ERG exploratory analysis - Norgine submission

As per NICE request, the ERG have undertaken additional exploratory analysis around the utility values used in the revised economic model.

We have run the model assuming an incremental utility associated with the covert state of 0.168 (Scenario 1) and of 0.076 (Scenario 2). This is the utility gain associated with avoiding a HE event, i.e. avoiding a patient from moving into the overt heath state.

If we assume the base case ICER with the revised utility analysis incorporated (Table 4 - £28,805), it is observable that the impact of varying the incremental utility value associated with the covert state is not very significant (Table 2- £28,915; Table 3- £29,000).

Nonetheless, the £28,805 ICER should be interpreted with caution as there are multiple uncertainties around the utility values incorporated in the revised economic analysis, especially the 0.032 increment associated with rifaximin on the covert state of the model.

In conclusion, changing the abovementioned parameters, doesn't seem to have a great impact on the final ICER. The parameter with the greatest impact on the final ICER remains the incremental utility associated with rifaximin on the covert state of the model (page 20 and 21 of the ERG report for more details on this)

Table 1. Scenarios run by the ERG

Health state		Original utilities	Revised utilities	Source	ERG exploratory analysis (S1)	ERG exploratory analysis (S2)
Covert	Rifaximin	[redacted]	0.600	Calculation: 0.568 + 0.032	0.600	0.600
	Placebo	[redacted]	0.568	?	0.568	0.568
Overt	Rifaximin	[redacted]	0.314	Calculation: 0.600 - 0.286	0.314	0.314
	Placebo	[redacted]	0.282	Calculation: 0.568 - 0.286	0.282	0.282
Difference (Covert minus Overt)	Rifaximin	[redacted]	0.286	Study used in the original submission (SG estimates)	**0.168**	**0.076**
	Placebo	[redacted]	0.286	Study used in the original submission (SG estimates)	**0.168**	**0.076**
Difference (rifaximin minus placebo)	Covert	[redacted]	0.032	Adjusted utility analysis from SF-36 data in RFHE3001	0.032	0.032
	Overt	[redacted]	0.032	Adjusted utility analysis from SF-36 data in RFHE3001	0.032	0.032

Table 2. ICER scenario 1

Cost-effectiveness results per patient over lifetime – S1	Rifaximin (1)	Placebo (2)	Incremental value (1-2)
Total costs £	£28,874	£6,925	£21,949
QALYs	3.856	3.097	0.7591
ICER			**£28,915**

Table 3. ICER scenario 2

Cost-effectiveness results per patient over lifetime – S2	Rifaximin (1)	Placebo (2)	Incremental value (1-2)
Total costs £	£28,874	£6,925	£21,949
QALYs	3.860	3.104	0.7568
ICER			**£29,000**

Table 4. ICER base case revised analysis

Cost-effectiveness results per patient over lifetime – BASE CASE with revised analysis	Rifaximin (1)	Placebo (2)	Incremental value (1-2)
Total costs £	£28,874	£6,925	£21,949
QALYs	3.850	3.088	1.241
ICER			**£28,805**