

## **Further cost-effectiveness analysis of sequential TNF inhibitors for rheumatoid arthritis patients**

Pelham Barton, West Midlands Health Technology Assessment Collaboration (WMHTAC)

This document relates to the use of the TNF inhibitors adalimumab, etanercept and infliximab for the treatment of rheumatoid arthritis. In particular, it relates to the question of whether a second TNF inhibitor should be routinely used for patients who have failed on the first TNF inhibitor. The model used was produced by WMHTAC, and is fully reported in the Health Technology Assessment report by Chen *et al* (2006). For this analysis, some of the input parameters used have been replaced by those sourced from work carried out by and on behalf of the NICE Decision Support Unit (Lunt, 2006 and DSU, 2007). Also, data for rituximab is sourced from the relevant Evidence Review Group report (LRIG, 2006). The new model parameters used, and therefore the results from using those model parameters, do not carry the approval of WMHTAC.

### **Background**

This work was carried out using the Birmingham Rheumatoid Arthritis Model (BRAM), which is an individual sampling model designed to compare a wide range of different pathways for treatment of patients with rheumatoid arthritis (Chen *et al*, 2006). Important features which are relevant for this work are:

1. The model is designed to allow comparison between strategies which have the same initial DMARDs. It does this by generating a population of patients who have failed the initial DMARD sequence within the model. Thus the parameters relevant to “early DMARDs” are used to generate this population. This means that the model is not likely to be sensitive to the values of those parameters.
2. The effect of DMARDs in reducing (improving) HAQ scores is modelled as a stochastic multiplicative effect. It is necessary to use a stochastic model in order to represent the variation in response. The multiplicative model is used because it is the simplest model which reflects the fact that patients with higher (worse) HAQ scores on starting a treatment have greater scope for improvement. For example, consider two patients starting a treatment, A with HAQ score 2.00 before treatment and B with HAQ score 0.50 before treatment. Suppose that on treatment, A improves to HAQ score 1.00. Using a multiplicative model says that B does equally well by improving to 0.25. An additive model would not allow B to do as well as A.
3. Effectiveness of DMARDs is represented by two parameters  $a$  and  $b$ . These are the parameters of a beta distribution from which the HAQ multiplier is sampled on each occasion. The value of  $a+b$  controls the variability of the distribution (the lower this value the greater the variance for a fixed mean), while the ratio  $a/(a+b)$  is the mean. For convenience, the mean effectiveness is shown in the appropriate tables. A mean effectiveness of (for example) 0.4 would imply that patients with a starting HAQ of 1.5 would have a mean improvement in HAQ of  $0.4 \times 1.5 = 0.6$ , leading to a mean HAQ of 0.9.

The strategy sets considered are of the form shown below. See the original assessment report for a fuller description of the strategy sets. Note, however, that, in this case, patients quitting the first TNF inhibitor on grounds of toxicity are excluded from the analysis. As well as the strategy set shown below, similar strategy sets (not shown) were considered with etanercept and infliximab as the first TNF inhibitor.

*Strategy set with adalimumab followed by another TNF inhibitor*

Treatment	Always move to	Moves dependent on toxicity		
		Relevant toxicity	If toxic, move to	Otherwise, move to
MTX		MTX	SSZ	MTX+SSZ
SSZ	Adal			
MTX+SSZ	Adal			
Adal			Exclude	Divergence pt
Option 1	Etan			
Etan	LEF			
Option 2	Infl+MTX			
Infl+MTX	LEF			
Option 3	LEF			
LEF	GST			
GST	AZA			
AZA	CyA			
CyA		CyA or MTX	DPEN	CyA+MTX
CyA+MTX	DPEN			
DPEN	PALL			

In each run of the model, a fixed random number seed was used, and the model was run for at least 10,000 (virtual) patients. Comparisons between each pair of options were found in the form of an incremental cost-effectiveness ratio (ICER) with a quasi confidence interval, reflecting the sampling in running the model, not parameter uncertainty. Fixed stopping rules were used to determine if the quasi confidence interval was sufficiently precise, or if the run-length needed to be increased. The definition of “sufficiently precise” used was as follows. In cases of dominance (NW or SE quadrants), 95% quasi confidence intervals for cost difference and QALY difference each had to avoid zero. In other cases, a quasi confidence interval (L, U) for the ICER had to satisfy the following properties, according to the values of L and U:

U < 5k or L > 200k	U/L < 2.5
U < 10k or L > 100k	U/L < 2.0
U < 20k or L > 50k	U/L < 1.5
U < 30k or L > 30k	U/L < 1.2
L < 30k and U > 30k	U/L < 1.1

Each run of the model gave three pairwise comparisons of options. Two of these (“major comparisons”) compare the possible second TNF inhibitor with a sequence with no second TNF inhibitor. The third (“minor comparison”) compares the two possible second TNF inhibitors with each other. Since an important part of the data did not distinguish between the TNF inhibitors, this comparison is of very limited value and is given only in the appendix for completeness. The model run was stopped

when both major comparisons were sufficiently precise as defined above: no attempt to improve the precision of the minor comparison was made.

Parameters used in the model are as in Chen *et al* (2006), except as described below. General changes are that discount rates of 3.5 percent are now used for both costs and QALYs, in accordance with current NICE methods guides, and that there is an assumption of no HAQ progression on TNF inhibitors.

### **Part 1 What is the cost effectiveness of using a second TNF inhibitor as compared to returning to conventional DMARDs?**

#### ***Data***

Data varied in this analysis relate to the effectiveness of “second” TNF inhibitors and late DMARDs.

For TNF inhibitors, the following options were used:

Option A, as previous report, based on BSRBR data (Lunt, 2006). This uses a common figure for all second TNF inhibitors. The population studied had baseline HAQ mean 2.05 (s.d. 0.6), and improvement 0.2146 (0.4216) which fits to a beta distribution with  $a=0.16$  and  $b=1.34$  (mean effectiveness 0.11)

Options B and C were taken from personal communication with the DSU and NICE about data identified in the searches for studies investigating the sequential use of TNF inhibitors (See final report DSU 2008, citing Bombardieri *et al*, 2007). One figure was used for any combination involving infliximab, while a different figure was used for the second of adalimumab and etanercept.

