU = IF(AU11='Clinical (2)'!$H$19,0,AT12+AU11) (corresponds to AS12 in old model)* *AX = IF(R12="No",0,AU12+AV11) (corresponds to AV12 in old model)* *Created new column for calculation of "Transplant number"* *T12 = IF(J12="Yes","Died",IF(AY12="Yes",T11+1,T11))*
Cost of acute rejection is linked to 'Resource use'!$E$29, which is a blank cell	Formula location: "Tx Cost" and "Comp Cost" sheet, column G Previous formula: *IF(Treatment!N11="Yes", 'Resource use'!$D$29,0)* New formula: *IF(Treatment!N11="Yes",LIVE!$C$92,0)*
Price per mg of ciclosporin is calculated by dividing the price by 100*100 instead of 30*100	Formula location: "Resource use" sheet, cell F17 and G17 Previous formulas: *((E17/100/100)*15*LIVE!C28)*365.25/12, ((E17/100/100)*D17*LIVE!C28)*365.25/12* New formulas*: ((E17/30/100)*15*LIVE!C28)*365.25/12, ((E17/30/100)*D17*LIVE!C28)*365.25/12*
Yearly to monthly conversion of annual clinical outcomes to monthly probabilities has been incorrectly implemented	Formula locations: "Clinical" and "Clinical (2)" sheets, cells F13:F16 Previous formulas: *1-EXP(LN(1-((D13)/E13)))* New formulas: *1-EXP(LN(1-D13)/E13)*

Table 2. Updated results of Novartis model (EVL vs MMF)

	Discounted cost		Discounted QALYs		ICER
	Total	**Incremental**	**Total**	**Incremental**	
Original model results (with error)					
EVL	£136,180	–	8.89	–	–
MMF	£76,826	£59,354	7.89	1.00	£59,354
Model results after corrected error					
EVL	£162,014	–	7.60	–	–
MMF	£141,540	£20,473	6.41	1.19	£17,182

Table 3. Updated results of Novartis model (EC-MPS vs MMF)

	Discounted cost		Discounted QALYs		ICER
	Total	**Incremental**	**Total**	**Incremental**	
Original model results (with error)					
EC-MPS	£87,359	–	8.69	–	–
MMF	£76,771	£10,588	7.89	0.80	£13,235
Model results after corrected error					
EC-MPS	£124,388	–	7.46	–	–
MMF	£141,669	–£17,330	6.42	1.04	Dominant