For adalimumab following infliximab, the data given were baseline HAQ mean 1.91 s.d. 0.63, change 0.51 (0.54). These fit to  $a=0.57$ ,  $b=1.55$  (mean 0.27). These figures were also used for etanercept following infliximab, and for infliximab following either adalimumab or etanercept.

For the adalimumab following etanercept, two sets of figures were given.

Option B had HAQ baseline 1.91 (0.63) change 0.33 (0.54), which fits to  $a=0.19$ ,  $b=0.90$  (mean 0.17).

Option C had HAQ baseline 1.91 (0.63) change 0.46 (0.67), which fits to  $a=0.18$ ,  $b=0.57$  (mean 0.24).

In each case the same figures were also used for etanercept following adalimumab.

Therefore the figures actually used in the three options are as follows, where each entry is of the form  $a, b$  (mean):

Values used in option	A	B	C
Adal following Etan	0.16, 1.34 (0.11)	0.19, 0.90 (0.17)	0.18, 0.57 (0.24)
Adal following Infl	0.16, 1.34 (0.11)	0.57, 1.55 (0.27)	0.57, 1.55 (0.27)
Etan following Adal	0.16, 1.34 (0.11)	0.19, 0.90 (0.17)	0.18, 0.57 (0.24)
Etan following Infl	0.16, 1.34 (0.11)	0.57, 1.55 (0.27)	0.57, 1.55 (0.27)
Infl following Adal	0.16, 1.34 (0.11)	0.57, 1.55 (0.27)	0.57, 1.55 (0.27)
Infl following Etan	0.16, 1.34 (0.11)	0.57, 1.55 (0.27)	0.57, 1.55 (0.27)

For “late” DMARDs (DMARDs used after TNF inhibitors), two options were considered. “Old” values were those as in the assessment reports, as in the following table (extracted from Chen *et al*, 2006):

DMARD	$a$	$b$	Mean
Azathioprine	0.20	0.80	0.20
Cyclosporin	0.13	0.26	0.33
Gold	0.45	0.70	0.39
Leflunomide	0.57	0.65	0.47
Penicillamine	0.20	0.80	0.20
CyA + MTX	0.80	0.45	0.64

“New” values were taken by applying the placebo change in the key abatacept trial (DSU, 2007 citing Genovese, personal communication). These had baseline HAQ 1.82 (0.6) and change 0.11 (0.46). The best fit found was  $a=0.1, b=1.5$  (mean 0.06), which fits to a change of 0.11 with standard deviation 0.29. Allowing  $a$  to drop below 0.1 risked instability in the model. This figure was applied to all late DMARDs.

### Results

Three combinations of values for TNF inhibitors with two combinations for late DMARDs gave a total of six possibilities. Results are summarised in the following table. Details are in the appendix.

Second TNF inhibitor followed by late DMARDs v Immediate use of late DMARDs

Late DMARDs	Old values			New values		
	A	B	C	A	B	C
Second TNF inhibitor						
Adal following Etan	145k	95k	76k	47k	39k	33k
Adal following Infl	143k	59k	59k	44k	31k	31k
Etan following Adal	156k	92k	67k	46k	39k	34k
Etan following Infl	164k	63k	63k	45k	32k	32k
Infl following Adal	136k	56k	57k	46k	31k	31k
Infl following Etan	152k	60k	63k	47k	32k	32k

## Part 2 What is the cost effectiveness of using a second TNF inhibitor compared with using rituximab?

### Data

Data for rituximab as follows:

Annual cost £6848 (LRIG, 2006, p 70), with no additional start-up costs

Effectiveness in short-term change  $a=0.2$ ,  $b=0.75$  (mean 0.21: Cohen *et al* (2006) report of REFLEX study cited by ERG report)

Mean time to HAQ change 4 years (based on progression rate of 0.03 commensurate with the general population).

Time on treatment: Since rituximab is given in courses, the continuous distribution assumption for time on treatment in the BRAM is not sustainable. Coding was added to the BRAM to allow time on a particular treatment to be constrained to a multiple of a fixed unit, set to 6 months for rituximab. No short-term quitters could be modelled as it was necessary to include the full cost of the rituximab treatment.

The facility existing within the BRAM to allow for short term quitters was used to account for the ACR20 response rate of 51 percent (LRIG, 2006, p 29): this was taken as the proportion of patients receiving a second course of rituximab, and therefore modelled as a quit rate of 49 percent at 6 months. Those continuing on rituximab were taken as having a mean time on treatment of 4.5 years (LRIG, 2006, p 69). This converts to a probability of 0.125 of quitting after each cycle, which is modelled by sampling from an exponential distribution with mean 3.74 years: this figure gives the intended mean time on treatment when times are rounded up to the nearest multiple of 0.5 years.

Second TNF inhibitor v rituximab (both followed by late DMARDs)

Late DMARDs	Old values			New values		
	A	B	C	A	B	C
Second TNF inhibitor						
Adal following Etan	758k	138k	90k	75k	51k	39k
Adal following Infl	362k	57k	57k	69k	35k	35k
Etan following Adal	298k	115k	73k	58k	45k	36k
Etan following Infl	255k	58k	58k	56k	33k	33k
Infl following Adal	463k	58k	59k	62k	33k	32k
Infl following Etan	919k	61k	67k	67k	34k	34k

**Part 3 What is the impact on cost effectiveness of using alternative dosing assumptions for infliximab including more frequent dosing, dose escalation and vial optimisation?**

All results outside this section assume the use of three 100mg vials of infliximab per treatment, with 6 treatments per year and one additional treatment in the first year. Adding in the costs of monitoring and administration of treatment, these assumptions lead to a start-up cost of £1676.14 and a steady state annual cost of £9333.54.

In this part, the dosing assumptions are varied as described below. Infliximab as second TNF inhibitor is compared with immediate use of the late DMARDs after failure of the first TNF inhibitor. There is then no distinction between options B and C for the effectiveness of the second TNF inhibitor.

**3.1 Assume no vial wastage.**

Based on a 70kg patient, the dose is then 2.1 vials per treatment. This gives a start-up cost of £1298.48 and a steady state annual cost of £7067.59.

*ICER for infliximab compared to immediate late DMARDs with no vial wastage*

Late DMARDs	Old values		New values	
Infl effectiveness	A	B	A	B
Following Adal	109k	41k	32k	22k
Following Etan	106k	43k	33k	23k

**3.2 Dose escalation up to 7.5 mg/kg**

In this case, a 70kg patient would require a dose of 525mg per treatment. With vial wastage, this would mean 6 vials per treatment. This gives a start-up cost of £2935.00 and a steady state annual cost of £16,886.70. An intermediate dose of 5mg/kg would mean 350mg per treatment (4 vials), leading to a start-up cost of £2095.76 and a steady state annual cost of £11,851.26.

*ICER for infliximab compared to immediate late DMARDs with 5mg/kg dose*

Late DMARDs	Old values		New values	
Infl effectiveness	A	B	A	B
Following Adal	178k	76k	57k	40k
Following Etan	211k	81k	61k	42k

*ICER for infliximab compared to immediate late DMARDs with 7.5mg/kg dose*

Late DMARDs	Old values		New values	
Infl effectiveness	A	B	A	B
Following Adal	264k	112k	85k	60k
Following Etan	314k	120k	91k	63k

**3.3 Increased frequency of dosing of 6 and 4 weeks**

In line with previous work, these were interpreted as 8 and 12 doses per year respectively in steady state, with an additional dose in the first year. Assuming 3 vials per dose the start-up cost would be £1676.14 in each case, with a steady state annual cost of £12,062.72 for dosing every 6 weeks and £17,521.08 for dosing every 4 weeks.

*ICER for infliximab compared to immediate late DMARDs with doses every 6 weeks*

Late DMARDs	Old values		New values	
Infl effectiveness	A	B	A	B
Following Adal	180k	76k	58k	41k
Following Etan	224k	85k	65k	45k

*ICER for infliximab compared to immediate late DMARDs with doses every 4 weeks*

Late DMARDs	Old values		New values	
Infl effectiveness	A	B	A	B
Following Adal	270k	115k	87k	61k
Following Etan	320k	122k	93k	64k

**Part 4 What is the minimum effectiveness required for a second TNF inhibitor to be cost effective at a willingness to pay of £20,000 per QALY and £30,000 per QALY?**

***Method***

The aim was to find the effectiveness at which each TNF inhibitor would be just cost-effective at a threshold of £20k/QALY or £30k/QALY compared to immediate use of late DMARDs. Effect was interpreted as the mean HAQ multiplier, and this is the value reported in the table below.

Two issues of interpretation were required. Firstly, the mean HAQ multiplier is the mean of a beta distribution with two parameters, so it was necessary to constrain the variation in parameters to one dimension. Secondly, the stochastic nature of the model required a policy for deciding when the model had been run for sufficiently many patients.

The  $a$  and  $b$  parameters for the HAQ multiplier distribution were simultaneously varied preserving the sum  $a+b$ , using the option B values as the starting point. The number of patients used in the simulation was increased as necessary to find a multiple of 0.01 for  $a$  such that the quasi confidence interval for the ICER crossed the desired threshold at that value of  $a$ , but not if  $a$  were increased or decreased by 0.01. Occasionally, it was necessary to use multiples of 0.005 for this purpose.

***Results***

Late DMARDs	Old values		New values	
	£20k	£30k	£20k	£30k
Second TNF inhibitor				
Adal following Etan	0.88	0.55	0.60	0.30
Adal following Infl	0.83	0.54	0.58	0.30
Etan following Adal	0.86	0.55	0.60	0.30
Etan following Infl	0.83	0.54	0.58	0.30
Infl following Adal	0.83	0.53	0.57	0.29
Infl following Etan	0.83	0.54	0.58	0.30

## References

Bombardieri S *et al* (2007) Effectiveness of adalimumab for rheumatoid arthritis in patients with a history of TNF-antagonist therapy in clinical practice. *Rheumatology* 46, 1191-1199.

Chen YF *et al* (2006) A systematic review of the effectiveness of adalimumab, etanercept and infliximab for the treatment of rheumatoid arthritis in adults and an economic evaluation of their cost-effectiveness. *Health Technology Assessment* 10(42).

Cohen SB *et al* (2006) Rituximab for rheumatoid arthritis refractory to anti-tumor necrosis factor therapy: results of a multicenter, randomized, double-blind, placebo-controlled, phase III trial evaluating primary efficacy and safety at twenty-four weeks. *Arthritis and Rheumatism* 54(9), 2793-2806.

DSU (2008) The sequential use of TNF inhibitors: update to a report by the decision support unit. School of Health and Related Research, University of Sheffield.

LRIG (Liverpool Reviews and Implementation Group, 2006) Rituximab for the treatment of rheumatoid arthritis. Evidence Review Group report to NICE. [www.nice.org.uk](http://www.nice.org.uk) most recently accessed 24 January 2008.

Lunt M (2006) Effect of a second course of anti-TNF therapy on HAQ following lack of response to the first course. Report to NICE. Available [www.nice.org.uk](http://www.nice.org.uk).



## Appendix

The tables in this appendix give the full model results summarised in the main report. For parts 1 to 3, the complete output is shown. For part 4, only the ICER results are shown for the various combinations of *a* and *b* parameters.

### Part 1

Option A for TNF inhibitor effectiveness; old values for late DMARDs

*Second TNF inhibitor following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67469	477	4.9064	0.0391
Infl	52475	366	4.8413	0.0370
Base	14994	547	0.0651	0.0340
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Base	48740	459	0.3134	0.0347
Infl - Base	33746	354	0.2483	0.0340
Etan - Infl	14994	547	0.0651	0.0340
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Base	156,000		127,000	200,000
Infl - Base	136,000		107,000	187,000
Etan - Infl	Etan more costly than Infl; difference in QALYs not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	51873	265	4.7095	0.0260
Infl	51448	255	4.6959	0.0258
Base	18317	68	4.4782	0.0232
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	33556	256	0.2813	0.0241
Infl - Base	33131	247	0.2177	0.0239
Infl - Adal	-425	338	-0.0136	0.0237
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	145,000		120,000	183,000
Infl - Base	152,000		125,000	195,000
Infl - Adal	Result not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53118	377	4.8498	0.0371
Etan	68139	484	4.9102	0.0390
Base	18865	97	4.6103	0.0336
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	34253	367	0.2395	0.0339
Etan - Base	49274	467	0.2999	0.0349
Etan - Adal	15021	566	0.0604	0.0343
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	143,000		111,000	200,000
Etan - Base	164,000		133,000	214,000
Etan - Adal	Etan more costly than Adal; difference in QALYs not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option B for TNF inhibitor effectiveness; old values for late DMARDs  
*Second TNF inhibitor following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67560	477	5.1268	0.0397
Infl	53020	368	5.2058	0.0372
Base	18740	97	4.5940	0.0333
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Base	48790	459	0.5328	0.0360
Infl - Base	34280	357	0.6118	0.0352
Etan - Infl	14509	552	-0.0790	0.0365
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Base	91,600		80,600	106,000
Infl - Base	56,000		50,200	63,400
Etan - Infl	Infliximab dominates etanercept			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	52020	265	4.8377	0.0262
Infl	52126	258	5.0486	0.0260
Base	18321	68	4.4811	0.0232
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	33699	257	0.3566	0.0245
Infl - Base	33805	250	0.5675	0.0245
Infl - Adal	106	341	0.2109	0.0250
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	94,500		83,000	110,000
Infl - Base	59,600		54,800	65,300
Infl - Adal	Infl more effective than Adal; difference in cost not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53682	382	5.1847	0.0374
Etan	68977	488	5.3998	0.0397
Base	18836	97	4.5987	0.0335
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	34846	373	0.5860	0.0350
Etan - Base	50141	471	0.8010	0.0368
Etan - Adal	15295	573	0.2151	0.0373
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	59,500		53,000	67,700
Etan - Base	62,600		57,200	69,100
Etan - Adal	71,100		52,500	110,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option C for TNF inhibitor effectiveness; old values for late DMARDs  
*Second TNF inhibitor following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67852	478	5.3259	0.0407
Infl	52981	368	5.1988	0.0372
Base	18726	97	4.5932	0.0332
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Base	49126	461	0.7327	0.0373
Infl - Base	34255	357	0.6056	0.0352
Etan - Infl	14871	553	0.1270	0.0377
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Base	67,100		60,800	74,800
Infl - Base	56,600		50,600	64,100
Etan - Infl	117,000		73,200	291,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	52082	378	4.9484	0.0374
Infl	51832	362	5.0322	0.0366
Base	18362	97	4.5029	0.0326
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	33720	366	0.4455	0.0351
Infl - Base	33469	351	0.5293	0.0347
Infl - Adal	-250	485	0.0838	0.0362
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	75,700		65,300	90,000
Infl - Base	63,200		55,800	72,900
Infl - Adal	Infl more effective than Adal: difference in cost not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53682	382	5.1847	0.0374
Etan	68977	488	5.3998	0.0397
Base	18836	97	4.5987	0.0335
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	34846	373	0.5860	0.0350
Etan - Base	50141	471	0.8010	0.0368
Etan - Adal	15295	573	0.2151	0.0373
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	59,500		53,000	67,700
Etan - Base	62,600		57,200	69,100
Etan - Adal	71,100		52,500	110,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option A for TNF inhibitor effectiveness; new values for late DMARDs

*Second TNF inhibitor following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67409	482	4.1766	0.0377
Infl	52551	367	3.8538	0.0351
Base	18376	98	3.1085	0.0310
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Base	49033	464	1.0681	0.0269
Infl - Base	34176	356	0.7453	0.0253
Etan - Infl	14857	554	0.3228	0.0287
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Base	45,900		43,600	48,500
Infl - Base	45,900		42,800	49,400
Etan - Infl	46,000		38,600	57,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	51593	378	3.7510	0.0347
Infl	50647	358	3.7187	0.0344
Base	17803	97	3.0269	0.0303
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	33790	365	0.7241	0.0247
Infl - Base	32844	346	0.6918	0.0248
Infl - Adal	-946	479	-0.0323	0.0268
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	46,700		43,600	50,300
Infl - Base	47,500		44,200	51,300
Infl - Adal	Comparison is inconclusive			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53042	386	3.8591	0.0354
Etan	67147	479	4.1566	0.0375
Base	18079	98	3.0727	0.0308
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	34963	374	0.7865	0.0248
Etan - Base	49068	461	1.0839	0.0270
Etan - Adal	14105	565	0.2975	0.0288
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	44,500		41,700	47,600
Etan - Base	45,300		43,000	47,800
Etan - Adal	47,400		39,200	60,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option B for TNF inhibitor effectiveness; new values for late DMARDs

*Second TNF inhibitor following adalimumab (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67723	340	4.3562	0.0271
Infl	52897	258	4.1891	0.0251
Base	18282	69	3.0767	0.0220
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Base	49441	328	1.2795	0.0202
Infl - Base	34615	251	1.1124	0.0189
Etan - Infl	14826	392	0.1672	0.0225
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Base	38,600		37,400	40,000
Infl - Base	31,100		30,000	32,300
Etan - Infl	88,700		69,600	122,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	52187	380	3.9046	0.0350
Infl	51442	362	4.0550	0.0349
Base	17791	97	3.0152	0.0302
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	34395	368	0.8894	0.0258
Infl - Base	33651	350	1.0398	0.0268
Infl - Adal	-744	485	0.1504	0.0297
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	38,700		36,400	41,200
Infl - Base	32,400		30,700	34,300
Infl - Adal	Infl more effective than adal; difference in cost not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53231	272	4.1942	0.0253
Etan	68362	344	4.6558	0.0274
Base	18123	69	3.0717	0.0219
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	35108	263	1.1225	0.0190
Etan - Base	50239	331	1.5841	0.0212
Etan - Adal	15131	402	0.4616	0.0232
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	31,300		30,200	32,500
Etan - Base	31,700		30,800	32,700
Etan - Adal	32,800		29,400	37,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option C for TNF inhibitor effectiveness; new values for late DMARDs  
*Second TNF inhibitor following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	68049	341	4.5586	0.0279
Infl	52964	258	4.1965	0.0251
Base	18310	69	3.0800	0.0220
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Base	49739	329	1.4787	0.0217
Infl - Base	34654	251	1.1165	0.0189
Etan - Infl	15085	393	0.3622	0.0238
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Base	33,600		32,600	34,800
Infl - Base	31,000		29,900	32,200
Etan - Infl	41,600		36,500	48,500

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	52521	381	4.0542	0.0357
Infl	51475	363	4.0625	0.0349
Base	17799	97	3.0141	0.0302
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	34721	368	1.0401	0.0271
Infl - Base	33676	351	1.0484	0.0269
Infl - Adal	-1045	486	0.0082	0.0308
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	33,400		31,600	35,400
Infl - Base	32,100		30,400	34,000
Infl - Adal	Comparison is inconclusive			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53231	272	4.1942	0.0253
Etan	68362	344	4.6558	0.0274
Base	18123	69	3.0717	0.0219
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Base	35108	263	1.1225	0.0190
Etan - Base	50239	331	1.5841	0.0212
Etan - Adal	15131	402	0.4616	0.0232
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Base	31,300		30,200	32,500
Etan - Base	31,700		30,800	32,700
Etan - Adal	32,800		29,400	37,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

**Part 2**

Option A for TNF inhibitor effectiveness; old values for late DMARDs

*Second TNF inhibitor following adalimumab (100,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67837	153	4.9163	0.0123
Infl	52878	116	4.8385	0.0117
Ritx	29628	54	4.7883	0.0108
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan – Ritx	38209	152	0.1280	0.0110
Infl – Ritx	23250	119	0.0502	0.0107
Etan – Infl	14959	175	0.0778	0.0108
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan – Ritx	298,000		255,000	361,000
Infl – Ritx	463,000		324,000	809,000
Etan – Infl	192,000		150,000	266,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (1,000,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	52136	38	4.7108	0.0037
Infl	51699	36	4.7050	0.0037
Ritx	28963	17	4.6803	0.0034
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	23174	39	0.0306	0.0034
Infl - Ritx	22736	37	0.0247	0.0034
Infl - Adal	-437	48	-0.0058	0.0033
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	758,000		621,000	973,000
Infl - Ritx	919,000		722,000	1,260,000
Infl - Adal	Adal more costly than Infl; difference in QALYs not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (100,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53137	121	4.8193	0.0117
Etan	68157	154	4.9055	0.0124
Ritx	29530	54	4.7540	0.0108
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	23608	124	0.0652	0.0108
Etan - Ritx	38628	152	0.1515	0.0110
Etan - Adal	15020	179	0.0863	0.0108
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	362,000		272,000	540,000
Etan - Ritx	255,000		223,000	298,000
Etan - Adal	174,000		139,000	233,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option B for TNF inhibitor effectiveness; old values for late DMARDs  
*Second TNF inhibitor following adalimumab (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67915	342	5.1066	0.0282
Infl	53299	260	5.1840	0.0263
Ritx	29494	120	4.7714	0.0239
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Ritx	38421	338	0.3352	0.0253
Infl - Ritx	23805	268	0.4126	0.0246
Etan - Infl	14616	396	-0.0774	0.0257
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Ritx	115,000		99,500	135,000
Infl - Ritx	57,700		51,500	65,600
Etan - Infl	Infliximab dominates etanercept			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	52292	268	4.8529	0.0261
Infl	51776	257	5.0572	0.0261
Ritx	28799	120	4.6827	0.0239
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	23493	274	0.1702	0.0245
Infl - Ritx	22977	264	0.3744	0.0246
Infl - Adal	-516	340	0.2042	0.0249
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	138,000		107,000	194,000
Infl - Ritx	61,400		54,100	70,800
Infl - Adal	Infl more effective than Adal; difference in cost not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53495	270	5.1670	0.0265
Etan	69196	346	5.4350	0.0282
Ritx	29475	121	4.7448	0.0242
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	24020	275	0.4222	0.0244
Etan - Ritx	39721	342	0.6902	0.0255
Etan - Adal	15701	404	0.2680	0.0259
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	56,900		50,900	64,500
Etan - Ritx	57,500		53,500	62,300
Etan - Adal	58,600		48,800	73,300

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option C for TNF inhibitor effectiveness; old values for late DMARDs  
*Second TNF inhibitor following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	68217	486	5.3159	0.0408
Infl	53583	371	5.1912	0.0371
Ritx	29401	168	4.7809	0.0339
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Ritx	38817	479	0.5350	0.0369
Infl - Ritx	24182	382	0.4103	0.0348
Etan - Infl	14634	564	0.1247	0.0377
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Ritx	72,600		63,600	84,400
Infl - Ritx	58,900		50,300	71,200
Etan - Infl	117,000		72,900	301,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	52747	380	4.9395	0.0367
Infl	51492	364	5.0135	0.0366
Ritx	28713	169	4.6721	0.0335
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	24035	387	0.2674	0.0350
Infl - Ritx	22779	375	0.3414	0.0351
Infl - Adal	-1256	483	0.0740	0.0356
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	89,900		71,100	122,000
Infl - Ritx	66,700		55,200	84,300
Infl - Adal	Infliximab dominates adalimumab			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53495	270	5.1670	0.0265
Etan	69196	346	5.4350	0.0282
Ritx	29475	121	4.7448	0.0242
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	24020	275	0.4222	0.0244
Etan - Ritx	39721	342	0.6902	0.0255
Etan - Adal	15701	404	0.2680	0.0259
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	56,900		50,900	64,500
Etan - Ritx	57,500		53,500	62,300
Etan - Adal	58,600		48,800	73,300

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option A for TNF inhibitor effectiveness; new values for late DMARDs

*Second TNF inhibitor following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67456	485	4.1539	0.0374
Infl	52573	369	3.8722	0.0354
Ritx	29189	172	3.4963	0.0312
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Ritx	38297	477	0.6575	0.0281
Infl - Ritx	23414	378	0.3759	0.0267
Etan - Infl	14883	556	0.2816	0.0290
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Ritx	58,200		53,500	63,900
Infl - Ritx	62,300		54,400	72,900
Etan - Infl	52,900		43,400	67,700

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	51382	379	3.6794	0.0343
Infl	51192	360	3.7139	0.0340
Ritx	28581	173	3.3745	0.0305
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	22801	387	0.3049	0.0256
Infl - Ritx	22612	370	0.3394	0.0259
Infl - Adal	-189	481	0.0345	0.0271
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	74,800		63,800	90,200
Infl - Ritx	66,600		57,600	78,900
Infl - Adal	Comparison is inconclusive			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error



*Second TNF inhibitor following infliximab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	52800	384	3.8210	0.0351
Etan	67536	487	4.1573	0.0374
Ritx	28978	171	3.4740	0.0317
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	23822	389	0.3470	0.0263
Etan - Ritx	38558	480	0.6833	0.0281
Etan - Adal	14736	568	0.3363	0.0293
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	68,700		59,500	81,200
Etan - Ritx	56,400		52,000	61,700
Etan - Adal	43,800		36,800	54,100

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option B for TNF inhibitor effectiveness; new values for late DMARDs

*Second TNF inhibitor following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	67606	485	4.3771	0.0384
Infl	53172	372	4.2477	0.0358
Ritx	29170	172	3.5155	0.0314
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Ritx	38436	478	0.8616	0.0299
Infl - Ritx	24002	381	0.7322	0.0285
Etan - Infl	14434	557	0.1294	0.0323
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Ritx	44,600		41,500	48,200
Infl - Ritx	32,800		30,200	35,800
Etan - Infl	112,000		74,100	226,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	51464	266	3.8666	0.0246
Infl	51914	258	4.1058	0.0248
Ritx	28630	122	3.4146	0.0218
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	22834	273	0.4520	0.0192
Infl - Ritx	23284	265	0.6912	0.0197
Infl - Adal	450	341	0.2392	0.0211
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	50,500		46,400	55,400
Infl - Ritx	33,700		31,700	35,900
Infl - Adal	Infl more effective than Adal; difference in cost not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53103	385	4.1570	0.0357
Etan	68486	487	4.6621	0.0386
Ritx	28941	171	3.4574	0.0317
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	24162	390	0.6996	0.0282
Etan - Ritx	39545	483	1.2047	0.0310
Etan - Adal	15383	571	0.5051	0.0338
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	34,500		31,800	37,800
Etan - Ritx	32,800		31,100	34,800
Etan - Adal	30,500		26,400	36,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Option C for TNF inhibitor effectiveness; new values for late DMARDs  
*Second TNF inhibitor following adalimumab (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Etan	68131	344	4.6041	0.0281
Infl	52984	261	4.2491	0.0253
Ritx	29190	121	3.5106	0.0221
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Etan - Ritx	38941	340	1.0935	0.0227
Infl - Ritx	23793	268	0.7385	0.0199
Etan - Infl	15148	397	0.3550	0.0243
Comparison	ICER (£/QALY)		Quasi confidence interval	
Etan - Ritx	35,600		34,100	37,300
Infl - Ritx	32,200		30,400	34,200
Etan - Infl	42,700		37,200	50,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following etanercept (20,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	51686	267	4.0091	0.0250
Infl	51998	259	4.1098	0.0249
Ritx	28645	123	3.4190	0.0218
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	23041	274	0.5901	0.0201
Infl - Ritx	23353	266	0.6908	0.0198
Infl - Adal	313	343	0.1007	0.0219
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	39,000		36,400	42,100
Infl - Ritx	33,800		31,800	36,000
Infl - Adal	Infl more effective than Adal; difference in cost not determined			

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Second TNF inhibitor following infliximab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Adal	53103	385	4.1570	0.0357
Etan	68486	487	4.6621	0.0386
Ritx	28941	171	3.4574	0.0317
Comparison	Diff Cost (£)	Q.S.E.	Diff QALY	Q.S.E.
Adal - Ritx	24162	390	0.6996	0.0282
Etan - Ritx	39545	483	1.2047	0.0310
Etan - Adal	15383	571	0.5051	0.0338
Comparison	ICER (£/QALY)		Quasi confidence interval	
Adal - Ritx	34,500		31,800	37,800
Etan - Ritx	32,800		31,100	34,800
Etan - Adal	30,500		26,400	36,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

**Part 3**

No vial wastage option A for infliximab effectiveness old values for late DMARDs

*Infliximab following adalimumab (40,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	43015	138	4.8168	0.0185
Base	18738	48	4.5934	0.0168
Infl – Base	24276	134	0.2233	0.0170
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	109,000		94,300	128,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	42194	137	4.7387	0.0184
Base	18429	48	4.5151	0.0167
Infl – Base	23765	132	0.2236	0.0169
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	106,000		92,300	125,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

No vial wastage option B for infliximab effectiveness old values for late DMARDs

*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	43497	277	5.1990	0.0375
Base	18699	98	4.5921	0.0355
Infl – Base	24797	269	0.6069	0.0352
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	40,900		36,500	46,300

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	42577	273	5.0454	0.0368
Base	18396	96	4.4896	0.0335
Infl – Base	24181	263	0.5559	0.0344
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	43,500		38,600	49,800

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

No vial wastage option A for infliximab effectiveness new values for late DMARDs

*Infliximab following adalimumab (40,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	42523	138	3.8620	0.0176
Base	18157	49	3.0977	0.0155
Infl – Base	24366	133	0.7643	0.0125
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	31,900		30,800	33,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	41796	271	3.7327	0.0346
Base	17740	96	3.0103	0.0308
Infl – Base	24056	260	0.7225	0.0243
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	33,300		31,100	35,800

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

No vial wastage option B for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	42722	276	4.2254	0.0360
Base	18074	98	3.1002	0.0310
Infl – Base	24648	266	1.1251	0.0270
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	21,900		20,800	23,100

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	42130	272	4.0781	0.0352
Base	17692	96	3.0167	0.0309
Infl – Base	24438	261	1.0615	0.0262
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	23,000		21,800	24,300

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Dose of 5mg/kg option A for infliximab effectiveness old values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	64096	467	4.8637	0.0373
Base	18773	98	4.6092	0.0337
Infl – Base	45323	457	0.2545	0.0343
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	178,000		140,000	244,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	62474	456	4.6949	0.0366
Base	18404	96	4.4862	0.0334
Infl – Base	44070	444	0.2086	0.0335
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	211,000		160,000	311,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Dose of 5mg/kg option B for infliximab effectiveness old values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	64581	469	5.1990	0.0375
Base	18699	98	4.5921	0.0335
Infl – Base	45882	459	0.6069	0.0352
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	75,600		67,600	85,700

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	63205	460	5.0454	0.0368
Base	18396	96	4.4896	0.0335
Infl – Base	44809	448	0.5559	0.0344
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	80,600		71,600	92,200

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Dose of 5mg/kg option A for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	62736	462	3.8634	0.0353
Base	18043	98	3.0840	0.0309
Infl – Base	44693	450	0.7794	0.0251
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	57,300		53,700	61,500

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	62156	457	3.7327	0.0346
Base	17740	96	3.0103	0.0308
Infl – Base	44415	444	0.7225	0.0243
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	61,500		57,400	66,100

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Dose of 5mg/kg option B for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	63467	465	4.2254	0.0360
Base	18074	98	3.1002	0.0310
Infl – Base	45393	454	1.1251	0.0270
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	40,300		38,400	42,600

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (0,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	62697	459	4.0781	0.0352
Base	17692	96	3.0167	0.0309
Infl – Base	45005	447	1.0615	0.0262
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	42,400		40,300	44,800

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Dose of 7.5mg/kg option A for infliximab effectiveness old values for late DMARDs  
*Infliximab following adalimumab (0,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	86084	672	4.8637	0.0373
Base	18773	98	4.6092	0.0337
Infl – Base	67311	661	0.2545	0.0343
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	264,000		208,000	362,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	83899	655	4.6949	0.0366
Base	18404	96	4.4862	0.0334
Infl – Base	65494	642	0.2086	0.0335
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	314,000		237,000	463,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Dose of 7.5mg/kg option B for infliximab effectiveness old values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	86776	675	5.1990	0.0375
Base	18699	98	4.5921	0.0335
Infl – Base	68077	665	0.6069	0.0352
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	112,000		100,000	127,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	84919	662	5.0454	0.0368
Base	18396	96	4.4896	0.0335
Infl – Base	66523	649	0.5559	0.0344
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	120,000		106,000	137,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Dose of 7.5mg/kg option A for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (0,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	84294	664	3.8634	0.0353
Base	18043	98	3.0840	0.0309
Infl – Base	66251	652	0.7794	0.0251
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	85,000		79,600	91,100

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (0,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	83587	656	3.7327	0.0346
Base	17740	96	3.0103	0.0308
Infl – Base	65846	643	0.7225	0.0243
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	91,100		85,200	98,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Dose of 7.5mg/kg option B for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	85303	669	4.2254	0.0360
Base	18074	98	3.1002	0.0310
Infl – Base	67229	658	1.1251	0.0270
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	59,800		56,800	63,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	84345	660	4.0781	0.0352
Base	17692	96	3.0167	0.0309
Infl – Base	66654	647	1.0615	0.0262
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	62,800		59,600	66,300

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Every 6 weeks option A for infliximab effectiveness old values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	64565	475	4.8637	0.0373
Base	18773	98	4.6092	0.0337
Infl – Base	45792	466	0.2545	0.0343
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	180,000		142,000	247,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	65127	485	4.6949	0.0366
Base	18404	96	4.4862	0.0334
Infl – Base	46722	473	0.2086	0.0335
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	224,000		169,000	330,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Every 6 weeks option B for infliximab effectiveness old values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	65059	477	5.1990	0.0375
Base	18699	98	4.5921	0.0335
Infl – Base	46359	468	0.6069	0.0352
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	76,400		68,300	86,600

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	65901	490	5.0454	0.0368
Base	18396	96	4.4896	0.0335
Infl – Base	47505	478	0.5559	0.0344
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	85,500		75,900	97,700

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Every 6 weeks option A for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	63187	471	3.8634	0.0353
Base	18043	98	3.0840	0.0309
Infl – Base	45144	459	0.7794	0.0251
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	57,900		54,300	62,100

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	64809	486	3.7327	0.0346
Base	17740	96	3.0103	0.0308
Infl – Base	47069	474	0.7225	0.0243
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	65,200		60,900	70,100

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Every 6 weeks option B for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (0,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	63929	474	4.2254	0.0360
Base	18074	98	3.1002	0.0310
Infl – Base	45855	463	1.1251	0.0270
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	40,800		38,700	43,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (0,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	65383	489	4.0781	0.0352
Base	17692	96	3.0167	0.0309
Infl – Base	47691	476	1.0615	0.0262
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	44,900		42,700	47,500

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Every 4 weeks option A for infliximab effectiveness old values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	87489	698	4.8637	0.0373
Base	18773	98	4.6092	0.0337
Infl – Base	68716	687	0.2545	0.0343
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	270,000		213,000	370,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	85233	680	4.6949	0.0366
Base	18404	96	4.4862	0.0334
Infl – Base	66829	668	0.2086	0.0335
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	320,000		242,000	472,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Every 4 weeks option B for infliximab effectiveness old values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	88207	701	5.1990	0.0375
Base	18699	98	4.5921	0.0335
Infl – Base	69508	691	0.6069	0.0352
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	115,000		102,000	130,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	86290	688	5.0454	0.0368
Base	18396	96	4.4896	0.0335
Infl – Base	67894	675	0.5559	0.0344
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	122,000		109,000	140,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error



Every 4 weeks option A for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	85646	690	3.8634	0.0353
Base	18043	98	3.0840	0.0309
Infl – Base	67603	677	0.7794	0.0251
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	86,700		81,300	93,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	84922	682	3.7327	0.0346
Base	17740	96	3.0103	0.0308
Infl – Base	67182	669	0.7225	0.0243
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	93,000		86,900	100,000

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

Every 4 weeks option B for infliximab effectiveness new values for late DMARDs  
*Infliximab following adalimumab (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	86690	695	4.2254	0.0360
Base	18074	98	3.1002	0.0310
Infl – Base	68616	684	1.1251	0.0270
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	61,000		58,000	64,300

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

*Infliximab following etanercept (10,000 patients)*

Option	Cost (£)	Q.S.E.	QALYs	Q.S.E.
Infl	85708	686	4.0781	0.0352
Base	17692	96	3.0167	0.0309
Infl – Base	68016	673	1.0615	0.0262
Comparison	ICER (£/QALY)		Quasi confidence interval	
Infl – Base	64,100		60,800	67,700

ICER = Incremental Cost-Effectiveness Ratio, QSE = Quasi Standard Error

**Part 4**

Each row of each table in this part gives the  $a$  and  $b$  parameters for the second TNF inhibitor named at the top of the table, together with the ICER and its quasi confidence interval when compared against immediate use of late DMARDs

Old values for late DMARDs

*Following adalimumab:*

Etanercept (400, 000 patients)

$A$	$B$	ICER	Quasi confidence interval	
0.59	0.50	30,200	30,000	30,500
0.595	0.495	30,000	29,700	30,200
0.60	0.49	29,700	29,500	30,000

Etanercept (400, 000 patients)

$A$	$B$	ICER	Quasi confidence interval	
0.93	0.16	20,200	20,100	20,300
0.94	0.15	20,000	19,900	20,100
0.95	0.14	19,900	19,800	20,000

Infliximab (1,000,000 patients)

$A$	$B$	ICER	Quasi confidence interval	
1.12	1.00	30,300	30,100	30,500
1.13	0.99	30,000	29,800	30,200
1.14	0.98	29,800	29,600	30,000

Infliximab (1,000,000 patients)

$A$	$B$	ICER	Quasi confidence interval	
1.74	0.38	20,100	20,000	20,200
1.75	0.37	20,000	19,900	20,100
1.76	0.36	19,900	19,800	20,000

*Following etanercept:*

Adalimumab (200,000 patients)

$A$	$B$	ICER	Quasi confidence interval	
0.59	0.50	30,400	30,000	30,900
0.60	0.49	30,000	29,500	30,400
0.61	0.48	29,500	29,100	29,900

Adalimumab (1,000,000 patients)

$A$	$B$	ICER	Quasi confidence interval	
0.95	0.14	20,100	20,000	20,200
0.955	0.135	20,000	19,900	20,100
0.96	0.13	19,900	19,800	20,000

Infliximab (1,000,000 patients)

$A$	$B$	ICER	Quasi confidence interval	
1.14	0.98	30,300	30,100	30,500
1.15	0.97	30,000	29,800	30,200
1.16	0.96	29,700	29,600	29,900

Infliximab (1,000,000 patients)

$A$	$B$	ICER	Quasi confidence interval	
1.76	0.36	20,100	20,000	20,200
1.77	0.35	20,000	19,900	20,100
1.78	0.34	19,900	19,800	20,000

Following infliximab:

Adalimumab (1,000,000 patients)

A	B	ICER	Quasi confidence interval	
1.13	0.99	30,200	30,000	30,400
1.14	0.98	29,900	29,700	30,100
1.15	0.97	29,700	29,500	29,900

Adalimumab (1,000,000 patients)

A	B	ICER	Quasi confidence interval	
1.75	0.37	20,100	20,000	20,200
1.76	0.36	20,000	19,900	20,100
1.77	0.35	19,900	19,900	20,000

Etanercept (1,000, 000 patients)

A	B	ICER	Quasi confidence interval	
1.14	0.98	30,200	30,000	30,300
1.15	0.97	29,900	29,800	30,100
1.16	1.96	29,700	29,500	29,800

Etanercept (400, 000 patients)

A	B	ICER	Quasi confidence interval	
1.75	0.37	20,100	20,000	20,200
1.76	0.36	20,000	19,900	20,100
1.77	0.35	19,900	19,800	20,000

New values for late DMARDs

Following adalimumab:

Etanercept (200, 000 patients)

A	B	ICER	Quasi confidence interval	
0.32	0.77	30,400	30,200	30,700
0.33	0.76	29,900	29,700	30,200
0.34	0.75	29,400	29,200	29,700

Etanercept (200, 000 patients)

A	B	ICER	Quasi confidence interval	
0.64	0.45	20,200	20,000	20,300
0.65	0.44	20,000	19,800	20,100
0.66	0.43	19,800	19,600	19,900

Infliximab (1,000,000 patients)

A	B	ICER	Quasi confidence interval	
0.61	1.51	30,200	30,000	30,300
0.62	1.50	29,900	29,800	30,100
0.63	1.49	29,700	29,500	29,800

Infliximab (1,000,000 patients)

A	B	ICER	Quasi confidence interval	
1.21	0.91	20,100	20,000	20,200
1.22	0.90	20,000	19,900	20,100
1.23	0.89	19,900	19,800	20,000

Following etanercept:

Adalimumab (200,000 patients)

A	B	ICER	Quasi confidence interval	
0.32	0.77	30,600	30,200	30,900
0.33	0.76	30,100	29,700	30,400
0.34	0.75	29,600	29,300	30,000

Adalimumab (200,000 patients)

A	B	ICER	Quasi confidence interval	
0.64	0.45	20,200	20,000	20,400
0.65	0.44	20,000	19,800	20,200
0.66	0.43	19,800	19,600	20,000

Infliximab (400,000 patients)

A	B	ICER	Quasi confidence interval	
0.62	1.50	30,200	30,000	30,500
0.63	1.49	30,000	29,700	30,200
0.64	1.48	29,700	29,500	29,900

Infliximab (400,000 patients)

A	B	ICER	Quasi confidence interval	
1.22	0.90	20,100	20,000	20,200
1.23	0.89	20,000	19,900	20,100
1.24	0.88	19,900	19,800	20,000

*Following infliximab:*

Adalimumab (1,000,000 patients)

A	B	ICER	Quasi confidence interval	
0.62	1.50	30,200	30,100	30,400
0.63	1.49	30,000	29,800	30,100
0.64	1.48	29,700	29,600	29,900

Adalimumab (1,000,000 patients)

A	B	ICER	Quasi confidence interval	
1.23	0.89	20,100	20,000	20,200
1.24	0.88	20,000	19,900	20,100
1.25	0.87	19,900	19,800	20,000

Etanercept (400,000 patients)

A	B	ICER	Quasi confidence interval	
0.63	1.49	30,100	30,000	30,300
0.64	1.48	29,900	29,700	30,100
0.65	1.47	29,700	29,500	29,800

Etanercept (400,000 patients)

A	B	ICER	Quasi confidence interval	
1.23	0.89	20,100	20,000	20,200
1.24	0.88	20,000	19,900	20,100
1.25	0.87	19,900	19,800	20,000